ANNUAL REPORT
2021-22

Indian Institute of Technology (BHU) Varanasi

Annual Report 2021-22

Indian Institute of Technology (BHU) Varanasi

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Director's Report

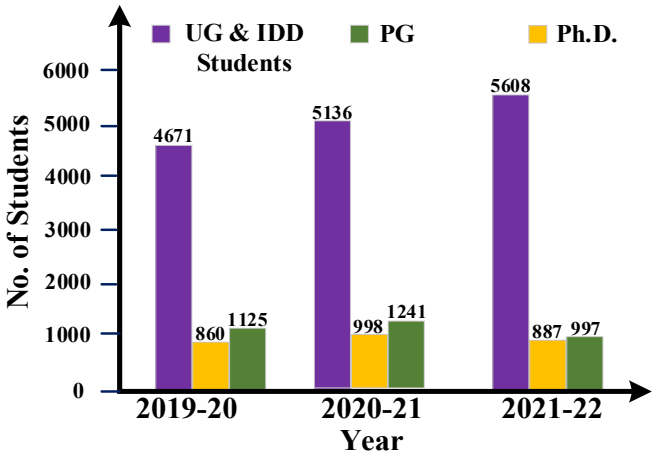
Prof. Pramod K Jain
Director, IIT(BHU) Varanasi

"The New IIT (BHU) Varanasi emerges from the old, building on its earlier strengths and transforming itself to meet the challenges of the future"

Indian Institute of Technology (BHU) Varanasi owes its existence to Mahamana Pandit Madan Mohan Malviya, Bharat Ratna -the founder of the first residential university of modern India, who could foresee the vital role of technical education in strengthening independent India. Engineering education in the institute started in 1919 with the establishment of Banaras Engineering College (BENCO). The next stage of development saw the establishment of College of Technology (TECHNO) and College of Mining & Metallurgy (MINMET). In 1968, the erstwhile engineering colleges of BHU, namely BENCO, MINMET, and TECHNO were merged to form the Institute of Technology (IT-BHU). The erstwhile IT-BHU was ranked consistently amongst the top engineering institutions of the country. IT-BHU became IIT (BHU) Varanasi on June 29, 2012, by an Act of Parliament.

Academic Activities

The institute has maintained a high academic standard since its inception. It has produced luminary engineers and administrators who have served the nation with distinction. The current student strength is 7492 with 4004 B. Techs, 1551 IDDs, 53 B.Archs., 712 M. Techs, 95 M.Scs., 80M. Pharms. and 997 Ph.D. students after Ph.D. admission of even semester 2021-22. The student strength of previous three years and its steady increase is shown in the figure below:



IIT (BHU) Varanasi has started admitting students under a joint PhD program with IIT Guwahati. The vision behind this unique academic programme is to build a "Network of Excellence" of all IITs rather than each one striving to become a "Tower of Excellence.". Through this academic collaboration, both the institutes are expecting a significant boost in high-quality research and foundation for further academic collaborations. Considering the National Education Policy (NEP-2020), such educational reforms and academic collaborations between premier educational institutes will promote multidisciplinary academic programs and research for the knowledge-based economy of the country. Both the institutes are also considering to start a Joint M. Tech. program on a similar line to provide multi-institutional and multidisciplinary M.Tech. programs.

Displaying a great example of resilience, amidst the COVID-19 crisis, IIT (BHU) Varanasi smoothly migrated to the online teaching-learning system to ensure an uninterrupted flow of knowledge exchange. Subsequently, all the classes and examinations were successfully conducted in the online mode. The institute has also completely migrated to National Knowledge Network (NKN)'s 10 Gbps link harnessing high-speed high-performance internet access lending support to various online activities.

The current strength of regular faculty members of the institute is 324. In addition to this, 09 visiting professors also contribute to the academic activities of the institute. Further, under the alumni visiting programme, alumni also participate in teaching and help the students to learn about latest industy practices and keep them abreast about the skill requirements in various sectors of the industry. This adds a practical value to the overall education being imparted to the students.

At present, the institute has 15 departments and three interdisciplinary schools. Central facilities in the institute include the Supercomputing Centre, Computing and Information Services (CCIS), Central Instrumentation Facility (CIF), Main Workshop, Institute Main Library, and Industrial Consultancy & Testing Services. Besides, Teaching and Learning Cell (TLC) continues to extend expert training in all aspects of pedagogy, course delivery, laboratory projects, and assessment.

With a view to expanding its academic programs, the Department of Computer Science & Engineering, has started the M.Tech. courses with specialization in Artificial Intelligence (AI) and Internet of Things (IoT) from the academic session 2021-22.

Implementation of National Education Policy (NEP-2020)

IIT (BHU) Varanasi is also making major reforms in the educational ecosystem and dedicated to implement National Education Policy (NEP-2020), a government's vision for a paradigm change in Indian education. Few key highlights related to academics are listed below:

- The institute is working for the implementation of NEP-2020 for quality and inclusive multidisciplinary education. Recently, a Memorandum of Understanding has been signed between IIT Guwahati and IIT (BHU) Varanasi. Under this MoU, IIT (BHU) Varanasi and IIT Guwahati will started Joint Doctoral Programme from July 2021. The vision behind this is to build a "Network of Excellence" of IITs rather than each one striving to become a "Tower of Excellence". Through this academic collaboration, both the institutes are expecting a significant boost in high-quality research and foundation for further academic collaborations.

- The institute is promoting multidisciplinary academic programs and research for the knowledge-based economy of the country. The institute is also considering starting Joint MTech programs with other selected institutes of national importance to provide multi-institutional and multidisciplinary education.

- The Institute provides a greater flexibility for teaching-learning with a highly "Student Centric" approaches. The semester(s) drop option provides opportunity to students for start-up/entrepreneurship / extended practical learning during regular academic programmes as per their interest. The student may re-enter the academic programme and earn the degree. The institute has made detailed guidelines for credit transfer of courses from other Institutes and through NPTEL/SWAYAM etc. This gives students a greater flexibility to plan their academic career and pursue academic interest. Students can even earn credit during semester drop and transfer the earned credit for the award of degree following the credit transfer guideline of the Institute.

- In line with recommendations of NEP-2020 for multidisciplinary learning, guidelines for open electives from another discipline are formulated to make the learning of open elective courses more meaningful. Further, a provision for "Minor Discipline" courses was also given for providing students an opportunity to learn another academic area for the students doing very well in their major academic Programme. It is expected to supplement learning in the major discipline and help in developing interdisciplinary knowledge for problem solving in cutting edge areas of Engineering, Technology and Science. Integrated Dual Degree students will be allowed to change their discipline after 4 Year for B. Tech in the original discipline and M. Tech in the new discipline.

Research & Development activities

Our institute has a mission to fulfill the needs of the nation through Research and Innovation. Faculty members and students are engaged in cutting-edge research under various schemes. To inculcate research culture in the students, the institute has set up Tinkering Labs in various departments. Students are involved in research projects from almost the early stage of their education. The institute extends partial support to the research initiatives of faculty members through grants like Seed Money and Research Support Grant. The institute also provides Lab Grants for the up-gradation of teaching labs and supports Central Instrument Facility acquisitions.

A new initiative of IIT (BHU) Varanasi, green and sustainable technology initiative, aims at promoting interdisciplinary research with industry collaboration for developing indigenous green, clean, and sustainable technologies that may be cost-effective, fulfill the local needs, and can be scalable to a global scale. The initiative aims to achieve excellence in research and capacity building on green & sustainable technologies and related applications, and leverage these technologies for the benefit of India.

(i) Sponsored Projects and MOUs

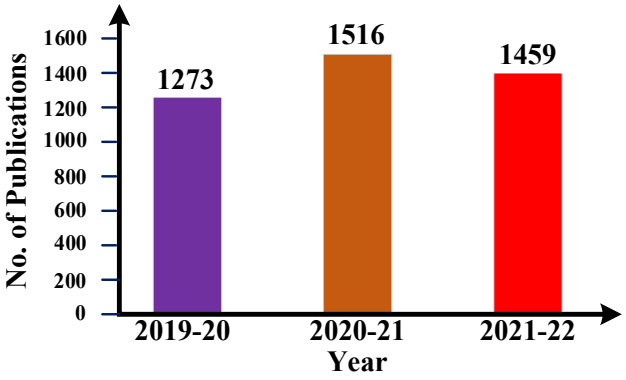
The institute has proven expertise in the areas of steel, advanced materials, microwave technology, electrical and electronic devices, artificial intelligence, composite materials, novel reactor design, new drugs, and sensors/ biosensors apart from others. The institute has identified thrust areas of Research in Hydrogen Energy, Environment and Water, Healthcare, Biomedical Devices, Biosensors, Smart microgrids, Smart e-mobility, Quantum Computing, Precision Engineering, Material Science and Drone Technologies. Various technology development and research projects are going on in these areas of research.

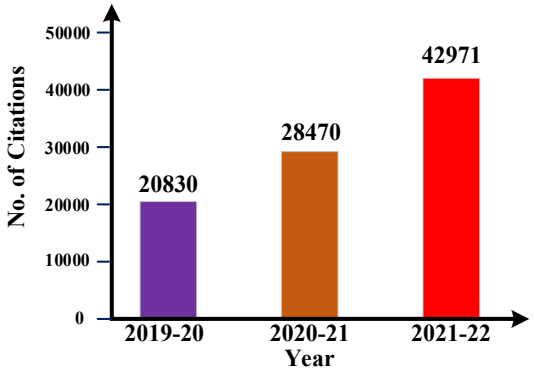
Significant numbers of projects have been initiated to address the national needs and social issues like the development of functional materials for energy, the development of compact hydrogen generation devices, and biofuel cells to energy. Key issues taken up for studies include real-time simulation of smart grids with distributed energy resources and integration/control of renewable energy systems. There are faculty members extensively involved in the design and development of new drugs, biomimetic materials for organs, and biosensors. Institute is collaborating with various other institutions of high repute in India and abroad. In addition, leading industries like Tata Motors, Nissan Motors, Amazon AWS Educate, Power Grid Corporation of India Ltd., Indian Refractory Makers Association (IRMA), Indian Pharmacopoeia Commission (IPC), NCL, CISCO, UPEIDA, ISRO, GAIL (India) Limited, etc. also involved in high tech research.

This year institute has signed five international MoUs from renowned international Institutes/University like University of West Bohemia (UWB), Europe National Cheng Kung University, Taiwan, National Institute of Material Science, Japan, University of Edinburg, UK and Niigata University, Japan. Likewise, during the last one year the institute has signed seven national MoUs including MoU with Premas Biotech Pvt Ltd, G R Infraprojects Limited, Gujarat etc. An MoU was also signed between the Ministry of Road Transport and Highways and IIT (BHU) Varanasi aiming to research, develop, and deploy innovative technologies in road and highway infrastructure. Under this MoU, an endowment fund for 10 years will be created to support Research and Development activities. IIT (BHU) Varanasi will support MoRTH officers to join PhD and M. Tech. programs and also created a Professorial Chair to promote the joint efforts.

Dispelling the doubts cast over by the pandemic, our faculty members have been very focused in research activities. The total amount of the fund generated by the institute through sponsored Projects and Schemes was 31.55 crores during 2021-22. The institute is actively participating in several national research initiatives including ISRO Regional Academic Centre for Space, Collaborative Research Centre of the Indian Pharmacopoeia Commission, Centre of Excellence in Refractories, DST foundered Technology Innovation Hub (TIH) on interdisciplinary data analytics and predictive technology (IDAPT), Center of Energy and Resource Development (CERD), Knowledge partner of UP Defence Corridor, RKVY-RAFTAAR Agri Business Incubator and several more with total budget of about 271 Crores.

The faculty members in 2021-22 have published around 1459 research articles during the pandemic and the total citations were 42971. The figure below shows the progressive development in the number of publications and citations over the years.





(ii) Central Instrumentation Facility (CIF)

Central Instrumentation Facility (CIF) is one of the Specialized Research Facilities at IIT (BHU) Varanasi. Our mission is to provide futuristic research infrastructure and quality education services in support of advanced instrumentation. The CIF offers facilities of sophisticated instruments and technical expertise to support faculty and students' research and industrial R&D. The center has state-of-the-art facilities like Prototyping Machine for electronic circuits, Magnetic Property Measurement System, Tribometer, NMR (500 MHz), thin-film & powder XRD, BET, ICP-MS, high-resolution SEM, Confocal Microscope, and TEM. Few other sophisticated instruments like XPS and Tabletop SEM are recently added to the list amongst others.

(iii) Centre for Computing and Information Services (CCIS)

Centre for Computing and Information Services (CCIS) offers high-end computational servers, web servers, network services, and provides a robust platform for various academic and research activities of the institute. The Centre also manages licensed software, email services, and in-house software development for the institute's needs. CCIS is a growing unit and poised horizontally to meet the crescent demand of the scientific and research community of the institute.

(iv) Precision Engineering Hub

A Precision Engineering Hub (PEH) is one of unique state of the art facilities of the Institute. The purpose of the hub is to serve as an ecosystem for product ideation and creation. The hub is built with the help of funds from Defence Corridor, Design Innovation Centre, and Technology Innovation Hub. It is divided into 4 phases operating on a 24-hour basis. The main focus of PEH is aligned with the national objective to support the Make in India and Atma Nirbhar Bharat initiatives. The latest technology that the hub is equipped with includes laser cutting machines, CNC machines, high strength color polymer 3D printer, composite 3D printer, and Ultimaker S5 Pro 3D printer.

(v) Design and Innovation Centre (DIC)

DIC, IIT(BHU) has been established to work on the possibilities of innovation in Technology and Humanities, Liberal Arts, Social Science, Art, Culture, Music, languages, and other relevant areas. DIC, IIT (BHU) Varanasi and DIC, BHU work as HUB, and the center has three spokes; (i) Indian Institute of Information Technology, Allahabad, (ii) Motilal Nehru National Institute of Technology, Allahabad, (iii) University of Allahabad. The Center has established three labs namely; Graphics and Digital Media Lab, Digital Innovation Gallery & Design Cafe (Prototype lab and Workshop Place).

(vi) Intellectual Property Rights, Testing, and Consultancy

The extension of our expertise and laboratory facilities to the industries of this region is a crucial service activity of the institute. All the major departments of the institute actively engage in providing industrial consultancy and testing services to a large number of industries and entrepreneurs of the region and also to large industrial houses. During this year, several consultancies and testing projects valued approximately Rs.12.88 crores were completed successfully. Further, valuing research and innovation, IIT (BHU) Varanasi has kept exploring ideas and continued experimenting with them. Shouldering its responsibility as one of the premier institutes of our country, the institute has undertaken various initiatives in the Research and Development sector including patents

and IPR. During 2020-2021, a total of 36 patents have been filed and a total of 54 patents published. In the current financial year 2021-22 total 20 patents have been filed while a total 55 patents have been published. Researchers of the institute are continuously working towards them.

(vii) Research Centers

- **Supercomputing Centre**

  A Supercomputing Center has been set up in the institute under the National Supercomputing Mission. The supercomputer PARAM Shivay has a peak processing speed of 833 Tera FLOPS. Sixty percent of the processing power is for local use by the IIT (BHU) Varanasi and BHU research community, and the rest for other CFTIs and research labs across the nation. The system has been commissioned under the "Make in India" program. The system is a sophisticated mix of CPUs and GPUs with relevant systems and application software based on open source. IIT (BHU) Varanasi Supercomputing Centre was inaugurated by honorable Prime Minister Shri Narendra Modi.

- **Malaviya Centre of Excellence for Defence Corridor**

  The Government of Uttar Pradesh has also made IIT (BHU) Varanasi a primary knowledge partner in its prestigious defense corridor project, and institute has thus inked an MOU with Uttar Pradesh Expressway Industrial Development Authority (UPEIDA). Uttar Pradesh Government has allocated Rs. 69 crores for the creation of R&D facilities in niche areas as Centre for Defense Materials and Precision Engineering. The proposal also envisages IIT (BHU) Varanasi as a hub for skill development for defense industrial needs.

- **ISRO Regional Academic Centre for Space**

  ISRO has recognized IIT (BHU) Varanasi as Regional Academic Centre for space (RAC-S). The RAC-S is pursuing advanced research in the areas of relevance to the future technological and programmatic needs of the Indian Space Programme and act as a facilitator for the promotion of space technology activities in the central region comprising the states of Chattisgarh, Madhya Pradesh, and Uttar Pradesh. RAC-S is also engaging other institutes of excellence in the area of Science and Technology in the region to take part in the research and development activities of the centre. ISRO & IIT(BHU) Varanasi has identified the associating institutes from these three states to take part in the programme and to develop the joint project proposals in the research areas of relevance to the space programme. A formal agreement between IIT(BHU) Varanasi and other state institute will be signed for the submission of project. The centre will work on both short- and long-term projects. Short term projects for B.Tech. and M. Tech students, of up to one year duration. Long term R&D projects for the duration more than 1 year. Long Term R&D projects will preferably leading to Ph. D Programme. Other events such as conference, exhibition and short courses will also have conducted to create knowledge base in the region.

- **Sustainable Coal Mining in Northern Coalfields Limited**

  IIT (BHU) Varanasi and NCL joined hands to ensure a robust Industry-Institute partnership given mutual benefit and in the interest of mineral conservation, mine productivity, and advancement in clean technologies in the energy sector. Through this collaboration, NCL also ensures social upliftment of the region surrounding Varanasi, Singraulli, and Sonbhadra by planning and execution of dedicated CSR / welfare projects strictly in terms of the company's CSR policy by involving the Incubation Cell and Coal Research Lab of IIT (BHU) Varanasi.

- **Collaborative research centre of the Indian Pharmacopoeia Commission**

  IIT (BHU) Varanasi is now recognized as a collaborative research center of the Indian Pharmacopoeia Commission (IPC) of Ministry of Health and Family Welfare, which will help to promote quality research in the area of pharmaceutical and medical devices. This will aim to develop new methods and procedures for the analysis of pharmaceutical substances and dosage forms. IIT(BHU) Varanasi also has a focus to reduce healthcare costs by developing low-cost methods of Active Pharmaceutical Ingredients (APIs) to make India self-reliant (Atmnirbhar Bharat) in the sector of bulk drugs. As the regulatory landscape in the health sector has been dynamically evolving in the country to protect the safety, rights, and wellbeing of the patients, the current scientific innovations in drug development and medical devices would play an important role in

the healthcare profession. Therefore, IIT(BHU) Varanasi is striving hard to strengthen the standard setting processes in the sector of pharmacovigilance and medical devices.

- **Centre of Excellence in Refractories**

  The primary aims and objectives of the center are to build up a self-sustaining center for hands-on ceramic research & training at the institute for contributing to our country's knowledge economy. The centre also aims at extending the testing facilities of refractories/high-temperature ceramics and composites for industries as well as national labs/ institutes and government organizations nationwide. The centre is involved in industrial-training programs in key emerging areas that lead to technology-driven innovations for future generation technologies. This center and its facilities are dedicated to implementing various national missions, including, "Make in India", "Creative India Innovate India", "Start-up India", "Kaushal Bharat Kushal Bharat" and "Atmanirbhar Bharat (self-reliant India)".

- **Center of Energy and Resource Development (CERD)**

  The Centre for Energy and Resources Development was established under the Frontier Areas of Science & Technology (FAST) scheme of MHRD. The broad aim of this Centre is to undertake world-class research that integrates the scientific, technological, economic, policy, and socio-technical aspects of energy to deliver key tools needed to enable, enhance and accelerate the transition toward sustainable energy systems. The Centre is developing cutting-edge technologies in the energy sector for rural, urban, SMEs, and other industries of the region. The center's research activities also include solar-based energy systems, future energy technologies, fuel cells, hydrogen energy etc.

- **Technology Innovation Hub (TIH)**

  The Department of Science and Technology, Government of India has identified Data Analytics and Predictive Technologies (DAPT) as one of the domain areas of Technology Innovation Hub (TIH) under India's National Mission on Interdisciplinary Cyber Physical System (NM-ICPS). DST has identified IIT (BHU) Varanasi as one of the institutes for establishing TIH under this scheme. As a part of this development, I-DAPT Hub Foundation, IIT (BHU) a non-profit section 8 company is established. In order to meet the mandate of IDAPT Hub Foundation in terms of better societal outreach and Industry 4.0 functioning, five thrust areas 1) Telecommunications, 2) Power, 3) Defence Research and Development, 4) Road Transport and Highways, and 5) Health and Family Welfare have been identified. The activities envisioned under the I-DAPT Hub Foundation will provide impetus to smart cities mission, smart and optimized energy/power management, state-of-art defense infrastructure development, and the health and family welfare of the country. It helps in manufacturing via the invention of new products, services and the creation of skilled young human resources at all levels (technicians, researchers, scientists, and entrepreneurs) and will become a key contributor to realizing the vision of "Digital India."

- **Ideation, Innovation and Incubation Foundation (I-3F)**

  Ideation, Innovation and Incubation Foundation (I-3F), earlier known as Technology Innovation and Incubation Center (TIIC), is an umbrella organization at IIT (BHU) Varanasi for fostering an entrepreneurial ecosystem and nurturing start-ups in the East UP region. It administers various units which provide 'Start to Scale' support for entrepreneurship and facilitates research activities to convert into commercial ventures. Different units under I-3F are:

  NCL-IIT(BHU) Incubation Centre: NCL-IIT(BHU) Incubation Centre (NIIC) is a joint collaboration of the Indian Institute of Technology (Banaras Hindu University) and Northern Coalfields Limited. NCL – IIT (BHU) Incubation Centre, is a Technology Business Incubator for fostering entrepreneurship and nurturing tech start-ups of IIT(BHU) Varanasi. The business incubator provides 'Start to scale' support for technology-based entrepreneurship and facilitates the conversion of research activity.

  RKVY-RAFTAAR Agri Business Incubator (R-ABI): R-ABI is a scheme funded by the Ministry of Agriculture and Farmers' Welfare (MoA & FW) which is working in close collaboration with other incubators. This scheme aims at strengthening the infrastructure in agriculture and allied areas in order to promote agripreneurship and agri business by providing financial support and nurturing the incubation ecosystem in and around Uttar Pradesh.

CISCO thing Qbator Makerspace Program: As a part of a CSR initiative, Cisco Systems along with NASSCOM Foundation has established a "thingQbator" makerspace at IIT (BHU). This AI and IoT-based makerspace program helps to accelerate innovation and entrepreneurship among the student community of IIT (BHU) Varanasi. Students not only play with the ideas but become creative problem solvers and strengthen the start-up ecosystem of India.

E-Cell: The Entrepreneurship Cell (E-Cell) is an institute body run by the students of IIT(BHU) Varanasi helps in creating a Startup Ecosystem, building relations for the promotion of Startups and Entrepreneurship at IIT (BHU) Varanasi. E-Cell organized several business plan competitions, workshops, hackathons, and interactive sessions from high-end speakers and entrepreneurs. One flagship event, Founder's Speak is a monthly event to connect aspiring entrepreneurs with successful founders and serial entrepreneurs with great exits. Research Innovation and Entrepreneurship Unit (RIEU) is a dedicated unit under the helm of E-Cell, IIT(BHU) Varanasi that aims to promote innovation-driven research entrepreneurship in various fields of science and technology. RIEU focuses on cultivating artistic research culture on the campus by seeking industrial collaborations to build a concrete connection between the institute and the industry. CiscothingQbator under the helm of E-Cell, IIT(BHU) Varanasi is the bridge of communication between the student and the thingQbator community, making the interaction more obvious. Another big event organized under E-cell was "Fusion'21" an inter-thingQbator idea storm providing an opportunity to work on mind-boggling ideas.

Team AVERERA

The Team AVERERA of the institute is a group working on next generation automotive and energy-efficient car. Team AVERERA secured the first position at the Shell Eco-marathon Global League 2021 season among 235 teams from 50 nations. Team AVERERA also won the Virtual Technical Inspection, which was among the competitions conducted throughout the year under the hood of the Global League. Other accomplishments include success in Autonomous Programming and Virtual Off-Track awards for Vehicle Design, Engineering Simulation Practices, and Driver Safety competitions. The accomplishments advanced them to the first position in the Virtual League Table.

Unnat Bharat Abhiyan

Unnat Bharat Abhiyan (UBA) is a Ministry of Education initiative with a total sanctioned cost of Rs 3.50 crore and aimed at solving the technological problems of the common man. This project is a joint venture of all IITs and many other Institutes of National Importance. UBA is conceptualized as a movement to connect institutes of higher education with local communities to address the development challenges of rural India through appropriate technological inventions. IIT (BHU) Varanasi is also identified as one of the Regional Coordinating Institutions (RCIs) on the basis of their earlier experience and infrastructural competence. Several villages in and around Varanasi and Mirzapur were adopted and IIT(BHU) Varanasi students are actively involved in counseling and providing the necessary technical inputs (such as preservation and promotion of rural crafts, advice for sanitation and hygiene, rainwater harvesting, solar lights for the community, forestation, drinking water quality, etc.) to the villagers.

Main Library and E-resource

The IIT(BHU) Varanasi library system consists of the Main Library and five departmental libraries, which collectively support teaching, research, and extension programs of the institute. The library system, besides having an excellent print collection of over 1,42,000 volumes of books, journals, theses, reports, pamphlets, also provides access to over 15,000 electronic journals and more than 3,000 electronic books, e-standards, and databases in science, engineering, and technology. Library provides reading room facilities, access to Digital Library, web OPAC, remote access of e-resources, discussion room facility, and reference services related to research and teaching. The library has also created the Indian Research Information Network System (IRINS) database of institute researcher's profile and institutional repository. Library also supports research activities by providing the Research Support Tools (Anti-Plagiarism software, Grammarly, InSite, JCR, reference management tools, etc.). Recently the library organized an author(s) workshop by Wiley, Taylor & Francis, and Workshop cum User Awareness Program on InSite and Turnitin.

Alumni Connect, Endowment, Scholarship and Resource Generation

The institute is proud of its Alumni Community which has always come forward in times of need and volunteered for providing support and guidance. With the mission to strengthen the bond between the alumni and the students, frequent engaging sessions and formal/informal meets were organized in the form of Student Alumni Interaction Cell (SAIC) guidance sessions, and the alumni lectures series. The yearly Student-Alumni Mentorship Program, aimed at providing personalized guidance to students from the Alumni, was launched in March 2021. The program provided one-on-one mentorship to students from 250+ Alumni mentors in 8 different domains.

To increase engagement and update on our alumni community about the various developments in the institute more frequently, SAIC changed the release of the official alumni newsletter - Alma Communiqué - from bi-annual to monthly and has an overall readership of 3,000+ alumni from all across the globe. In addition, the 'IIT BHU Alumni Startup Showcase Series' was initiated to celebrate IIT (BHU) entrepreneurs, covering their life journeys. The stories of startups like Aquvio, Eye-D, ZestMoney, and iMumz, had been published.

SAIC's website acted as the single-point platform for all alumni services and updates throughout the year. IIT (BHU) Varanasi signed an MoU with Media.net Software Services (India) Pvt. Ltd. to establish 'Media.net Emerging Scholars Program', an endowment merit-cum-means scholarship for B.Tech. students at IIT (BHU) in pursuance of the Grantor's Corporate Social Responsibility initiatives. IIT (BHU), Varanasi, and IIT (BHU) Foundation, USA signed a Memorandum of Understanding (MoU) on 1st January 2021 to raise funds for the institute. The total endowment fund received from our alumni during 2021-22 was Rs 8,95,11,871/-. Some recent contributions are given in the table below:

Sl. No.	Name of Person/ Trust	Amount of Donation (Rs. in Lakhs)	Purpose
1.	Sri Venkata Raghava Annapragada	2.00	1975 Batch Donation (for welfare of Institute, Student, Staff and Faculty)
2.	Sri Sanjay Bhargava	45.00	DN BHARGAVA Endowment Fellowship/ Scholarship
3.	Sri Rakesh Aggarwal	20.60	Shri Om Prakash Aggarwal Medal and a Cash Prize and Bimla Aggarwal Medal and Cash Prize
4.	Sri Harsh Nath	30.00	ARIDAMAN and JAGDISH NATH ENDOWMENT SCHOLARSHIP
5	Late Shri Aditya Kumar Awasthi	14.00	Late Aditya Kumar Awasthi Endowment Fund

In addition to the above contributions, the institute is proud of its illustrious alumni Shri Nikesh Arora for supporting USD 2 million to the students' scholarship, Shri Jay Chaoudhary for supporting USD 9,50,000 to establish software innovation centre, Shri Naresh Jain for giving a support of USD 573000 to create School of Decision Sciences, and Shri Ramesh Srinivasan for USD 1,300,000 support to construct Students activity Centre. SAIC is dedicated to providing avenues for three-fold interaction among students, alumni, and the Institute to develop a vibrant community, creating opportunities to thrive for the benefit of the commonwealth. The Alumni Visiting Faculty (AVF) Program was continued in the online semesters with renowned alumni from different industries teaching full-credit courses as visiting faculty. The initiative saw 15 alumni faculty teach five different courses in the odd & even semester of 2021-22. The program was a success with 570+ students opting for these alumni-taught courses. Moving forward, SAIC aims to build more alumni connections and closely knit the institute's vast alumni network together. SAIC shall continue to grow at the same rate and endeavor towards the realization of its goal to bring together the student and alumni fraternity of IIT (BHU) Varanasi.

Distinguished Alumnus/Alumna Awards 2021-22

Alumni are an important part of any institute. The distinguished Alumnus/ Alumna Award is the highest award given by IIT (BHU) Varanasi to its alumni in recognition of their achievements in Profession, Industry/ Entrepreneurship, Academics, Research & Innovation and Public Life. The following table shows the details of the distinguished Alumnus/ Alumna Awards 2021-22:

Name of Alumni	Area
Shri Nikesh Arora, (EEE '89), CEO and Chairman, Palo-Alto Networks	Profession
Shri Jay Chaudhry (ECE '80) CEO, Chairman and Co-Founder, Zscaler	Industry/ Entrepreneurship
Shri Pavan Kumar Jain (CHE '76) Site President and JMD, Reliance IndustriesLtd.	
Dr. Indu Bhushan (EEE '81) Ex-CEO National Health Authority & Ayushman Bharat, Government of India	Public Life
Dr. Arun Kumar Mehta (CIV '84) Chief Secretary, Jammu & Kashmir Govt.	
Prof. Kunal Karan (CHE '92) Professor, Dept. of Chemical and Petroleum Engg., University of Calgary	Academics
Prof. Banmali S Rawat (EEE '68 & ECE '70) Professor, Dept. of Electrical and Biomedical Engg., University of Nevada	
Dr. Anand S Murthy (MET '87) Intel Fellow and Director, Intel Inc	Research & Innovation
Shri Kailash Kailash (ECE '80) Co-Founder, Zscaler	

Best Teachers Award

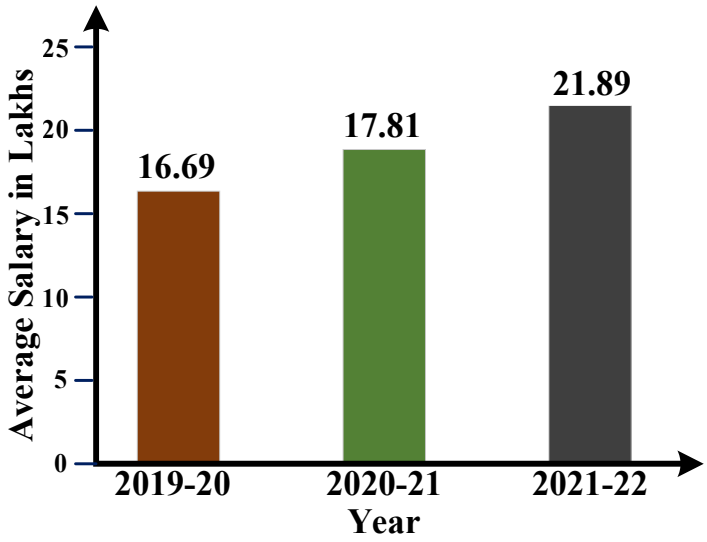
In order to recognize the teaching, research and outreach services performed by the faculty members, the institute has given the best teachers/educator for academic session 2021-22 award as given in the following table.

Sl. No.	Category	Name & Designation	Remarks
1.	I : UG 1st Year	Dr. Arnab Sarkar, Associate Professor Department of Mechanical Engineering, IIT(BHU)	
2.	II : PG Classes	Dr. Sanjeev Kumar Mahto, Associate Professor School of Biomedical Engineering, IIT(BHU)	
3.	III : UG Sciences & Humanities	Dr. Abhishek Kumar Srivastava, Associate Professor Department of Physics, IIT(BHU)	Jointly
4.		Dr. Rakesh Kumar Singh, Associate Professor Department of Physics, IIT(BHU)	
5.	IV : UG Engineering	Prof. Vikash Kumar Dubey, School of Biochemical Engineering, IIT(BHU)	
6.	Shyama Varshney BENCO-64 Best Educator Award	Dr. Rajeev Kumar Singh, Associate Professor Department of Electrical Engineering	

Institute Works Department (IWD) & Infrastructure Development

Infrastructure development is the need of the hour. Repair and maintenance work of many units such as hostels, guest house, faculty apartments/ quarters, academic buildings, roadside development, maintenance of the pavements/ bituminous roads are duly undertaken by IWD. In addition, at present, following major construction projects are ongoing in the institute.

1. Construction of Dhanrajgiri Hostel-II (S+7) with Dining block (G+1) behind Dhanrajgiri Hostel at IIT(BHU) Varanasi.
2. Construction of student wing (G+7) of Dhanrajgiri Hostel at IIT (BHU) Varanasi.
3. Construction of Morvi Hostel-II (S+10) with 3 floors dining block behind Morvi Hostel at IIT (BHU) Varanasi.
4. Construction of Student Activity Centre with Indoor Sports Facilities (G+2) in Rajputana Ground at IIT (BHU) Varanasi.
5. Construction of Apartments (S+8) for Faculty and Officers behind Vivekanand Hostel at IIT (BHU) Varanasi.
6. Construction of guest house extension (G+4) besides the GTAC, IIT (BHU) Varanasi.
7. Construction of lecture theatre (G+2) with 12 big lecture halls.



Training and Placement

The Training and Placement Cell of IIT (BHU) Varanasi facilitates the process of placement of students passing out of the institute. During the academic session 2021-22, 303 companies visited the campus for holding campus interviews and made a total of 1341 offers. The average pay package has increased by ~ 22.90% compared to that in the last year. The industries visiting were of varied nature: Core Engineering, IT & IT-enabled Services, Manufacturing, Consultancy, Finance, Management, R & D, etc. The institute boasts of some of the best placement packages among the IITs. The Cell also collaborates with leading organizations and institutes in setting up internship and training programs for our students. The Cell has managed to arrange 534 paid internships through campus selection during 2021-22, and this saw an increase of 24.77% compared to 428 selections in 2020-21. Improvement in placement during the last three years is shown in the figure below:

Student Activities and Achievements

The institute nurtures technical, social, cultural, and sporting activities pursued by the Students' Gymkhana through different councils, Students' Parliament, and other student groups. Besides games and sports, the artistic and creative talents of students are encouraged through various activities like dramatics, debates, music, visual arts, etc., and clubs like Radio, Audio, Photography, Automobile, Aero-Modeling, Cine and Computer Club. Students Gymkhana successfully organized its annual techno-management festival Technex, cultural festival Kashiyatra. Apart from these, students of IIT (BHU) participated in various IIT meets and brought laurels to the institute.

(i) Cultural Activities

Even in this online era, a total of 17 Events and 15 Workshops were conducted during the session this year by the students of the institute. These included 3 major council events: Aagman 2021 (fresher's event), Cultural Week'21, and the IIT(BHU) Model United Nations 2021. Many other events like Kalakriti - Online Fine Arts Competition (Cultural Heritage of Kashi), Vayam - Online Poetry Competition (Rashtriya Ekta Diwas), and Utsav-Online Creativity Competition (Connecting Students on Diwali) were organized on club specific levels, to provide students a platform to bring the best out of their creativity and let them explore their potential. The Cultural Week of IIT (BHU) Varanasi witnessed an overall 1500+ participation and took forward the legacy of the institute with huge participation, coming not only from the IIT(BHU) students but also the International students of foreign countries like Malaysia, Australia, the Philippines, South Korea, Japan, New Zealand, and other regions of the world.

The IIT(BHU) MUN emerged as the largest North India MUN conference with 217 Portfolios as we successfully collaborated with the United Nations Organisations - UNIC and UNESCO alongside the Indian National Commission for Cooperation with United Nations (INCCU) for the 2021 edition.

A series of highly interactive dramatics, literary and fine arts workshops were conducted by the popular Indian artists under the banner of the Cultural Council. These included the likes of Bollywood Fame Mr. Divyendu

Sharma, National Award Winning Writer Mr. Vikram Chandra, Regional Actor Mr. Karn Mehta, National Award Winning Lyricist Mr. Varun Grover and the Renowned Sketch Artists like Mr. Sadashiv Sawant and Ms. Mona Biswarupa.

Our students further brought laurels to the institute as the IIT(BHU) Quiz Club won the Ex-Quizite National Quiz hosted by IIT Bhilai, 1st position in the SBSC India Quiz, 3rd position in the MNNIT Allahabad's Avishkar National Quiz, and 3rd position also in the GMC All India Quiz. The IIT(BHU) Fine Arts Club won gold medals at the Cultural Festivals of IIT Gandhinagar, IIT Bhilai, and Delhi University alongside winning the Runner-up trophy in the Inter Institute Art Contest hosted by IIT Bombay. The IIT(BHU) Literary Club members Mr. Akshay Akash and Mr. Vikhayat Dwivedi emerged as the international breaking adjudicators and won honorable mentions in ten-plus national and international events including Melbourne Pre-Australs 2020, UADC Asian Championship 2020, Uhuru Worlds 2021, and Asia Pacific WSDC 2021. The Literary Club students also had a remarkable performance at the All-India Heartfulness Essay Event 2021, as one of our students Ms. Nisitha Vallamdasu won the overall bronze medal while our five other students received the Honorable Mentions Awards from the United Nations Information Centre, of India and Bhutan. The IIT(BHU) Dance Club members Mr. Siddhant Jaiswal and Mr. Vivek Parihar won the National Dance Competitions at CultRang'21 hosted by IIT Goa and Zest'21 hosted by IIIT Hyderabad.

(ii) Games and Sports Activities

Games and Sports Council, IIT (BHU) had taken part in a plethora of sports events and competitions even during this Pandemic era through online mode. More than 18 Sports events including Sports Workshops and Sports Motivational talks were conducted during the year. Starting from the Girls Weekend which was conducted during 20th to 21st March, 2021 to promote sporting culture among the girls consisting of four events viz. 60sec. challenges, 3 km Run/Walk, and IIT(BHU) Women's Chess Championship and guest talks were delivered by Ms. Padmini Rout (WGM & IM) and Ms. Nisha Mohota (WGM & IM).

The yearlong intra-college IIT(BHU) Chess Grand Prix was organized where 12 rounds were held with participation from 115 students. The Council also organized a series of Basic Fitness Challenges for new entrants of 2020 and existing students as well. Sport-specific interactive sessions were conducted for students who are keen on learning the basics of sports or any queries regarding sports in general. The council was also a part of Win India 2.0, a sporting campaign spearheaded by the IITs.

(iii) Activities by Science and Technology Council

The students under the Science and Technology council took the various new initiatives in the institute. Some of the activities undertaken by the science and technology council are *Consulting Crew and BASH,* a series of sessions on solving business cases. *InnoSights and Autofy* which were biweekly infotainment series run across social media handles of the clubs for sharing innovative breakthroughs and upcoming technologies. The students also conducted regular online workshops and training programs like the GitHub page for Robotics Research Group (RoboReG) and open-sourced the projects done in RoboReG. A YouTube channel was started by the club of programmers on the programming skills of the students. The students also organized an event by the name iMaze where the participants applied the concepts learned through theoretical workshops for solving real-life problems. Other events were also conducted through online mode on star gazing, PM School Case Study Challenge, Codeforce, and Alumni mentorship program. Our students won in several inter-institute competitions like Asia level Consulting Competition, IIM Ahmedabad Red Bricks Summit, Decipher - Product Development Challenge conducted by Testbook, qualified for the National Finale of Flipkart GRID 2.0 Robotics Challenge. 23 students got selected in Google Summer of Code 2021. One student from the institute got selected in Microsoft Reinforcement Learning Open Source Fest and two students got accepted as mentees in LFX Mentorship. A team of students from the Aeromodelling Club have finished as runners-up in the AL-VTOLA event at Techfest IIT Bombay.

Technex, the annual Techno-Management festival of IIT BHU was also organized successfully during March 11-13 2022. This time the fest was organized for the first time in Hybrid mode, where 22 events and 14 workshops across domains like Cyber Security, AI/ML, Astronomy, Automobiles, Robotics etc were organized completely in online mode, along with guest lectures from eminent personalities such as Dr. Duvvuri Subbarao, Ms. Namita Thapar, Mr. David Brin, Mr. John Warhurst. The festival was also graced with offline exhibitions of various technical projects and band and weapon displays by the Indian Army.

(iv) Activities by the Film & Media Council

The council conducted surveys on popular mainstream topics like National Education Policy and directed several Outreach series. It started a special series for the council's official social media handle called Product Photography that featured pictures of simple products in the most unique way. Another contemporary series called Virtuoso was revealed where the life stories and magnum opus of the greatest out-of-the-box creators will be appreciated. In addition to these initiatives, the council members also won prestigious inter-college digital arts events.

(v) Social Service

The institute believes that the inherent humaneness and the spirit of volunteerism already existent in every individual needs to be nurtured and further developed, thereby blooming out with the full potential to benefit society as a whole. Nourishing these values and skills will foster an all-pervasive sense of social service amongst the student fraternity, catering to our society's needs and challenges. The Social Service Council, IIT (BHU), students use to be in regular touch with people from nearby *basti*, enquire about their well-being. They lend their support to make sure ration and daily requirements to them.

Concluding Remarks:

My concluding remarks, in fact, point towards a new beginning for IIT (BHU) Varanasi which is continuously striving to make this world a better place through sustainable development with humane technological intervention. The new IIT (BHU) Varanasi emerges from the old, building on its earlier strengths and transforming itself to meet the challenges of the future.

The major highlights of this year's (2020-21) achievements of IIT (BHU) Varanasi are:

- Total number of publications was 1459 in 2021-22 in journals of high repute. The number of citations has increased to 42971 compared to 28470 in the previous year.
- The institute has maintained its high placement record even during the pandemic time. The average pay package has increased by ~ 22.90% and an increase of 24.77% was witnessed in the internship offer during the year 2021-22 compared to that of the previous year.
- The total amount of the fund generated by the institute through sponsored Projects and Schemes was 31.55 crores during 2021-22. The institute is actively participating in several national research initiatives including ISRO Regional Academic Centre for Space, Collaborative Research Centre of the Indian Pharmacopoeia Commission, Centre of Excellence in Refractories, DST foundered Technology Innovation Hub (TIH) on interdisciplinary data analytics and predictive technology (IDAPT), Center of Energy and Resource Development (CERD), Knowledge partner of UP Defence Corridor, RKVY-RAFTAAR Agri Business Incubator and several more with total budget of about 271 Crores.
- During the current financial year 2021-22, total financial contributions committed from Alumni including Endowment Scholarships/Awards/Medals and other general-purpose donations is about Rs. 41.4 Crores out of which Rs. 8.95 crore has already been received in the financial year 2021-22. Some key contributors are Shri Jay Chaoudhary, Shri Nikesh Arora, Shri Naresh Jain and Shri Ramesh Srinivasan.

IIT (BHU) Varanasi has been and will continue to be a major contributor to the epochal transformation of our country and the world.

*******JAI HIND, JAI BHARAT ********

2. Apex Committees

Members of Board of Governors (BoG) (2021-22)

1. **Chairman**
   Padma Shri Dr. Kota Harinarayana

2. **Vice- Chairman (Nominated by Executive Council, BHU)**
   Prof. Anand Mohan — From 01.04.2021 to 07.06.2021
   Member, Executive Council, BHU

3. Director (ex-officio) Member
   Prof. Pramod Kumar Jain
   Director, IIT(BHU), Varanasi- (ex-officio)
   IIT(BHU), Varanasi-221005

4. a) **Executive Council, BHU Nominee** — From 01.04.2021 to 07.06.2021
   Prof. Adya Prasad Pandey

   b) **Executive Council, BHU Nominee** — From 01.04.2021 to 07.06.2021
   Prof. Ashim Kumar Mukherjee

5. **Council Nominee**

a) Prof. Praveen Kumar
   Transportation Engineering Group
   Department of Civil Engineering, Indian Institute of Technology Roorkee,
   Roorkee-247667 (Uttarakhand)

b) **Council Nominee**
   Additional Secretary/Joint Secretary (TE), Ministry of Education, ex-officio,
   Shastri Bhawan, New Delhi-110 001

6. **State Government Nominee (Uttar Pradesh Government Nominee)**
   Prof. Vinay Kumar Pathak, Vice-Chancellor
   Chhatrapati Shahu Ji Maharaj University
   Kanpur-208024 (U.P.)

7. **IIT (BHU) Senate Nominee**
   Prof. Rajnesh Tyagi — From 01.04.2021 to 31.12.2021
   Department of Mechanical Engineering

8. **IIT (BHU) Senate Nominee**
   Prof. S.B. Dwivedi — From 01.04.2021 to 31.12.2021
   Department of Civil Engineering

9. **IIT (BHU) Senate Nominee**
   Prof. Sunil Mohan — From 01.01.2022 to onwards
   Department of Metallurgical Engineering, IIT (BHU)

10. **IIT (BHU) Senate Nominee**
    Prof. Vikash Kumar Dubey — From 01.01.2022 to onwards
    School of Bio-Chemical Engineering, IIT (BHU)

11. **Shri Rajan Srivastava**
    Registrar (I/C), Indian Institute of Technology (BHU)
    Varanasi – 221 005

Members of Senate (2019-20)

A. In terms of provision contained in Section 14(d) of the Institutes of Technology Act, 1961 (as amended from time to time), the Chairman, Board of Governors, IIT (BHU), vide his order dated 24.3.2021, has nominated the following members to the Senate of the Institute for a period of two years w.e.f. 01.04.2021:

1.General Manager, Bharat Heavy Electrical Ltd., Heavy Equipment Repair Plant, Tarna, Shivpur, Varanasi-221003 (included vide mail dated 19.05.2020)

2. Mr. Manish Bhardwaj, DRDO Coordinator, DRDO Transit Facility, 3/240, Vishal Khand, Gomti Nagar, Lucknow-226010 (included vide mail dated 19.05.2020)

3. Prof. Sunil Jha, Dept. of Mechanical Engineering, IIT Delhi (suniljha@gmail.com, suniljha@mech.iitd.ac.in)

4. Prof. Sudip Kumar Ghosh, Department of Biotechnology, IIT Khargapur, (sudip@bt.iitkgp.ac.in)

5. Prof. T. Prasad, NITIE Mumbai (nitieprasad@gmail.ocm, tprasad@nitie.ac.in)

B. In terms of provision contained in Statute 5(1)(c), the Director and the Chairman, Senate has nominated the following faculty members to the Senate for a period of one year w.e.f. 01.04.2021 :

6. Dr. Surya Deo Yadav, Dept. of Metallurgical Engineering
7. Dr. Rajesh Rai, Dept. of Mining Engineering
8. Dr. Shivam Verma, Dept. of Electronics Engineering
9. Dr. Chinmaya K.A., Dept. of Electrical Engineering
10. Dr. Shishir Gaur, Dept. of Civil Engineering
11. Dr. Saurabh Pratap, Dept. of Mechanical Engineering
12. Dr. Prasenjit Chanak, Dept. of Computer Science & Engineering
13. Dr. Ashutosh Kumar Dubey, Dept. of Ceramic Engineering
14. Dr. Gyan Prakash Modi, Dept. of Pharmaceutical Engineering & Tech.
15. Dr. (Mrs.) Bhawna Verma, Dept. of Chemical Engineering & Tech.
16. Dr. Pranjal Chandra, School of Biochemical Engineering
17. Dr. Sanjeev Kumar Mahto, School of Biomedical Engineering
18. Dr. Nikhil Kumar, School of Materials Science & Technology
19. Dr. Lavanya Selvaganesh, Dept. of Mathematical Sciences
20. Dr. Anita Mohan, Dept. of Physics
21. Dr. Jeykumar Kandasamy, Dept. of Chemistry
22. Dr. Sukhada, Dept. of Humanistic Studies
23. Dr. Aaditya Pratap Sanyal, Dept. of Architecture, Planning & Design

C. Professor and Heads/Coordinators

Department of Ceramic Engineering

24. Prof. Vinay Kumar Singh

Department of Chemical Engineering And Technology

25. Prof. Pradeep Kumar Mishra (On Deputation w.e.f. 14.12.2020)
26. Prof. Pradeep Ahuja
27. Prof. Manoj Kumar Mondal
28. Prof. Ram Saran Singh
29. Prof. (Mrs.) Vijaya L. Yadava
30. Prof. Satya Vir Singh
31. Prof. Hiralal Pramanik

Department of Civil Engineering

32. Prof. Goutam Banerjee
33. Prof. Devendra Mohan
34. Prof. Prabhat Kumar Singh
35. Prof. Prabhat Kumar Singh Dixit
36. Prof. Sasankasekhar Mandal
37. Prof. Rajesh Kumar
38. Prof. Shyam Bihari Dwivedi
39. Prof. K.K. Pathak
40. Prof. Arun Prasad

Department of Computer Science And Engineering

41. Prof. A.K. Tripathi
42. Prof. K.K. Shukla
43. Prof. Rajeev Srivastava

44. Prof. S.K. Singh

Department of Electrical Engineering

45. Prof. Shiva Pujan Singh
46. Prof. R.K. Pandey
47. Prof. Rakesh Kumar Srivastava
48. Prof. Rakesh Kumar Mishra
49. Prof. Ranjeet Mahanty
50.Prof. Devender Singh
51. Prof. Mitresh Kumar Verma
52. Prof. Ram Khelawan Saket

Department of Electronics Engineering

53. Prof. P. Chakrabarti (On Deputation w.e.f. 10.05.2018)
54. Prof. P.K. Jain (On Deputation w.e.f. 21.11.2017)
55. Prof. V.N. Mishra
56. Prof. Satyabrat Jit
57. Prof. M.K. Meshram

Department of Mechanical Engineering

58. Prof. A.K. Agrawal
59. Prof. Santosh Kumar
60. Prof. K.S. Tripathi
61. Prof. A.P. Harsha
62. Prof. Sanjay Kumar Sinha
63. Prof. Sandeep Kumar
64. Prof. Rajesh Kumar
65. Prof. Prashant Shukla
66. Prof. Pradumna Ghosh
67. Prof. Shailendra K. Shukla
68. Prof. Rajnesh Tyagi
69. Prof. Saroja Kanta Panda
70. Prof. Prabhash Bhardwaj
71. Prof. R.K. Gautam

Department of Metallurgical Engineering

72. Prof. R.K. Mandal
73. Prof. N.K. Mukhopadhyay
74. Prof. Sunil Mohan
75. Prof. (Mrs.) N.C. Shanti Srinivas
76. Prof. B. Nageshwar Sarma
77. Prof. Kamlesh Kumar Singh

Department of Mining Engineering

78. Prof. B. K. Shrivastava
79. Prof. Netai Chandra Karmakar
80. Prof. Aarif Jamal
81. Prof. Piyush Rai
82. Prof. Sanjay Kumar Sharma
83. Prof. Suprakash Gupta

Department of Pharmaceutical Engg. & Technology

84. Prof. B. Mishra
85. Prof. S.K.Singh
86. Prof. Sanjay Singh (On Deputation w.e.f. 23.02.2019)

87. Prof. S.K. Shrivastava
88. Prof. (Mrs.) S. Hemalatha
89. Prof. Sairam Krishnamurthy

Department of Chemistry

90. Prof. Prem Chandra Pandey
91. Prof. Syed Hadi Hasan
92. Prof. (Mrs.) Vandana Srivastava
93. Prof. Yogesh Chandra Sharma
94. Prof. D. Tiwary
95. Prof. K.D. Mandal

Department of Mathematical Sciences

96. Prof. Tanmoy Som
97. Prof. Lal Pratap Singh
98. Prof. Sanjay Kr. Pandey
99. Prof. (Mrs.) S. Mukhopadhyay
100. Prof. S.K. Upadhyay
101. Prof. Subir Das
102. Prof. Murali Krishna Vemuri

Department of Humanistic Studies

103. Prof. Prasant Kumar Panda
104. Dr. Ajit Kumar Mishra (Head)

Department of Physics

105. Prof. D. Giri
106. Prof. Prabhakar Singh
107. Prof. Sandeep Chatterjee
108. Prof. Rajendra Prasad

School of Bio-Chemical Engineering

109. Prof. Pradeep Srivastava (On Deputation w.e.f. 18.02.2020)
110. Prof. Vikash Kumar Dubey

School of Bio-Medical Engineering

111. Prof. Neeraj Sharma
112. Dr. Sanjeev Kumar Mahto (Coordinator)

School of Materials Science & Technology

113. Prof. Rajiv Prakash
114. Prof. Pralay Maiti
115. Dr. Chandana Rath (Coordinator)

Department of Architecture, Planning & Design

116. Prof. Rajesh Kumar (Head)

Members of Finance Committee (2021-22)

Chairman (ex-officio)

a) Dr. Kota Harinarayana,

Chairman, BoG, IIT(BHU)

Member (ex-officio)

a) Prof. Pramod Kumar Jain,
Director, IIT (BHU), Varanasi – 221 005

Members nominated by the Central Government, Members (ex-officio)

a) Additional Secretary/Joint Secretary (TE), MoE, ex-officio
Ministry of Education, Shastri Bhawan, New Delhi-110 001

b) Joint Secretary & Financial Advisor to the Government of India
Integrated Finance Divison, Department of Higher Education,
Ministry of Education, New Delhi

Board Nominees (Members)

a) Prof. Rajiv Prakash
School of Materials Science & Technology, IIT(BHU), Varanasi-221 005 — From 10.09.2021 to 31.03.2022

b) Prof. Prabhakar Singh
Department of Physics, IIT(BHU) Varanasi-221 005 — From 10.09.2021 to 31.03.2022

c) Prof. S. B. Dwivedi,
Department of Civil Engineering, IIT(BHU), Varanasi-221 005 — From 01.04.2022 to onwards

d) Prof. Rajnesh Tyagi
Department of Mechanical Engineering, IIT (BHU), Varanasi-221 005 — From 01.04.2022 to onwards

Registrar (ex-officio) Secretary

a) Shri Rajan Srivastava
Registrar (I/C), Registrar,
Indian Institute of Technology (BHU),
Varanasi-221 005

Members of Building & Works Committee (B & WC) (2020-21)

Prof. Pramod Kumar Jain Director (ex-officio), IIT (BHU), Varanasi – 221 005	Chairman (ex-officio)
Prof. A.K. Jain Head, Dept. of Civil Engg., IIT Delhi, New Delhi- 110 016.	Member
Prof. S.Y. Kulkarni Ex-Professor & Head, Dept. of Architecture & Planning, IIT-Roorkee 103 Palm Green Apartments, Milap Nagar,Delhi Road, Roorkee, 247 667	Member

Shri Shyam Mohan Garg General Manager (Mech.) UP State Bridge Corporation Ltd., Setu Bhawan, 16 MM Malaviya Marg, Lucknow – 226 001.	Member
Shri Vijay Pal Superintending Engineer Urban Electric Distribution Circle Meerut Pashchimanchal Vidyut Vitaran Nigam Limited, Rangoli Substation, Shastri Nagar Meerut 250004	Member
Prof. Shyam Bihari Dwivedi Department of Civil Engg., IIT(BHU)	Member
Kamal Nain Rai Former Chief Executive (CW&E) and Advisor (Special Projects), DRDO, Ministry of Defence	Member
Shri Rajan Srivastava Registrar (I/C), Indian Institute of Technology (BHU), Varanasi-221 005	(ex-officio) Secretary

List of Conveners of Under Graduate Committees (DUGC) and Post Graduate Committees (DPGC) of the Departments/Schools for the Session 2021-2022 (w.e.f. 01.09.2021)

Department/School	DUGC Conveners	DPGC Conveners
Bio-Chemical Engineering	Dr. Abhishek Suresh Dhoble	Dr. Sanjay Kumar
Bio-Medical Engg.	Dr. S. K. Mahto	Dr. Pradeep Paik
Ceramic Engineering	Dr. Ashutosh Kumar Dubey	Dr. M. R. Majhi
Chemical Engineering & Technology	Dr. R. K. Upadhyay	Dr. J. P. Chakarborty
Chemistry	Dr. Manisha Malviya	Dr. Jeyakumar Kandasamy
Civil Engineering	Dr. P. R. Maiti	Dr. Anurag Ohri
Computer Science and Engineering	Dr. Mayank Swarnkar	Dr. Ravi Shankar Singh
Electrical Engineering	Dr. S. K. Singh	Dr. Kalpana Chaudhary
Electronics Engineering	Dr. M. K. Meshram	Dr. N. S. Rajput
Humanistic Studies	Dr. Sanjukta Ghosh	Dr. Nirmalya Guha
Materials Science & Technology	Dr. Sanjay Singh	Dr. Nikhil Kumar
Mathematical Sciences	Dr. Debdas Ghosh	Dr. V. K. Singh
Mechanical Engineering	Prof. P. Ghosh	Dr. U. S. Rao
Metallurgical Engineering	Dr. B. N. Mukherjee	Dr. Randhir Singh
Mining Engineering	Dr. Nawal Kishore	Dr. Amarendra Kumar
Pharmaceutical Engineering and Technology	Dr. (Mrs.) Ruchi Chawla	Dr. M. S. Muthu
Physics	Dr. B. B. Karak	Dr.(Mrs.) Shail Upadhyay
Architecture, Planning and Design	Dr. Aditya Pratap Sanyal	No PG Course

3. Faculty Administration

2.1 Faculty Position as on 31.03.2022

Faculty Members	324
Visiting Faculty/Institute Professor/Emeritus Professor	08 + 00 + 00 = 08

2.2 Faculty Members appointed during 2021-22

Professors	00
Associate Professors	07
Assistant Professors	28
Visiting Faculty/Institute Professor	05 + 00 = 05
Contractual Faculty	Nil

2.3 List of Faculty Members appointed during 1st April 2021-31stMarch 2022

Sl. No.	ID No.	Name of Faculty/Staff	Designation	Department/Section	Date of Joining
1	50269	Dr. Rabi Narayan Mohanty	Assistant Professor	Architecture, Planning & Design	01.04.2021
2	50270	Dr. Lakshay	Assistant Professor	Mechanical Engineering	08.04.2021
3	50272	Dr. Poonam Sundriyal	Assistant Professor	Mechanical Engineering	12.04.2021
4	50271	Dr. Srihari Dodla	Assistant Professor	Mechanical Engineering	31.05.2021
5	50274	Dr. R. Santhosh	Assistant Professor	Mechanical Engineering	18.06.2021
6	50273	Dr. Udita Uday Ghosh	Assistant Professor	Chemical Engineering & Technology	23.06.2021
7	50275	Dr. Deepesh Kumar	Assistant Professor	Bio-Medical Engineering	12.07.2021
8	50276	Dr. Ayan Haldar	Assistant Professor	Civil Engineering	02.08.2021
9	50278	Dr. Mahendra Kumar Pal	Assistant Professor	Civil Engineering	02.08.2021(AN)
10	50277	Dr. Sumit Kumar Singh	Assistant Professor	Bio-Chemical Engineering	05.08.2021
11	50279	Dr. Agnivesh Pani	Assistant Professor	Civil Engineering	05.08.2021
12	50280	Dr. Sheela Verma	Assistant Professor	Mathematical Sciences	19.08.2021(AN)
13	50281	Dr. Divya Goel	Assistant Professor	Mathematical Sciences	25.08.2021
14	50282	Dr. Sree Harsha Nandam	Assistant Professor	Metallurgical Engineering	27.09.2021
15	50283	Dr. Kshitij Kumar Yadav	Assistant Professor	Civil Engineering	12.10.2021(AN)
16	50285	Dr. Harsimran Kaur	Assistant Professor	Architecture, Planning & Design	18.10.2021
17	50286	Dr. Pawan Sharma	Assistant Professor	Mechanical Engineering	09.11.2021(AN)
18	50287	Dr. Om Jee Pandey	Assistant Professor	Electronics Engineering	26.11.2021
19	50288	Dr. Atul Kumar	Assistant Professor	Electronics Engineering	01.12.2021
20	50290	Dr. Sonam Jain	Assistant Professor	Electronics Engineering	13.01.2022
21	50291	Dr. Deepak K	Assistant Professor	Metallurgical Engineering	17.01.2022
22	50292	Dr. Lakhindra Marandi	Assistant Professor	Metallurgical Engineering	24.01.2022
23	50293	Dr. Naveen Yalla	Assistant Professor	Electrical Engineering	18.02.2022
24	50295	Dr. Praveen Sathiyamoorthy	Assistant Professor	Metallurgical Engineering	09.03.2022

Sl. No.	ID No.	Name of Faculty/Staff	Designation	Department/Section	Date of Joining
25	50296	Dr. Jairam Meena	Assistant Professor	Pharmaceutical Engineering & Technology	09.03.2022
26	50297	Dr. Vishwajit Anand	Assistant Professor	Civil Engineering	24.03.2022
27	50300	Dr. Kundan Kumar	Assistant Professor	Ceramic Engineering	24.03.2022
28	50298	Dr. Nitai Chandra Maji	Assistant Professor	Chemical Engineering & Technology	25.03.2022

2.4 List of internal faculty/staff members who joined during the period from 1st April 2021-31stMarch 2022

Sl. No.	ID No.	Name of Faculty/Staff	Designation	Department / Section	Date of Joining with (FN/AN)
1	19780	Dr. Pardip Kumar Roy	Associate Professor	Ceramic Engineering	19.05.2021
2	50218	Dr. Ashok Kumar Mondal	Associate Professor	Metallurgical Engineering	19.05.2021
3	19842	Dr. Sanjeev kumar Mahto	Associate Professor	Bio-Medical Engineering	18.06.2021(AN)
4	50021	Dr. Avanish Singh Parmar	Associate Professor	Physics	19.08.2021
5	50027	Dr. Manoj Kumar	Associate Professor	Chemical Engineering & Technology	20.01.2022
6	50037	Dr. Ashutosh Kumar Dubey	Associate Professor	Ceramic Engineering	25.01.2022(AN)
7	50052	Dr. Sukomal Pal	Associate Professor	Computer Science & Engineering	29.03.2022(AN)

2.5 Faculty/staff members who resigned/were relieved

Sl. No.	ID No.	Name of Faculty/Staff	Designation	Department/Section	Date of Relieve (with FN/AN)
1	50272	Dr. Poonam Sundriyal	Assistant Professor	Mechanical Engineering	29.07.2021(AN)
2	50254	Dr. Sukarn Agarwal	Assistant Professor	Computer Science & Engineering	22.10.2021(AN)
3	50247	Dr. Sushant Mittal	Assistant Professor	Electronics Engineering	15.11.2021 (AN)
4	50268	Dr. Maria Thomas	Assistant Professor	Electrical Engineering	22.02.2022(AN)

2.6 Faculty/staff members who retired between 1st April 2021-31stMarch 2022

Sl. No.	ID No.	Name of Faculty/Staff/ Officer	Designation	Department	Date of Birth	Date of Retirement (with FN/AN)
1	13662	Dr. Rekha Srivasatva	Professor	Mathematical Sciences	13.04.1956	30.04.2021
2	13741	Dr. A S K Sinha	Professor	Chemical Engg. & Tech.	16.06.1956	30.06.2021
3	13759	Dr. Veerendra Kumar	Professor	Civil Engineering	01.01.1957	31.12.2021
4	50143	Dr. Prasun Kumar Roy	Professor	Bio-Medical Engineering	13.02.1957	28.02.2022

2.7 Faculty/staff members who expired while in service

Sl. No.	ID No.	Name of Faculty/Staff/ Officer	Designation	Department	Date of Birth	Date of Expiry (with FN/AN)
1	50066	Dr. Ashish Kumar Singh	Assistant Professor	Bio-Chemical Engineering	17.07.1978	27.04.2021
2	18329	Dr. Sanjay Kumar Gupta	Associate Professor	Civil Engineering	26.05.1970	18.05.2021
3	18242	Dr. Indrajit Chakraborty	Professor	Metallurgical Engineering	27.10.1959	14.06.2021

2.8 Faculty members/officers/staff members on long leave (On Deputation)

Sl. No.	Name	Designation	Department	From	To	Details	Remarks
1	Dr. P K Jain	Professor	Electronics Engineering	21.11.2017 (AN)	20.11.2022	On Deputation for 5 years	Date of Retirement: 31.07.2023
2	Dr. P. Chakrabarti	Professor	Electronics Engineering	09.05.2018 (AN)	09.05.2023	On Deputation of 5 years	Date of Retirement: 31.01.2023
3	Dr. Sanjay Singh	Professor	Pharmaceutical Engg. & Tech.	23.02.2019 (AN)	23.02.2024	On Deputation for 5 years	
4	Dr. A.S.K. Sinha	Professor	Chemical Engg. & Tech.	09.07.2019 (AN)	30.06.2021	On Deputation	Date of Retirement: 30.06.2021
5	Dr. Pradeep Srivastava	Professor	Bio-Chemical Engineering	18.02.2020 (AN)	18.02.2025	On Deputation for 5 years	
6	Dr. P.K. Mishra	Professor	Chemical Engg. & Tech.	14.01.2022 (AN)	14.01.2025	On Deputation for 3 years	
7	Dr. Nikhil Saboo	Assistant Professor	Civil Engineering	30.06.2021(AN)	30.06.2022	On Lien for 1 year	
8	Dr. Laltu Chandra	Associate Professor	Mechanical Engineering	04.03.2022(AN)	04.03.2023	On Lien for 1 year	

Faculty/staff members on extraordinary leave

Sl. No.	Name	Designation	Department	From	To	Details	Remarks
1	Dr.Ruchir Gupta	Associate Professor	Computer Science & Engineering	17.11.2020 (AN)	17.11.2023	To join on the post of Professor at JNU, New Delhi	

Faculty members on sabbatical leave

Sl. No.	Name	Designation	Department	From	To	Remarks
1	Dr. Anil Kumar Singh	Associate Professor	Computer Science & Engineering	21.10.2021	20.10.2022	

4. Non Faculty Administration

Staff Position (as on 31st March 2022): Non-faculty members

Staff members in Position

Group A Staff	23
Scientific Officers	07
Technical Staff	218
Administrative Staff	123

Staff Members appointed during 2021-22

Administrative Staff	03
Contractual Staff	00

List of Staff Members appointed during 1st April 2021-31st March 2022

Sl. No.	ID No.	Name of Staff	Designation	Department/Section	Date of Joining
1.	50289	Ms. Anamika Kahsyap	Assistant Registrar	Faculty Affairs	24.01.2022
2.	50294	Ms. Pragya Juneja	Assistant Registrar	R&D and Audit	28.02.2022
3.	50284	Ms. Mischel	Junior Assistant	Annual Accounts & Balance Sheet	02.11.2021

Staff members who retired between 1st April 2020-31st March 2022

Sl. No.	Name	Employee ID	Designation	Department/Section/ Unit	Date of Birth	Date of Superannuation
1	Shri Bhagmal Singh	16655	Senior Technical Superintendent (GR.-II)	Ceramic Engineering	18.04.1961	30.04.2021
2	Shri Pronab Kumar Bhaduri	16739	Senior Technician	Ceramic Engineering	08.05.1961	31.05.2021
3	Shri Meharman Thapa	14126	Technical Superintendent	Chemical Engineering	03.06.1961	30.06.2021
4	Shri Kanhaiya Lal	14080	Senior Technical Superintendent	Mining Engineering	05.07.1961	31.07.2021
5	Shri Chand Lal	14140	Technical Superintendent	Chemical Engineering	12.08.1961	31.08.2021
6	Shri Ram Krishna Sharma	13630	Junior Technical Superintendent	Main Workshop	03.08.1961	31.08.2021
7	Sri Vinay Kumar Srivastava	18907	Senior Technician	Electronics Engineering	06.09.1961	30.09.2021
8	Shri Kapil Dev Rai	14179	Technical Superintendent	Pharmaceutical Engg. & Tech.	01.01.1962	31.12.2021
9	Shri Ram Chandra Pathak	18902	Senior Technician	TLC	01.01.1962	31.12.2021
10	Shri Balwant Singh	19273	Senior Technician	Metallurgical Engineering	15.01.1962	31.01.2022

Staff members who expired while in service

Sl. No.	ID No.	Name of Staff	Designation	Department/Section	Date of Joining	Date of Expiry (with FN/AN)
1.	50159	Sri Lokesh Singh	Junior Assistant	C.V. Raman Hostel	18.07.2016	30.01.2022

5. Academic Programmes and Award of Degrees

The Institute offeres Ph.D. programmes in all 17 departments (Department of Humanistic Studies established in 2015-16), M.Tech. programme in 13 streams/specializations, M.Pharm. programme in one stream/specialization (M.Tech. programme started in Decision Sciences and Engineering instead of Industrial Management from the session 2020-21), B.Tech. programmes in 10 engineering departments, Dual Degree (B.Tech. and M.Tech.) programmes in 14 engineering departments/schools/science departments, B.Arch. programme in 1 department (Department of Architecture, Planning and Design, established in 2019-20), besides a preparatory course for SC/ST/PwD students during the year under report.

The Institute has developed an online registration portal, fee deposition portal as well as declaration of results etc. through the online. The registration portal started from the session 2014-15 and onwards in the Institute to facilitate the students. The fee deposition portal has been designed and institute fees are successfully deposited in online mode by the students from the even semester 2019-20 and onwards. Due to COVID-19 all academic programmes related to admission, verifications, registration, teaching etc. have been done through online mode only.

An academic section, examination unit and scholarship section are under the Dean (Academic Affairs) of the Institute. Three smart lecture theatre complexes has been established and equipped with LCD project in each class rooms along with the backup of the electricity. The classes for the Institute core courses, HULM and Institute Open elective has been hold centrally in the lecture theaters of the Institute. The Examination unit published the online application forms for the admission of PG annually and for Ph.D. Programmes biannual of every year. Online profile registration, add/drop courses, department-wise/subject-wise students list, grade submission, declaration of results, transcripts has keen automated and taken care by the examination unit. The Scholarship section looks the fellowships (Institute or other) of the students. Academic Section looks the works related to Ordinances, admissions process for B.Tech./B. Pharm./IDD through JEE(Advanced) and M.Sc. through JAM jointly conducted by the IITs, students leave, conducting semester examinations, preparation of academic calendar, class time-tables under supervision of Dean (Academic Affairs)/Associate Dean (Academic Affairs), UG/PG/Core Courses. The office of the Dean (Academic Affairs) has totally automated for the Ph.D. submission as well as submission of grade portal, overload, physical registration also.

Admissions 2021–2022

Candidates for admission to the 4-Year B.Tech., 5-Year B.Arch. and 5-Year Dual Degree programmes were selected through JEE(Advanced) and on the basis of the All India Rank. 2-Year M.Sc. programmes started from the session 2019-20 in the Department of Physics and Chemistry, the candidates were selected through JAM, jointly conducted by the IITs. 2-Year M.Tech./M.Pharm. programmes, candidates get admitted on the basis of GATE/GPAT score. Quite a few candidates were also selected for the M.Tech. programme under the Sponsored and Q.I.P. programmes through interviews and/or written tests. Selection for the Ph.D. programmes was done through tests/interviews, they must qualify the GATE or GPAT or UGC/CSIR-NET. To attract the foreign national students for studies in India, the Institute has also taken admission in PG and Ph.D. Programmes through the Study in India Portal as well as ASEAN Fellowship programmes conducted by the Govt. of India. The Institute also takes admission of foreign nationals for the PG and Ph.D. programs from the session 2021-22 through the newly started A2A Scholarship Scheme under ICCR, Govt of India.

The number of students and scholars admitted to the various programmes in July 2021 and in January 2022 are listed in Table as shown below.

Table: Fresh admissions

Sl. No.	Department/School	B.Tech.	Dual Degree (B.Tech. & M.Tech.)	B.Arch.	M.Sc.	M.Tech.	M.Pharm.	Ph.D.	Total
	Architecture Planning and Design	---	---	20	---	---	---	---	20
	Biochemical Engineering	---	22	---	---	8	---	10	40
	Biomedical Engineering	---	17	---	---	4	---	9	30

Sl. No.	Department/School	B.Tech.	Dual Degree (B.Tech. & M.Tech.)	B.Arch.	M.Sc.	M.Tech.	M.Pharm.	Ph.D.	Total
	Ceramic Engineering	71	17	---	---	3	---	5	96
	Chemical Engineering	148	---	---	---	51	---	14	213
	Chemistry	---	20	---	24	---	---	15	59
	Civil Engineering	115	27	---	---	46	---	9	197
	Computer Science and Engineering	98	34	---	---	21	---	20	173
	Electrical Engineering	110	31	---	---	40	---	18	199
	Electronics Engineering	132	---	---	---	32	---	7	171
	Humanistic Studies	---	---	---	---	---	---	18	18
	Decision Science and Engineering	---	---	---	---	8	---	---	8
	Industrial Management	---	---	---	---	---	---	3	3
	Materials Science and Technology	---	25	---	---	17	---	18	60
	Mathematical Sciences	---	52	---	---	---	---	13	65
	Mechanical Engineering	146	31	---	---	34	---	29	240
	Metallurgical Engineering	98	24	---	---	12	---	12	146
	Mining Engineering	128	28	---	---	31	---	8	195
	Pharmaceutical Engineering and Technology	74	21	---	---	---	39	18	152
	Physics	---	26	---	25	---	---	27	78
	Systems Engineering	---	---	---	---	2	---	2	04
Total		1120	375	20	49	309	39	255	2167

In addition, 81 students (SC – 25; ST – 48; GEPD – 4; OBCPD – 2; EWPD – 1 and SCPD - 1) joined the preparatory course, classes held at IIT-Indore.

Category/Gender-wise students among fresh admissions

Sl. No.	Programme	General		OBC		EWS		SC		ST		PD		Total		
		Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Total
	B.Tech.	350	97	248	55	93	23	136	24	65	18	11	---	**903**	**217**	**1120**
	Dual Degree (B.Tech. & M.Tech.)	120	38	81	14	30	7	45	10	21	6	3	---	**300**	**75**	**375**
	B.Arch.	7	---	5	---	2	---	2	2	2	---	---	---	**18**	**2**	**20**
	M.Sc.	15	5	9	5	4	1	6	1	2	1	---	---	**36**	**13**	**49**
	M.Tech.	104	16	80	5	29	3	46	1	18	2	4	1	**281**	**28**	**309**
	M.Pharm.	8	7	7	3	1	1	4	2	2	2	2	---	**24**	**15**	**39**
	Ph.D.	62	39	61	16	26	5	30	7	5	2	2	---	**186**	**69**	**255**
Total		666	202	491	98	185	40	269	47	115	31	22	1	1748	419	2167

The students admitted during the year included the following:

Foreign national	09		EWS		225
OBC	589		Sponsored	M.Tech. Ph.D.	04 07
Scheduled Castes	316				
Scheduled Tribes	146		Q.I.P.		06
Physically handicapped	23		Project		---
Women Students	419		External registration	Ph.D.	08

Enrolment of Students/Scholars

The total numbers of students on roll in various programmes of the Institute in the academic year 2021–2022 are provided in Table.

Table: Students on roll

Sl. No.	Department/School	B.Tech.	Dual Degree (B.Tech. & M.Tech.)	B.Arch.	M.Sc.	M.Tech.	M.Pharm.	Ph.D.	Total
	Architecture Planning and Design	0	0	53	0	0	0	0	**53**
	Biochemical Engineering	0	81	0	0	16	0	41	**138**
	Biomedical Engineering	0	77	0	0	11	0	39	**127**
	Ceramic Engineering	192	67	0	0	25	0	30	**314**
	Chemical Engineering	612	0	0	0	103	0	49	**764**
	Chemistry	0	82	0	45	0	0	64	**191**
	Civil Engineering	441	132	0	0	111	0	65	**749**
	Computer Science and Engineering	367	138	0	0	21	0	64	**590**
	Electrical Engineering	430	133	0	0	91	0	55	**709**
	Electronics Engineering	490	0	0	0	72	0	43	**605**
	Humanistic Studies	0	0	0	0	0	0	44	**44**
	Decision Sciences and Engineering	0	0	0	0	20	0	0	**20**
	Industrial Management	0	0	0	0	0	0	11	**11**
	Materials Science and Technology	0	93	0	0	34	0	66	**193**
	Mathematical Sciences	0	197	0	0	0	0	107	**304**
	Mechanical Engineering	554	140	0	0	90	0	72	**856**
	Metallurgical Engineering	329	112	0	0	39	0	53	**533**
	Mining Engineering	391	101	0	0	62	0	32	**586**
	Pharmaceutical Engineering and Technology	198	74	0	0	0	89	70	**431**
	Physics	0	124	0	50	0	0	103	**277**
	Systems Engineering	0	0	0	0	10	0	4	**14**
Total		**4004**	**1551**	**53**	**95**	**705**	**89**	**1012**	**7509**

Category/Gender-wise students on roll

Sl. No.	Programme	General		OBC		EWS		SC		ST		PD		Total		
		Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Total
	B.Tech.	1371	317	922	180	266	64	499	93	221	44	24	3	**3303**	**701**	**4004**
	Dual Degree (B.Tech. & M.Tech.)	547	136	341	58	87	20	197	31	101	20	11	2	**1284**	**267**	**1551**
	B.Arch.	17	6	13	2	4	0	5	2	3	1	0	0	**42**	**11**	**53**
	M.Sc.	28	10	19	8	8	2	10	3	3	3	0	1	**68**	**27**	**95**
	M.Tech.	225	48	171	21	69	4	101	8	37	5	15	1	**618**	**87**	**705**
	M.Pharm.	19	11	20	6	5	3	7	6	4	4	4	0	**59**	**30**	**89**
	Ph.D.	310	175	240	82	33	15	98	29	13	7	9	1	**703**	**309**	**1012**
Total		**2517**	**703**	**1726**	**357**	**472**	**108**	**917**	**172**	**382**	**84**	**63**	**8**	**6077**	**1432**	**7509**

The students on roll including the following:

Foreign national	15		EWS		580
OBC	2083		Sponsored	M.Tech. Ph.D.	9 8
Scheduled Castes	1089				
Scheduled Tribes	466		Q.I.P.		27
Physically handicapped	71		Project		16
Women Students	1432		External registration	Ph.D.	52

The branch-/discipline-wise and year-wise details of students enrolled in the 4-Year B.Tech., 5-Year Dual Degree B.Tech.-M.Tech. programmes are provided here:

4-Year B.Tech. students on roll

Sl. No.	Branch	Year 2021	Year 2020	Year 2019	2018 and earlier batches	Total
	Ceramic Engineering	71	38	49	34	**192**
	Chemical Engineering	148	172	159	133	**612**
	Civil Engineering	115	132	107	87	**441**
	Computer Science and Engineering	98	109	84	76	**367**
	Electrical Engineering	110	127	97	96	**430**
	Electronics Engineering	132	146	113	99	**490**
	Mechanical Engineering	146	163	122	123	**554**
	Metallurgical Engineering	98	87	87	57	**329**
	Mining Engineering	128	81	108	74	**391**
	Pharmaceutical Engineering and Technology	74	40	49	35	**198**
Total		**1120**	**1095**	**975**	**814**	**4004**

5-Year B.Arch. students on roll

Sl. No.	Branch	Year 2021	Year 2020	Year 2019	Year 2018	2017 and earlier batches	Total
	Architecture Planning and Design	20	18	15	--	--	53

5-Year Dual Degree (B.Tech. and M.Tech.) students on roll

Sl. No.	Branch	Year 2021	Year 2020	Year 2019	Year 2018	2017 and earlier batches	Total
	Biochemical Engineering	22	14	18	13	14	**81**
	Biomedical Engineering	17	13	15	13	19	**77**
	Ceramic Engineering	17	10	12	11	17	**67**
	Chemistry	20	17	15	13	17	**82**
	Civil Engineering	27	33	22	25	25	**132**
	Computer Science and Engineering	34	37	28	22	17	**138**
	Electrical Engineering	31	33	23	24	22	**133**
	Materials Science and Technology	25	14	22	16	16	**93**
	Mathematical Sciences	52	57	43	23	22	**197**
	Mechanical Engineering	31	35	27	25	22	**140**
	Metallurgical Engineering	24	28	25	17	18	**112**

Sl. No.	Branch	Year 2021	Year 2020	Year 2019	Year 2018	2017 and earlier batches	Total
	Mining Engineering	28	16	25	14	18	**101**
	Pharmaceutical Engineering and Technology	21	11	11	15	16	**74**
	Physics	26	31	25	23	19	**124**
Total		**375**	**349**	**311**	**254**	**262**	**1551**

2-Years M.Tech. students on roll

Sl. No.	Branch	Year 2021	Year 2020	Total
	Biochemical Engineering	8	8	**16**
	Biomedical Engineering	4	7	**11**
	Ceramic Engineering	3	22	**25**
	Chemical Engineering	51	52	**103**
	Civil Engineering	46	65	**111**
	Computer Science and Engineering	21	0	**21**
	Electrical Engineering	40	51	**91**
	Electronics Engineering	32	40	**72**
	Decision Sciences and Engineering	8	12	**20**
	Materials Science and Technology	17	17	**34**
	Mechanical Engineering	34	56	**90**
	Metallurgical Engineering	12	27	**39**
	Mining Engineering	31	31	**62**
	Systems Engineering	2	8	**10**
Total		**309**	**396**	**705**

2-Years M.Pharm. students on roll

Sl. No.	Branch	Year 2021	Year 2020	Total
	Pharmaceutical Engineering and Technology	39	50	**89**

2-Years M.Sc. students on roll

Sl. No.	Branch	Year 2021	Year 2020	Total
	Chemistry	24	21	**45**
	Physics	25	25	**50**
Total		**49**	**46**	**95**

Ph.D. scholars on roll

Sl. No.	Branch	Year 2021	Year 2020	Year 2019	Year 2018	2017 and earlier batches	Total
	Biochemical Engineering	10	5	12	8	6	41
	Biomedical Engineering	7	3	12	7	10	39
	Ceramic Engineering	5	1	2	10	12	30
	Chemical Engineering	11	4	16	10	8	49
	Chemistry	11	2	20	14	17	64
	Civil Engineering	9	5	16	21	14	65

Sl. No.	Branch	Year 2021	Year 2020	Year 2019	Year 2018	2017 and earlier batches	Total
	Computer Science and Engineering	19	3	8	17	17	64
	Electrical Engineering	18	10	15	6	6	55
	Electronics Engineering	6	6	8	9	14	43
	Humanistic Studies	16	9	11	8	0	44
	Industrial Management	3	1	2	2	3	11
	Materials Science and Technology	16	18	10	12	10	66
	Mathematical Sciences	12	14	26	43	12	107
	Mechanical Engineering	25	15	11	9	12	72
	Metallurgical Engineering	8	10	7	13	15	53
	Mining Engineering	8	1	10	7	6	32
	Pharmaceutical Engineering and Technology	17	10	18	17	8	70
	Physics	23	12	25	18	25	103
	Systems Engineering	2	1	1	0	0	4
Total		**226**	**130**	**230**	**231**	**195**	**1012**

Students Intake in different programmes

The Institute offered the following programmes in various departments/school. The Department/School-wise Intake is given below:

Department/Programme-wise Intake capacity of Session 2021-22

COURSES	Students Intake										
	GE	OBC	EWS	SC	ST	PwD					Total
						GE	OBC	EWS	SC	ST	
Four-Years B.Tech. Programmes											
1. Ceramic Engineering	29	19	7	11	5	2	1		1		**75**
2. Chemical Engineering	60	40	15	22	11	3	2	1	1	1	**156**
3. Civil Engineering	46	31	11	17	9	2	2	1	1		**120**
4. Computer Science & Engg.	39	25	9	14	7	2	1		1	1	**99**
5. Electrical Engineering	44	30	11	16	8	2	2		1	1	**115**
6. Electronics Engineering	51	34	13	19	9	3	2	1		1	**133**
7. Mechanical Engineering	57	38	14	21	11	3	2	1	1		**148**
8. Metallurgical Engineering	41	27	10	15	8	2	1	1	1		**106**
9. Mining Engineering	53	36	13	20	9						**131**
10. Pharmaceutical Engineering and Technology	31	20	8	11	6	2	1		1		**80**
Total	**451**	**300**	**111**	**166**	**83**	**21**	**14**	**5**	**8**	**4**	**1163**
Five-Years Integrated M.Tech. Dual Degree Programmes											
11. Biochemical Engineering with M.Tech. in Biochemical Engineering and Biotechnology	9	6	2	4	2	1	1				**25**
12. Bioengineering with M.Tech. in Biomedical Technology	8	5	2	3	1	1			1		**21**
13. Ceramic Engineering	8	5	2	3	1		1				**20**
14. Civil Engineering	12	8	3	4	2				1		**30**
15. Computer Science & Engineering	13	9	3	5	3		1				**34**

COURSES	Students Intake										
	GE	OBC	EWS	SC	ST	PwD					Total
						GE	OBC	EWS	SC	ST	
16. Electrical Engineering with M.Tech. in Power Electronics	12	8	3	5	2						**30**
17. Engineering Physics	11	7	3	4	2	1					**28**
18. Industrial Chemistry	8	5	2	3	2	1					**21**
19. Materials Science & Technology	11	7	3	4	1	1			1		**28**
20. Mathematics & Computing	20	13	5	7	4	1	1	1			**52**
21. Mechanical Engineering	12	8	3	4	2	1	1			1	**32**
22. Metallurgical Engineering	11	7	3	4	2			1			**28**
23. Mining Engineering	13	8	2	5	2						**30**
24. Pharmaceutical Engineering and Technology	8	5	2	3	2	1					**21**
Total	**156**	**101**	**38**	**58**	**28**	**8**	**5**	**2**	**3**	**1**	**400**
Five-Years B.Arch. Degree Programme											
25. Architecture	10	7	2	4	2	1					**26**

COURSES	Students Intake										
	GE	OBC	EWS	SC	ST	PwD					Total
						GE	OBC	EWS	SC	ST	
Two-Years M.Sc. Programmes											
Chemistry	9	6	2	4	2	1	1	0	0		25
Physics	10	7	3	3	1	0	0	0		1	25
Total	19	13	5	7	3	1	1	0		1	50

COURSES	Students Intake						
	GE	OBC	EWS	SC	ST	PC#	Total
Two-Years M.Tech. Programmes							
26. Biochemical Engineering	5	3	1	2	1	(1)	**12**
27. Biomedical Engineering	5	3	1	2	1	(1)	**12**
28. Ceramic Engineering	10	6	2	4	2	(1)	**24**
29. Chemical Engineering	25	15	6	9	4	(3)	**59**
30. Civil Engineering	33	21	8	11	6	(4)	**79**
31. Electrical Engineering	25	15	6	9	4	(3)	**59**
32. Electronics Engineering	25	15	6	9	4	(3)	**59**
33. Decision Sciences and Engineering	5	3	1	2	1	(1)	**12**
34. Materials Science & Technology	10	6	2	4	2	(1)	**24**
35. Mechanical Engineering	25	15	6	9	4	(3)	**59**
36. Metallurgical Engineering	25	15	6	9	4	(3)	**59**
37. Mining Engineering	15	9	4	5	3	(2)	**36**
38. Systems Engineering	5	3	1	2	1	(1)	**12**
Two-Years M.Pharm. Programme							
39. Pharmaceutical Engineering and Technology	20	13	5	7	4	(2)	**49**
Grand Total of 2-Years M.Tech. Courses	233	142	55	84	41	(29)	555

Student intake numbers for PC (5%) category has not been added in calculating total number of seats, as provision for the physically challenged candidate will be made from within the respective category.

Convocation:

The 10th Convocation was held on April 10, 2022. Shri Somnath S. Secretary, Department of Space & Chairman, Indian Space Research Organization (ISRO) was delivered the convocation address. A total of 1866 various degrees were awarded in 10th Convocation of the Institute. During 10th Convocation, approximately 1199 candidates were received their degrees in person. The department-wise details of the degrees awarded are provided in Table.

Degrees awarded

Branch	Ph.D.	M. Tech.	M. Pharm.	M.Sc.	Dual Degree				B. Tech.	B. Pharm.	Total
					B. Tech.	M. Tech.	B. Pharm.	M. Pharm.			
Biochemical Engineering	4	9			14	14					**41**
Biomedical Engineering	6	8			20	20					**54**
Ceramic Engineering	7	11			14	14			43		**89**
Chemical Engineering	20	42							117		**179**
Chemistry	13			18	16	16					**63**
Civil Engineering	15	47			22	22			74		**180**
Computer Science & Engg.	17				17	17			64		**115**
Electrical Engineering	9	17			20	20			88		**154**
Electronics Engineering	16	38							85		**139**
Humanistic Studies	1										**1**
Industrial Management	5	9									**14**
Materials Science & Tech.	9	15			17	17					**58**
Mathematical Sciences	15				23	23					**61**
Mechanical Engineering	8	48			23	23			110		**212**
Metallurgical Engineering	6	39			18	18			56		**137**
Mining Engineering	11	33			18	18			85		**165**
Pharmaceutics	13		47		13	13			44		**130**
Physics	10			18	17	17					**62**
Systems Engineering	7	5									**12**
TOTAL	**192**	**321**	**47**	**36**	**252**	**252**			**766**		**1866**

With this convocation, the total number of degrees awarded so far by the Institute is **44,438**. Total 15,775 degrees awarded by IIT(BHU) and before conversion of IT-BHU into IIT(BHU), the IT-BHU was awarded total number of degrees is 28,663:

Sl. No.	Programme	No. of degrees awarded		
		After conversion	Before conversion	Total
	Ph.D.	972	854	**1,826**
	M.Tech.	2776	3119	**5,895**
	M.Pharm.	458	653	**1,111**
	M.Sc.	36		**36**
	I.M.D.	266		**266**
	Dual Degree B.Tech.	1724		**1,724**
	M.Tech.	1724		**1,724**
	Dual Degree B.Pharm.	76		**76**
	M.Pharm.	76		**76**

Sl. No.	Programme	No. of degrees awarded		
		After conversion	Before conversion	Total
	B.Tech.	7543	22,947	**30,490**
	B.Pharm.	124	1,090	**1,214**
Total		**15,775**	**28,663**	**44,438**

Award of Medals and Prizes to Students:

Convocation prizes

Medals and Prizes awarded to students at the 10th Convocation:

1. Ms. Shalini Mishra

She is awarded I.I.T.(B.H.U.) Varanasi Medal for standing First at the M.Tech. in Biochemical Engineering Examination, 2021.

2. Shri Sourav Chowdhury

He is awarded I.I.T.(B.H.U.) Varanasi Medal for standing First at the M.Tech. in Biomedical Engineering Examination, 2021.

3. Ms. Ankita Jaiswal

She is awarded I.I.T.(B.H.U.) Varanasi Medal for standing First at the M.Tech. in Ceramic Engineering Examination, 2021.

4. Ms. Vandna

She is awarded I.I.T.(B.H.U.) Varanasi Medal for standing First at the M.Tech. in Chemical Engineering Examination, 2021.

5. Shri Aman Sharma

He is awarded

a) I.I.T.(B.H.U.) Varanasi Medal for standing First at the M.Tech. in Civil Engineering Examination, 2021.

b) R.P. Singh, IRSE (Retired) Gold Medal for securing highest marks at the M.Tech. in Civil Engineering Examination, 2021.

6. Shri Potladurthy Krishna Teja

He is awarded I.I.T.(B.H.U.) Varanasi Medal for standing First at the M.Tech. in Electrical Engineering Examination, 2021.

7. Ms. Vaibhavi Mishra

She is awarded T.N. Srivastava Memorial Centenary Award for the best thesis on Power Systems Applications at the M.Tech. in Electrical Engineering Examination, 2021.

8. Ms. Sakshi Agarwal

She is awarded I.I.T.(B.H.U.) Varanasi Medal for standing First at the M.Tech. in Electronics Engineering Examination, 2021.

9. Shri Valluri Nikhil Chandra

He is awarded Sanjeev Memorial Gold Medal for securing First position at the M.Tech. in Electronics Engineering (Digital Technology and Instrumentation) Examination, 2021.

10. Shri Alankrit Goel

He is awarded I.I.T.(B.H.U.) Varanasi Medal for standing First at the M.Tech. in Industrial Management Examination, 2021.

11. Shri Biswaroop Burman

He is awarded I.I.T.(B.H.U.) Varanasi Medal for standing First at the M.Tech. in Materials Science and Technology Examination, 2021.

12. Shri Ananthakrishnan K

He is awarded:

a) I.I.T.(B.H.U.) Varanasi Medal for standing First at the M.Tech. in Mechanical Engineering Examination, 2021.

b) Prof. (Dr.) Mahendra Kumar Jain Nyayacharya Gold Medal for securing highest CPI at the M.Tech. in Mechanical Engineering Examination,2021.

13. Shri Shubham Gupta

He is awarded S.K. Memorial Gold Medal for standing First position at the M.Tech. in Mechanical Engineering (Machine Design) Examination, 2021.

14. Shri Paila Suresh

He is awarded I.I.T.(B.H.U.) Varanasi Medal for standing First at the M.Tech. in Metallurgical Engineering Examination, 2021.

15. Shri Vishal Kumar Singh

He is awarded I.I.T.(B.H.U.) Varanasi Medal for standing First at the M.Tech. in Mining Engineering Examination, 2021.

16. Ms. Chundru Saikalpana

She is awarded I.I.T.(B.H.U.) Varanasi Medal for standing First at the M.Tech. in Systems Engineering Examination, 2021.

17. Ms. Mohana Das

She is awarded: -

a) I.I.T.(B.H.U.) Varanasi Medal for standing First at the M.Pharm. Examination,2021.

b) Shri J.N. Kapoor Gold Medal for securing First Position at the M.Pharm. Exam., 2021.

18. Ms. Poorvi Allawadi

She is awarded I.I.T.(B.H.U.) Varanasi Medal for standing First at the M.Sc. in Chemistry Examination, 2021.

19. Shri Prateek Agrawal

He is awarded I.I.T.(B.H.U.) Varanasi Medal for standing First at the M.Sc. in Physics Examination, 2021.

20. Shri Ayush Shukla

He is awarded I.I.T.(B.H.U.) Varanasi Medal for standing First at the 5-Year I.D.D. (B.Tech.-M.Tech.) in Biochemical Engineering (Biochemical Engineering and Biotechnology) Examination, 2021.

21. Shri Pradyumn Agarwal

He is awarded I.I.T.(B.H.U.) Varanasi Medal for standing First at the 5-Year I.D.D. (B.Tech.-M.Tech.) in Bioengineering (Biomedical Technology) Examination, 2021.

22. Ms. Muskan Agarwal

She is awarded I.I.T.(B.H.U.) Varanasi Medal for standing First at the 5-Year I.D.D. (B.Tech.-M.Tech.) in Ceramic Engineering Examination, 2021.

23. Shri Patil Mohit Pravinchandra

He is awarded: -

a) I.I.T.(B.H.U.) Varanasi Medal for standing First at the 5-Year I.D.D. (B.Tech.-M.Tech.) in Industrial Chemistry Examination, 2021.

b) Shri Taj Ahmad Quraishi Gold Medal for securing First position at the 5-Year I.D.D. (B.Tech.-M.Tech.) in Industrial Chemistry Examination, 2021

24. Shri Manan Kumawat

He is awarded I.I.T.(B.H.U.) Varanasi Medal for standing First at the 5-Year I.D.D. (B.Tech.-M.Tech.) in Civil Engineering (Structural Engineering) Examination, 2021.

25. Shri Siddharth Sahay

He is awarded I.I.T.(B.H.U.) Varanasi Medal for standing First at the 5-Year I.D.D. (B.Tech.-M.Tech.) in Computer Science & Engineering Examination, 2021.

26. Shri Karan Kumar

He is awarded I.I.T.(B.H.U.) Varanasi Medal for standing First at the 5-Year I.D.D. (B.Tech.-M.Tech.) in Electrical Engineering (Power Electronics) Examination, 2021.

27. Shri Anirudh Ingle

He is awarded I.I.T.(B.H.U.) Varanasi Medal for standing First at the 5-Year I.D.D. (B.Tech.-M.Tech.) in Materials Science & Technology Examination, 2021.

28. Shri Yash Goyal

He is awarded I.I.T.(B.H.U.) Varanasi Medal for standing First at the 5-Year I.D.D. (B.Tech.-M.Tech.) in Mathematics and Computing Examination, 2021.

29. Shri Shashwat Sharad Agarwal

He is awarded I.I.T.(B.H.U.) Varanasi Medal for standing First at the 5-Year I.D.D. (B.Tech.-M.Tech.) in Mechanical Engineering Examination, 2021.

30. Ms. Sakshi Sharma

She is awarded I.I.T.(B.H.U.) Varanasi Medal for standing First at the 5-Year I.D.D. (B.Tech.-M.Tech.) in Metallurgical Engineering Examination, 2021.

31. Shri Aditya Patra

He is awarded I.I.T.(B.H.U.) Varanasi Medal for standing First at the 5-Year I.D.D. (B.Tech.-M.Tech.) in Mining Engineering Examination, 2021.

32. Shri Aman Khurana

He is awarded I.I.T.(B.H.U.) Varanasi Medal for standing First at the 5-Year I.D.D. (B.Tech.-M.Tech.) in Pharmaceutical Engineering and Technology Examination, 2021.

33. Shri Abhijit Pravin Chaudhari

He is awarded I.I.T.(B.H.U.) Varanasi Medal for standing First at the 5-Year I.D.D. (B.Tech.-M.Tech.) in Engineering Physics Examination, 2021.

34. Shri Harsh Baldi

He is awarded: -

a) I.I.T.(B.H.U.) Varanasi Medal for standing First at the B.Tech. in Ceramic Engineering Examination, 2021.

b) Harbans Gokul Memorial Gold Medal for standing first at the B.Tech. among the Electrical, Electronics and Ceramic Engg. Exam. 2021 and Best Project work in the area of Electrical, Electronics and Ceramics.

35. Shri Amitesh Panda

He is awarded: -

a) I.I.T.(B.H.U.) Varanasi Medal for standing First at the B.Tech. in Chemical Engineering Examination, 2021.

b) The R.B.G. Modi Medal for standing First at the B.Tech. in Chemical Engineering Examination, 2021.

c) Manishi Sharma Memorial Gold Medal for securing First position at B.Tech. Chemical Engineering Examination, 2021

d) Mrs. Gargi Devi Trivedi Memorial Gold Medal for securing highest marks in B.Tech. Chemical Engineering Examination, 2021.

e) Prof. Y.D. Upadhya Memorial Gold Medal for securing highest CPI at B.Tech. Chemical Engineering Examination, 2021.

f) Dr. R.J. Rathi Financial Award Rs. 1000/= cash for standing First at the B.Tech. in Chemical Engineering Examination, 2021.

g) Manishi Sharma Memorial Cash Prize Rs. 2000/= for securing First position at the B.Tech. in Chemical Engineering Examination, 2021.

36. Ms. Agrawal Nisha Mukesh

She is awarded Smt. Indira Tripathi Gold Medal for securing highest CPI among the girl students at the B.Tech. in Chemical Engineering Examination, 2021.

37. Shri Puru Dubey

He is awarded: -

a) I.I.T.(B.H.U.) Varanasi Medal for standing First at the B.Tech. in Civil Engineering Examination, 2021.

b) CRS Iyengar Memorial Gold Medal for securing highest marks in B.Tech. 4-Year Civil Engineering Examination, 2021.

c) Rai Bahadur Taracharan Gue Memorial Award Rs. 500/= cash for standing First at the B.Tech. in Civil Engineering Examination, 2021.

d) Late Prof. Manoranjan Sengupta Platinum Jubilee Merit Award Rs. 1000/= cash for securing highest marks in B.Tech. in Civil Engineering Examination, 2021.

38. Shri Sankalp Verma

He is awarded Meenakshamma Shankaranaramappa Prize Rs. 500/= cash for securing highest marks in Environmental Engineering (Theory) at the B.Tech. Civil Engineering Examination, 2021.

39. Shri Sunny Kumar

He is awarded: -

a) Smt. Bimla Aggrawal Medal for securing > 8.00 CPI and having lowest family income out of the top 4 students at the B.Tech. in Civil Engineering Examination, 2021.

b) Smt. Bimla Aggrawal Cash Prize Rs. 15000/= for securing > 8.00 CPI and having lowest family income out of the top 4 students at the B.Tech. in Civil Engineering Exam., 2021.

40. Ms. Shobha Amala Vagdevi Y

She is awarded Smt. Indira Tripathi Gold Medal for securing highest CPI among the girl students at the B.Tech. in Civil Engineering Examination, 2021.

41. Shri Pranav Dalal

He is awarded: -

a) I.I.T.(B.H.U.) Varanasi Medal for standing First at the B.Tech. in Computer Science & Engineering Examination, 2021.

b) Late Shri Shyam Sunder Lal Razdan Memorial Gold Medal for securing highest percentage of marks in B.Tech. Examination, 2021.

c) Prof. Gopal Tripathi Memorial Gold Medal for securing highest marks at the B.Tech. Examination, 2021.

d) Smt. Arati Paul and Prof. Binod Bihari Paul Gold Medal for securing highest marks in IV Year Examination among all the students of B.Tech. Examination, 2021.

e) C. Raja Gopal Memorial Gold Medal for securing highest marks in B.Tech. 4-Year Computer Science & Engineering Examination, 2021.

f) Umesh Pratap Singh Gold Medal for First Rank at the B.Tech. Examination, 2021 among all the branches.

g) Shri Raj Kishore Kapoor Silver Medal for securing highest marks at the B.Tech. Examination, 2021.

h) Dr. Annie Besant Prize (in the forms of books by Dr. Annie Besant including copy of the 'Bhagavadgita') for standing First position among all the branches of B.Tech. Examination, 2021.

42. Ms. Janhavi Gupta

She is awarded: -

a) Smt. Indira Tripathi Gold Medal for securing highest CPI among the girl students at the B.Tech. in Computer Science & Engineering Examination, 2021.

b) Late Dr. R.N. Singh and Mrs. Uma Singh Medal for securing highest CPI among the girl students at the B.Tech. Examination, 2021.

43. Shri Kushal Tibrewal

He is awarded: -

a) I.I.T.(B.H.U.) Varanasi Medal for standing First at the B.Tech. in Electrical Engineering Examination, 2021.

b) President's Gold Medal for outstanding performance in academics among all disciplines of B.Tech. Examination 2021.

c) The R.B.G. Modi Medal for standing First at the B.Tech. in Electrical Engineering Examination, 2021.

d) Lala Balak Ramji Kohinoor Memorial Gold Medal for securing highest marks at the B.Tech. Exam., 2021 among the branches of Civil, Mechanical, Electrical and Electronics Engineering.

e) Himmat Narayan Singh Memorial Gold Medal for securing the First position and First Division in B.Tech. Electrical Engineering Examination, 2021.

f) CRS Iyengar Memorial Gold Medal for securing highest marks in B.Tech. 4-Year Electrical Engineering Examination, 2021.

g) Shri Om Prakash Aggrawal Medal for securing > 8.00 CPI and having lowest family income out of the top 4 students at the B.Tech. in Electrical Engineering Exam., 2021.

h) N.V.R. Nageshwar Iyer (Prize Rs. 100/= in the form of books) for standing First in B.Tech. in Electrical Engineering Examination, 2021.

i) Prof. V.V. Chalam Prize (The Prize shall be in the form of books by Mr. J. Krishnamurti) for standing Second position among all the branches of B.Tech. Examination, 2021.

j) Late Prof. Manoranjan Sengupta Platinum Jubilee Merit Award Rs. 1000/= cash for securing highest marks in the B.Tech. in Electrical Engineering Examination, 2021.

k) Shri Om Prakash Aggrawal Cash Prize Rs. 15000/= for securing > 8.00 CPI and having lowest family income out of the top 4 students at the B.Tech. in Electrical Engineering Examination, 2021.

44. Ms. Anushka Gupta

She is awarded Smt. Indira Tripathi Gold Medal for securing highest CPI among the girl students at the B.Tech. in Electrical Engineering Examination, 2021.

45. Shri R A D S Abhijith

He is awarded: -

a) I.I.T.(B.H.U.) Varanasi Medal for standing First at the B.Tech. in Electronics Engineering Examination, 2021.

b) Lala Balak Ramji Kohinoor Memorial Gold Medal for securing highest marks at the B.Tech. Examination, 2021 among the branches of Civil, Mechanical, Electrical and Electronics Engineering.

c) Late Prof. Nagesh Chandra Vaidya Gold Medal for standing First at the B.Tech. in Electronics Engineering Examination, 2021.

d) Dr. (Late) Nandita Saha Roy Memorial Gold Medal for securing First position in B.Tech. Electronics Engineering Examination, 2021.

e) C. Raja Gopal Memorial Gold Medal for securing highest marks in B.Tech. 4-Year Electronics Engineering Examination, 2021.

f) Prof. V.V. Chalam Prize (The Prize shall be in the form of books by Mr. J. Krishnamurti) for standing Second position among all the branches of B.Tech. Examination, 2021.

g) Dr. Ayyagari Sambasiva Rao Prize Rs. 1000/= cash for standing First at the B.Tech. in Electronics Engineering Examination, 2021.

h) Late Prof. Manoranjan Sengupta Platinum Jubilee Merit Award Rs. 1000/= cash for securing highest marks in B.Tech. in Electronics Engineering Examination, 2021

46. Shri Pallav Totawat

He is awarded Prof. A.K. Ghosh Silver Medal for standing Second Position in B.Tech. in Electronics Engineering Examination, 2021.

47. Shri Krishnendu Maji

He is awarded Prof. A.K. Ghosh Silver Medal for standing Second Position in B.Tech. in Electronics Engineering Examination, 2021.

48. Ms. Shreya Sharma

She is awarded Prof. B.B. Bansal Memorial Gold Medal for being involved in Social Services/Co-curricular activities and having highest CPI at the undergraduate engineering Examination, 2021 among such students.

49. Shri Samarth Chaudhry

He is awarded: -

a) I.I.T.(B.H.U.) Varanasi Medal for standing First at the B.Tech. in Mechanical Engineering Examination, 2021.

b) The Prince of Wales Medal for standing First at the B.Tech. in Mechanical Engineering Examination, 2021.

c) Sudhir Kumar Sharma Memorial Gold Medal for securing highest marks in B.Tech. Mechanical Engineering Examination, 2021.

d) CRS Iyengar Memorial Gold Medal for securing highest marks in B.Tech. 4-Year Mechanical Engineering Examination, 2021.

e) Late Prof. Manoranjan Sengupta Platinum Jubilee Merit Award Rs. 1000/= cash for securing highest marks in B.Tech. in Mechanical Engineering Examination, 2021

50. Ms. Shreyasi Airi

She is awarded Smt. Indira Tripathi Gold Medal for securing highest CPI among the girl students at the B.Tech. in Mechanical Engineering Examination, 2021.

51. Shri Aneesh Amarendra Namjoshi

He is awarded: -

a) I.I.T.(B.H.U.) Varanasi Medal for standing First at the B.Tech. in Metallurgical Engineering Examination, 2021.

b) The Bishan Das Basil Medal for securing First position among B.Tech. in Mining and Metallurgical Engineering Examination 2021.

c) Swarnamma Memorial Gold Medal for securing highest marks in B.Tech. 4-Year Metallurgical Engineering Examination, 2021.

d) Shri Aditya Kumar Awasthi Endowment Award Rs. 1.0 lakh for securing First position at the B.Tech. in Metallurgical Engineering Examination, 2021.

52. Shri Pulkit Gupta

He is awarded Director's Gold Medal for outstanding all-round performance and excellent organizational abilities and leadership qualities among all B.Tech. graduates of 2021.

53. Ms. Shristi Singh

She is awarded Smt. Indira Tripathi Gold Medal for securing highest CPI among the girl students at the B.Tech. in Metallurgical Engineering Examination, 2021.

54. Shri Suraj Birendra Nath Hazra

He is awarded Ms. Indira Ananthachari Endowment Fund Prize Rs. 10,000/= cash for securing highest CPI more than 7.50 and family income is less than Rs. 5 lacs per annum at the B.Tech. Metallurgical Engineering Examination, 2021.

55. Shri Birendra Yadav

He is awarded Ms. Indira Ananthachari Endowment Fund Prize Rs. 10,000/= cash for securing highest CPI more than 7.50 and family income is less than Rs. 5 lacs per annum at the B.Tech. Metallurgical Engineering Examination, 2021.

56. Shri Abhishek Kumar

He is awarded Ms. Indira Ananthachari Endowment Fund Prize Rs. 10,000/= cash for securing highest CPI more than 7.50 and family income is less than Rs. 5 lacs per annum at the B.Tech. Metallurgical Engineering Examination, 2021.

57. Shri Rajat Kumar Khandelwal

He is awarded: -

a) I.I.T.(B.H.U.) Varanasi Medal for standing First at the B.Tech. in Mining Engineering Examination, 2021.

b) Dr. B.S. Verma Memorial Gold Medal for securing highest marks in B.Tech. Mining Engineering Examination, 2021.

58. Ms. Anushree Shekhawat

She is awarded: -

a) I.I.T.(B.H.U.) Varanasi Medal for standing First at the B.Tech. in Pharmaceutical Engineering & Technology Examination, 2021.

b) Aruna and Malviya Medal for standing First at the B.Tech. in Pharmaceutical Engineering & Technology Examination, 2021.

c) She is awarded Late Sundari Devi Gold Medal for securing highest CPI > 8.50 as a girl student in Pharmaceutical Engineering and Technology at the B.Tech. Examination, 2021.

d) Shri J.N. Kapoor Gold Medal for securing First position at the B.Tech. in Pharmaceutical Engineering & Technology Examination, 2021.

e) Late Prof. G.P. Srivastava (Prize Rs. 200/= in the form of books) for standing First at the B.Tech. in Pharmaceutical Engineering & Technology Examination,2021.

6. Department of Architecture, Planning & Design

Full Name of Department: Department of Architecture, Planning and Design IIT (BHU) Varanasi

Year of Establishment: 2019

Head of the Department: Prof. Rajesh Kumar **w.e.f.** 17.12.2021

Brief introduction of the Department/School:

The department aims at addressing essential challenges faced by our country's infrastructure industry and academia. Students should not only have the creative urge to ideate a better built environment, but also develop confidence to experiment and invent technologies to execute those ideas. The program will essentially prepare students for a career in mainstream architectural practice in private and public domains, there will be a significant thrust to encourage them to take up other careers in research, academics, journalism, outreach and advocacy which are becoming increasingly relevant and even critical to the continuation of a habitable world as will be progressively defined through the lens of the universally accepted Sustainable Development Goals (SDG).

Now-a-days none of the subjects are completely independent. They are interdisciplinary and trans-disciplinary in nature. IIT (BHU) is one of the best centre for setting up a new department of architecture and planning because here we have other well-established departments which will support interdisciplinary research and projects, e.g. the Electronics Department will help the planners know about the sensors, similarly the Department of Material science and Ceramic Engineering will let us know about the new materials as substitute, Electrical Department will support in Energy management, Computer Department in developing compatible software development, Mechanical Department will help in developing devices etc. Therefore, having all well-established departments will definitely help the new department grow in a faster and better way.

Major areas of Research: Heritage Conservation

Area of the Department/School (in square meters): 900.00

Infrastructure

Sl. No.	Particulars	Number
1	No. of classrooms	02 (Studios)
2	No. of lecture halls	01
3	No. of laboratory	01
4	No. of computers available for students in the Department/School	20

Students on Roll

Sl. No.	Programme	I Year	II Year	III Year	IV Year	V Year & above
1.	B. Tech/B. Arch	18	18	14	Nil	Nil
2.	Dual Degree	Nil	Nil	Nil	Nil	Nil
3.	M. Tech/ M. Pharm	Nil	Nil	Nil	Nil	Nil
4.	Ph. D (Under Institute Fellowship)	Nil	Nil	Nil	Nil	Nil
5.	Ph. D (Under Project Fellowship)	Nil	Nil	Nil	Nil	Nil
6.	Ph. D (Under Sponsored Category)	Nil	Nil	Nil	Nil	Nil

Names of students/scholars who got prizes and awards outside the Institute

Sl. No.	Name of student	Roll no.	Name of prize	Date & venue	Prize awarded by
1	A Mohamed Rafee	20218021	Special Mention, Ayodhya city logo design competition	20-12-2021 (Online mode)	Ayodhya Development Authority
2	Anshveer Singh Bhatia	21218003	Third Position, Jumble the Good Word	13-03-2022	Springfest'22 IITKGP
3	Asif H Mazumder	20218003	Top 10 Honourable Mention at Zootopia 2021	29-06-2021	NITI Aayog, AIM & Central Zoo Authority of India
4	Sahil Ali Salmani	19218012	TDRA Dubai Hackathon winner top 3 (Carbon removal)	25-01-2022	TDRA Dubai
5	Aman Singh	19218002	TDRA Dubai Hackathon winner top 3 (Carbon removal)	25-01-2022	TDRA Dubai

Names of Students/Scholars who went for foreign Internship

Sl. No.	Name of student	Roll No.	Name of the organization	Place of internship	Country	Duration
1	Asif H Mazumder	20218003	AshArth Asia Pte Ltd	Online Mode due to Pandemic	Singapore	1-10-2021 to 31-12-2021 (3 Months) Paid Internship
3	Sahil Ali Salmani	19218012	AshArth Asia Pte Ltd	Online	Singapore	27-09-2021 to 28-02-2022

Faculty & their activities

Faculty and their areas of specialisation

Sl. No.	Name, Qualifications, Employee No.	Date of award of PhD degree	Major areas of specialization
Associate Professors			
1	Ar. Indra Kumar Singh (FAC-VF28) (M.Arch.)		Industrial Design, Architecture, Architecture Education
Assistant Professors			
1	Dr. Aaditya Pratap Sanyal, 50240 (PhD)	June 2019	Construction Management, Green Building, Climatology
2	Dr. Rabi Narayan Mohanty, 50269 (PhD)	October 2020	Urban design, heritage management and History of Architecture
3	Dr. Harsimran Kaur 50285 (PhD)	June 2020	Urban Sustainability (in general and specific to hill settlements), Heritage Conservation, Spatial Analytics and Data Visualization
4	Dr. Kumar Abhishek, FAC-VF27 (PhD)	May 2020	Urban & Rural Planning, Industrial Ecology, Social Sustainability
5	Dr. Rewati Raman, FAC-VF29 (PhD)	April 2020	Urban & Rural Planning, Sustainable Development, Bioclimatic Architecture
6	Ar. Renuka Singh FAC-VF24 (M.Arch.)	-	Urban Design, Architectural Design, Affordable Housing, Nature Based Solutions, Conservation
7	Ar. Akhil Nawani FAC-VF23 (M.Arch.)	-	Contemporary Architecture, Architectural History, Participatory Approach

Technical and Non-Teaching Staff

Sl. No.	Name, Qualifications	Designation, Employee No.	Date of appointment in the department
1	Ravi Kumar Sonkar, B.Tech.	Junior Assistant, 50090	25-12-2020
2	Abhishek Tiwari, MBA	Data Entry Operator (Outsourcing)	05-08-2019

Short-term courses/workshops/seminars/symposia/conferences organised by faculty members

Sl. No.	Coordinator	Title	Period
1	Dr. Harsimran Kaur, Ar. Akhil Nawani, Ar. Indra Kumar Singh	'National Online Faculty Development Program' in collaboration with Council of Architecture with title 'Sustainable Hillside Development'	14-02-2022 to 18-02-2022
2	Dr. Harsimran Kaur	Intangible Cultural Heritage for Sustainable Management of Historic Towns in South Asia: Theory to Practice	19-07-2021 to 31-07 2021

Short-term courses/workshops/seminars/symposia/conferences/training programmes attended by faculty members in academic institutions and public sector undertakings

Sl. No.	Name of faculty member	Title	Period and venue
Seminars/Symposia/Conferences			
	Ar. Indra Kumar Singh	Government official training Program 'Augmented & Virtual Reality'	07-03-2022 to 17-03-2022, **Online**
	Aaditya Pratap Sanyal	Prefabricated Volumetric Modular Construction	26-03-2022; UltraTech Cement Ltd. (**Online** Webinar)
	Aaditya Pratap Sanyal	Choosing the right cement based on application	25-03-2022; QCRETE Ready-mix (India) Pvt Ltd. (**Online** Webinar)
	Aaditya Pratap Sanyal	Project Management and Applications of Software	07-03-2022 -11-03- 2022; National Institute of Technical Teachers Training and Research, Chandigarh (**Online**)
	Aaditya Pratap Sanyal	Role of Admixtures in Modern Concrete Construction	12-03-2022; UltraTech Cement Ltd. (**Online** Webinar)
	Aaditya Pratap Sanyal	Inside Story of AAC Blocks	26-02-2022; QCRETE Ready-mix (India) Pvt Ltd. (**Online** Webinar)
	Aaditya Pratap Sanyal	Bridges with external prestressing: Future of Bridge construction in India	26-02-2022; UltraTech Cement Ltd. (**Online** Webinar)
	Aaditya Pratap Sanyal	Achieving Comfort for All-without energy depletion	19 -02-2022; UltraTech Cement Ltd. (**Online** Webinar)
	Aaditya Pratap Sanyal	Durability and Sustainability are the keys to HPC Structures	17-02-2022; QCRETE Readymix (India) Pvt Ltd. (**Online** Webinar)
	Aaditya Pratap Sanyal	Rehabilitation as Nation Building	15-02- 2022; UltraTech Cement Ltd. (**Online** Webinar)
	Aaditya Pratap Sanyal	Defect free Construction Repair and Maintenance	07-02-2022 to 11-02 2022; National Institute of Technical Teachers Training and Research, Chandigarh (**Online**)
	Aaditya Pratap Sanyal	Ecological and Eco-efficient construction practices (EECP-2022)	17-01-2022. -22-01- 2022; Swami Keshvanand Institute of Technology, Management & Gramothan, Jaipur (**Online**)
	Aaditya Pratap Sanyal	Fascinating Story of Cement & Concrete	22-01-2022; UltraTech Cement Ltd. (**Online** Webinar)

Sl. No.	Name of faculty member	Title	Period and venue
	Aaditya Pratap Sanyal	Performance Evaluation of Concrete Road	15-01-2022; UltraTech Cement Ltd. (**Online** Webinar)
	Aaditya Pratap Sanyal	Self-Healing Concrete: Promising New Development in Concrete Technology	8-01-2022; UltraTech Cement Ltd. (**Online** Webinar)
	Aaditya Pratap Sanyal	ICT Enabled Tools in Natural Disaster Management	21-10-2021; Presidency University, Bangalore (**Online**)
	Aaditya Pratap Sanyal	Materials and Methodology for Repair/ / Retrofitting of Structure	25-09-2021; UltraTech Cement Ltd. (**Online** Webinar)
	Aaditya Pratap Sanyal	Green Buildings & Built Environment	02-08-2021 to -06-08 2021; Confederation of Indian Industry (**Online**)
	Aaditya Pratap Sanyal	Writing Impactful Research (WIR)	22-04-2021 -05-08-2021; Sabaragamuwa University of Sri Lanka (**Online**)
	Aaditya Pratap Sanyal	EIA: A Requirement beyond clearance	01-07-2021 to 10-07-2021; Centre for Science and Environment, New Delhi (**Online**)
	Aaditya Pratap Sanyal	Energy and Water Efficiency in Built Environment	28-06-2021, to 02-08- 2021; School of Planning and Architecture, Vijayawada (**Online**)
	Rabi Narayan Mohanty	GIS & REMOTE SENSING, ATAL course	20-9-2021 to 24-09- 2021, NATIONAL POWER TRAINING INSTITUTE-SHIVPURI (M.P.). **Online**
	Rabi Narayan Mohanty	GIS & Remote Sensing, ATAL course	04-10-2021 to 08-10- 2021 at Parvatibai Chowgule College of Arts and Science (Autonomous)., **Online**
	Dr. Harsimran Kaur	Augmented and Virtual Reality under 'Future Skills PRIME' Programme	7-03-2022 to 17-03-2022; C-DAC, Pune **(online)**
	Dr. Harsimran Kaur	Applications of Remote Sensing and GIS	27-12-2021 to 31-12- 2021, ATAL-AICTE, DCRUST, Murthal
	Dr. Harsimran Kaur	Child friendly city in India: inception to execution	22-11-2021 to 26-11- 2021 COA-Training and Research Centre, Bhopal
	Dr. Harsimran Kaur	Circular Economy	22-11-2021 to 24-11-2021 School of Planning and Architecture, Bhopal
	Dr. Harsimran Kaur	Energy Efficient Building Technologies for Hot & Cold Climate	17-11-202 to 18-11 2021 CSIR-Central Building Research Institute, Roorkee Uttarakhand (India)
	Dr. Harsimran Kaur	Sikh Architecture	21-09-2021 SAAKAR Foundation, Chandigarh
	Dr. Harsimran Kaur	Learn and build a career in UI-UX DESIGN	09-08-2021, KAARWAN
	Dr. Harsimran Kaur	Pedagogical Process in Architecture – An Orientation for Young Teaching Fraternity	12-07-2021 to 16-07 2021; AICTE Training and Learning (ATAL) Academy, School of Planning and Architecture Vijayawada (An institute of National Importance).
	Dr. Harsimran Kaur	Advances in Rapid Construction	27-05-2021 to 28-03-2021; CSIR-Central Building Research Institute, Roorkee Uttarakhand (India)
	Dr. Harsimran Kaur	Advanced Course on Green Building Materials	26-04-2021 to 28-04 2021; CSIR-Central Building Research Institute, Roorkee Uttarakhand (India)
	Dr. Rewati Raman	Government Officials Training Program on "Augmented and Virtual Reality" under 'FutureSkills PRIME' Programme	07-03-2021 to 17-03-2022; CDAC Pune
	Ar. Renuka Singh	AICTE Training and Learning (ATAL) Academy Online FDP – "Pedagogical Process in Architecture – An Orientation for Young Teaching Fraternity"	12-07-202 to 16-07-2021 (Online)

Sl. No.	Name of faculty member	Title	Period and venue
	Ar. Akhil Nawani	Circular Economy	22-11-2021 to 24-11-2021; School of Planning and Architecture, Bhopal **[Online]**
	Ar. Akhil Nawani	Augmented and Virtual Reality under 'FutureSkills PRIME' Programme	7-03-2022 to 17-03- 2022 Pune C-DAC, [**Online**]
Meetings			
1	Ar. Indra Kumar Singh	Essential Education for Accelerating Creative Careers	02-02-2022
2	Dr. Harsimran Kaur and Ar. Akhil Nawani	Prospect of a New Youth Mappers chapter in India	9-02-2022 In association with Arizona State University, US and Regional Ambassador, Youth mappers (**Online**)
3	Dr. Harsimran Kaur	e-SYMPOSIUM on INTANGIBLE CULTURAL HERITAGE for sustainable management of HISTORIC TOWNS in South Asia: Theory to Practice.	30-04-2021 National scientific committee of Intangible Cultural Heritage and EPWG,ICOMOS India (**Online**)

Special lectures delivered by faculty members in other institutions

Sl. No.	Name of faculty member	Topic of lecture	Institution	Date
1	Ar. Indra Kumar Singh	'Steps Involved in Architecture Dissertation' via online mode	ADA's Minerva College of Architecture, Pune	08-01-2022
2	Aaditya Pratap Sanyal	Management for Building Rehabilitation	School of Planning and Architecture, New Delhi	27-10-2021
3	Aaditya Pratap Sanyal	Basics of Research in Architecture	IDEAS, Nagpur	11-10- 2021
4	Rabi Narayan Mohanty	Visual Research Methods in Architectural Research	KIIT Deemed to be University Bhubaneswar	22-06-2021
5	Rabi Narayan Mohanty	Earth Architecture Conundrum: Learning from Germany, France and India	IIT Roorkee and RWTH University Aachen, Germany	09-02-2022
6	Dr. Harsimran Kaur	Measuring Urban Sustainability of Hilly Areas	COA-TRC Bhopal	18-02-2022
7	Dr Kumar Abhishek	Understanding Industrial Ecology and its applications towards fostering resilience in industrial towns	NIT Calicut	30-10-2021

Honours and awards

Sl. No.	Name of faculty member	Details of award
1	Dr. Harsimran Kaur	Session Chair: National Conference on "Cities 2050: Planning, Governance and Management Practices" MNIT Jaipur. 23-07-2021 to 24-07-2021

Fellowships of academic and professional societies

Sl. No.	Name of faculty member	Details of fellowship
1	Dr. Aaditya Pratap Sanyal	IGBC-Accredited Professional, Life-time
2	Dr. Aaditya Pratap Sanyal	IGBC-Accredited Faculty, Life-time
3	Dr. Aaditya Pratap Sanyal	GEM-Certified Professional, ASSOCHAM, Life-time
4	Dr. Harsimran Kaur	Indian Institute of Architects
5	Ar. Akhil Nawani	Indian Institute of Architects (IIA), Associate Member (Lifetime) from 23-11-2021
6	Ar. Akhil Nawani	IGBC Accredited Professional

Editorial boards of journals

Sl. No.	Name of faculty member	Position (editor/ member)	Name of journal
1	Dr. Aaditya Pratap Sanyal	Advisory Board	Centre for Construction and Architectural Excellence (CCAE)

Design and Development Activities

New facilities added

Sl. No.	Details (Infrastructure, equipment, etc.)	Value (in lakhs of rupees)
1	Reprographic Facilities (A0 plotter)	Rs. 2.70 Lakhs
2	Security & Surveillance System	Rs. 0.50 Lakhs

Research and Consultancy Sponsored research projects (Ongoing only)

Sl. No.	Title	Period	Funding agency	Amount (in lakhs of Rs.)	Project P.I
1	Traditional Principles of Settlement Planning in Heritage Temple Sites of Odisha / erstwhile Kalinga Region	2 years	AICTE	Rs. 10.00 Lakhs	Rabi Narayan Mohanty

Faculty members' participation with other universities under MoUs (Ongoing only)

1. Dr. Rabi Narayan Mohanty with Prof. Smriti Saraswat of IIT Roorkee, a MoU between IIT (BHU) and IIT Roorkee

Research publications

Total number of papers published in refereed National journals	-
Total number of papers published in refereed International journals	4
Total number of papers presented in National conferences	1
Total number of papers presented in International conferences	-

Refereed International journals

1. Mohanta, A., Das, S., and **Mohanty, R.N.** (2021). Building Envelope Trade-off Method Integrated with BIM-based Framework for Energy-efficient Building. Architectural Engineering and Design Management, 17, 5-6, 516-536, https://doi.org/10.1080/17452007.2021.1941741

2. Kaur H. and Garg P. (2022) Case-based assessment of planned hill town using existing urban sustainability assessment tools. International Journal of Environment, Development and Sustainability. 24: 4412-4433.

3. Kaur H., Singh P., Bivina G.R. and Nawani A. (2021). Qualitative Evaluation of Pedestrian Facilities using the PLOS Model. In IOP Conference Series: Earth and Environmental Science. 775(1):012004).

4. Nawani A. and **Kaur H.** (2021). A Microclimatic Study of Urban Neighbourhood Parks. *IOP Conf. Series: Earth and Environmental Science.* 775(1): 012006.

Proceedings of National conferences

1. Kaur H. and Nawani A. (2021) Ferrocement as Sustainable Building Material at 6th National Convention FERROCEMENT "Precast Ferrocement - Future of Construction Industry" (14-18 November 2021), India organized by Ferrocement Society India.

Distinguished Visitors

Sl. No.	Name of the visitor & designation	Date of visit	Purpose of visit
1	Prof. R. Shankar Former Professor & Head of Department of Architecture and Planning in the Indian Institute of Technology Roorkee	18-02-2022 to 19-02-2022	Interaction with Students & Faculties
2	Prof. V. Shinde Director, Rakhigarhi Archaeological Research Project Former Professor and Vice-Chancellor at the Deccan College	22-02-2022 to 23-02-2022	Provide guidance to faculties about heritage conservation

Any other Information

1. Expert lecture

Sl. No.	Name of Speaker	Topic	Date
1.	Ar. Swayamsiddha Panigrahi, Doctoral scholar, IIT Bombay & NTU Singapore	Visual Arts in India	25-05-2021 **(Online mode)**
2.	Ar. Jay Thakkar, Co-founder and Executive Director at the Design Innovation and Craft Resource Centre (DICRC)	Craft Design Collaboration/Craft Design Innovation framework: from Practice education	09-02-2022 **(Online mode)**
3.	Dr. Kirti Bhonsle Nikam, Associate Professor, IDEAS Nagpur	Hydroponics for Microclimate control in buildings	16-02-2022 **(Online mode)**
4.	Prof. Rana P. B. Singh, retired Professor of Cultural Geography & Heritage Studies at Banaras Hindu University	Cosmic Kashi: Sacred Geography of Banaras- Some Reflections	03-03-2022 **(Online mode)**
5.	Ar. Manjari Sharma Practicing Partner- Architectural Firm (Delhi), Founder LSD, Visiting Faculty, SPA New Delhi, Former Visting Faculty- National Institute of Fashion Technology, New Delhi, Pearl Academy Naraina etc.	Creative Metamorphosis	22-03-2022 **(Online mode)**

Enlistment in expert bodies

1. Nominated as expert heritage body under National Monuments Authority (NMA), Ministry of Culture, Government of India.

2. Design Consultation at IIT-BHU

a. Wall design of Entry foyer, Main Building, IIT-BHU (Ongoing)

b. Hostel sign board Design (Ongoing)

c. All the Signage systems, posters, invitation card, selfie point for Recent Convocation

d. Glow Sign Board & Interior graphics work of recently built Student Activity Centre

e. Sports Complex Lobby and interior spaces (Ongoing)

f. Convocation main backdrop and poster designs 2022 (completed)

g. Ideation, Innovation and Incubation Foundation (I-3) (formerly known as Innovation and Incubation Centre - TIIC) Logo, brochure and poster design (Completed)

h. Landscaping of Academic zone (Ongoing)

Key Instruments:

7. Department of Ceramic Engineering

Complete Name of Department: Department of Ceramic Engineering

Year of Establishment: 1924

Head of the Department: Prof. Vinay Kumar Singh w.e.f. 01.09.2021

Brief Introduction of the Department:

The founder of Banaras Hindu University, Pandit Mandan Mohan Malviyaji instituted courses in Glass and Ceramic Technology as early as 1924 with the noble objective of advancing glass and ceramic technology in India. The Department offers B. Tech, B. Tech - M. Tech. (Dual Degree), M. Tech. and Ph. D. degrees in Ceramic Engineering. M. Tech. and Ph. D. programs are interdisciplinary and are also open to those students of allied branches of Engineering and Sciences, who qualify GATE or NET. Sponsored candidates from industries and R&D organizations are also admitted in the PG Programs. The Department is pursuing active research in the emerging areas of glass, glass ceramics, bio-glass and bio-glass ceramics, refractories, ceramic white-wares, pottery & porcelain, cement, electrical and electronic ceramics. Research papers are being published in reputed national and international Journals regularly.

The Department regularly works in collaboration with Academic and Research institutions, National Laboratories and various Ceramic industries through regular contacts, visits, seminars, symposia, workshops and conferences. The Department has also been rendering technical advice and consultancy to the industries under Industrial Consultancy and Testing Services of the Institute from time to time. The contribution of this very Department of Ceramic Engineering during the past is unparalleled to the entire industrial, research and development and educational areas in the country. The Department is having a number of projects funded by different government and private organizations. For enhancing collaboration with Academic and Research Institutions globally, the Department has MOU with University of Connecticut and Oklahoma USA, to create research and testing facilities for industrial development established IIT (BHU) – IRMA Centre of Excellence for Refractory with participation of Industrial Organizations and to work for technology up-gradation and support for Small and Medium sized ceramic and glass industries created Mahamana Glass and Ceramic Technology Skill Development Centre.

Teaching programs

- 4 Years B. Tech. - Ceramic Engineering
- 5 Years B. Tech. - M. Tech. Dual Degree (IDD), Ceramic Engineering
- 2 Years M. Tech. - Ceramic Engineering
- Ph.D. - Ceramic Engineering

Major areas of Research:

- Glass and Glass Ceramics
- Refractories
- Electrical and Electronic Ceramics
- Cement and Advanced Building Materials
- Bio Ceramics
- Ceramic Micronutrients
- Energy Materials; Fuel cell, Solar cell, and Batteries
- Ceramic Waste Management
- Ultra-High Temperature & Light Weight Ceramics

Area of the Department/School (in square meters): ~5000 m^2

Infrastructure

Sl. No.	Particulars	Number
1	No. of classrooms	2
2	No. of lecture halls	2
3	No. of laboratory	8
4	No. of computers available for students in the Department/School	2

Students on Roll

Sl. No.	Programme	I Year	II Year	III Year	IV Year	V Year & above
1.	B. Tech/B. Arch	71	36	38	35	-
2.	Dual Degree	17	11	10	10	18
3.	M. Tech/ M. Pharm	3	20	-	-	-
4.	Ph. D (Under Institute Fellowship)	5	-	2	9	21
5.	Ph. D (Under Project Fellowship)	-	-	-	1	-
6.	Ph. D (Under Sponsored Category)	-	1	-	-	-

Names of students/scholars who attended conferences/workshops/seminars and symposia abroad or in India

Sl. No.	Name of student	Roll no.	Conference/Seminar/Symposia/ Workshop	Date & venue	Financial assistance from
India					
1	Akanksha Gupta	18031007	3rd International conference (virtual conference) on Advanced Materials for Better Tomorrow (AMBT 2021): Impacting Energy, Health and Environment	13th to 17th July 2021 Jointly with Society for Interdisciplinary Research in Materials and Biology (SIRMB) and IIT(BHU), India.	Self
2	Mukesh Suthar	16031004	Symposium of Magnetism and Spintronics (SMS-2021)	25th – 27th November 2021 at National 3Institute of Science 4Education and Research (NISER), Bhubaneswar, India.	Self
3	Akanksha Gupta	18031007	International virtual conference on advances in ceramic & cement technologies: materials & manufacturing	13th -14th of December 2021 at PDA College of Engineering in Kalaburagi, Karnataka, India.	Self
4	Mukesh Suthar	16031004	International virtual conference on advances in ceramic & cement technologies: materials & manufacturing	13th -14th of December 2021 at PDA College of Engineering in Kalaburagi, Karnataka, India.	Self
5	Satyendra Kumar Singh		International virtual conference on advances in ceramic & cement technologies: materials & manufacturing	13th -14th of December 2021 at PDA College of Engineering in Kalaburagi, Karnataka, India.	Self
6	Vivek Kumar Singh	18031006	1st International Conference on Hydrogen Energy– Policies, Infrastructure, Development and Challenges, Ministry of New & Renewable Energy conference.	24-25 November 2021, SCOPE Convention Centre, Core-8, Lodhi Road, New Delhi	MHRD project

Sl. No.	Name of student	Roll no.	Conference/Seminar/Symposia/ Workshop	Date & venue	Financial assistance from
7	Uttam Sharma	21031004	1st International Conference on Hydrogen Energy– Policies, Infrastructure, Development and Challenges, Ministry of New & Renewable Energy conference.	24-25 November 2021, SCOPE Convention Centre, Core-8, Lodhi Road, New Delhi	MHRD project
Abroad					
1.	Vivek Kumar Singh	18031006	INTERNATIONAL ONLINE SCHOOL "DESIGN, FABRICATION AND APPLICATIONS OF SOLAR ENERGY CONVERSION DEVICES"	1 st - 3 rd, December, 2021, Venue: Online	CoolLongboat consortium project, Norway council of Research
2.	Uttam Sharma	21031004	INTERNATIONAL ONLINE SCHOOL "DESIGN, FABRICATION AND APPLICATIONS OF SOLAR ENERGY CONVERSION DEVICES"	1 st - 3 rd, December, 2021, Venue: Online	CoolLongboat consortium project, Norway council of Research

Faculty & their activities

Faculty and their areas of specialization

Sl. No.	Name, Qualifications, Employee No.	Date of award of PhD Degree	Major Areas of Specialization (Max. 3 Areas)
PROFESSORS			
1	Prof. Vinay Kumar Singh, 17365	1994	Bio-Ceramics, Cements, Dental Materials, Glass, Refractories
ASSOCIATE PROFESSORS			
1	Dr. Anil Kumar, 16730	1991	Glass Technology & Furnaces
2	Dr. M. R. Majhi, 18295	2012	Refractory Technology, Bio Ceramics, Composite Material
3	Dr. P. K. Roy, 19780	2009	Magnetic & ferroelectric ceramics, Size dependent properties of nano materials, Synthesis-structure-property correlation in materials, Refractories, Waste management
4	Dr. Ashutosh Kumar Dubey, 50037	2012	Piezoelectric Biomaterials, Functionally graded materials, Nanoporous bioceramics
ASSISTANT PROFESSORS			
1	Dr. Mohammad Imteyaz Ahmad, 50043	2009	Inorganic photovoltaic materials, Composites, Materials Processing
2	Dr. Preetam Singh,50042	2010	Energy Materials, Rechargeable Battery, Fuel Cells
3	Dr. Santanu Das, 50055	2012	Synthesis and characterizations of various functional nanostructures, including, 2D graphene and transition metal di-chalcogenides (TMDC), CNT, thin-film, quantum dots, plasmon nanoparticles etc. for applications in the field of electronics and optoelectronics, hydrogen energy, light sensor diode, energy storage, sensors, energy generations, and other low-power device applications.
4	Dr. Subrata Panda, 50252	2018	Advanced Materials Processing, Metal Hydrides, Powder Processing, Advanced Ceramics etc.
5	Dr. Kundan Kumar, 50300	2020	High Temperature Ceramics, Nanomaterials Synthesis, Processing and Characterizations, Advanced Ceramics, Materials Chemistry
Senior Scientific Officer			
1.	Dr. Sudama Singh, 18991	1992	Pollution Control and Refractory
2.	Dr. R. K. Chaturvedi, 18989	1991	Corrosion and Glass Nutrients

Technical and Non-Teaching Staff

Sl. No.	Name, Qualifications	Designation, Employee No.	Date of Appointment in the department
1	Shri R. K. Sharma Intermediate	Senior Technical Superintendent Gr II, 16662	22.12.1989
2	Shri Mansha Ram Intermediate	Senior Technical Superintendent 13712	28.05.1987
3	Shri Madan Kumar Intermediate	Senior Technical Superintendent 13710	22.02.1985
4	Shri Pankaj Kumar Singh I ntermediate	Senior Technical Superintendent 18750	15.12.2008
5	Shri Subash Singh Intermediate	Technical Superintendent 13723	15.10.1998
6	Shri Barun Kumar Singh Intermediate	Junior Technical Superintendent 13722	15.10.1998
7	Shri Shiv Jatan Intermediate	Junior Technical Superintendent 14203	12.08.1991
8	Shri Gopal Yadav Intermediate	Junior Technical Superintendent 16213	20.04.1995
9	Shri Raj Kumar Mishra Intermediate	Senior Technician, 18656	05.08.2008
10	Shri Ashish Tripathi, Graduation	Senior Technician,19607	21.07.2012
11	Shri Vinod Kumar High School	Junior Technical Superintendent 13707	16.05.1997
12	Shri Pawan Kumar, Post Graduation	Junior Superintendent 50165	08.08.2017
13	Shri Shailendra Kumar, Post Graduation	Junior Assistant, 50093	08.05.2017

Short-term courses/workshops/seminars/symposia/conferences organised by faculty members

Sl. No.	Coordinator	Title	Period
1	Dr. Preetam Singh, (Member, Organizing Committee)	International Conference on emery material and devices (ICEMD-2022)	11-12 January,2022 Department of Physics, MMV (BHU)
2	Dr. Santanu Das	INTERNATIONAL ONLINE SCHOOL "DESIGN, FABRICATION AND APPLICATIONS OF SOLAR ENERGY CONVERSION DEVICES"	1st - 3rd, December, 2021, Online.

Short-term courses/workshops/seminars/symposia/conferences/training programmes attended by faculty members in academic institutions and public sector undertakings

Sl. No.	Name of faculty member	Title	Period and venue
Seminars/Symposia/Conferences			
1.	Dr. Preetam Singh, (Speaker)	International Conference on emery material and devices (ICEMD-2022)	11-12 January,2022 Department of Physics, MMV (BHU)
2.	Dr. Preetam Singh (Speaker and Panellist)	International exhibition and conference on energy storage, emobility, green hydrogen and microgrids in India	01-06 May 2022, Hotel lalit delhi, India
3.	Dr. Subrata Panda (Speaker)	ECOFEST '21	20th Dec, 2021 TNAU, Coimbatore
4.	Dr. Subrata Panda (Attendee)	FIMTA - 2021	04-06th Aug, 2021 CSIR-IMMT, Bhubaneswar

Special lectures delivered by faculty members in other institutions

Sl. No.	Name of faculty member	Topic of lecture	Institution	Date
1	Ashutosh Kumar Dubey	Piezoelectricity induced cellular and antibacterial response	National Centre for Nanoscience and Nanotechnology, University of Madras (online).	March 10, 2022
2	Ashutosh Kumar Dubey	Functionally Graded Materials	M S Ramaiah Institute of Technology, Bengaluru (online).	July 14, 2022
3	Ashutosh Kumar Dubey	Ferroelectric bioimplants as new generation materials for orthopedic applications	IEEE webinar (UP section)	Sept. 10, 2021.
4	Dr. Pradip Kumar Roy	Ceramic Materials Processing	AICTE Training and Learning (ATAL) Faculty Development Program on 'Processing of Novel Materials' at IIT (BHU), India	23rd September, 2021
5	Dr. Pradip Kumar Roy	Sensors and actuators	Webinar Organized by IEEE Uttar Pradesh Section	4th July, 2021
6	Dr. Santanu Das	Emerging functional nanomaterials for electronic, optoelectronic and energy devices	International Online Conference on Nano Materials (ICN – 2021) Mahatma Gandhi University, Kottayam, Kerala, India	9-11 April 2021,
7.	Dr. Santanu Das	Emerging functional materials and nanomaterials for electronic, optoelectronic and energy devices	Rajkiya Engineering College, Banda	10th July 2021
8.	Dr. Santanu Das	Invited talk: Electrocatalytic Hydrogen Generation: Challenges and Perspectives in Global Scenario	Ministry of New & Renewable Energy, New Delhi	24-25 November 2021
9.	Dr. Santanu Das	Invited talk: Green Hydrogen Production: A New Carbon-Free Chemical Pathway to Next Industrial Revolution	Ministry of New & Renewable Energy, New Delhi	24-25 November 2021
10.	Dr. Santanu Das	Phase transformations in 2D MoS2 for electrocatalytic hydrogen generation	International Online School "Design, Fabrication And Applications Of Solar Energy Conversion Devices"	03rd December 2021
11.	Dr. Santanu Das	Keynote: Two-dimensional hybrid materials for functional applications: New archetypes of nanoscale engineering	IEEE Conference on "IoT for Rural Healthcare 2021" (CIRH 2021) Vignan University, Guntur	December 17th 2021
12.	Dr. Santanu Das	Two-dimensional Functional Materials for Electrochemical Hydrogen Generation	Indo-Norwegian Conference on "Functional materials for energy, environment and biomedical applications" FARAON-2022, Madurai Kamaraj University, Madurai-22, India	02nd to 04th, February 2022

Fellowships of academic and professional societies

Sl. No.	Name of faculty member	Details of fellowship
1	Dr. Preetam Singh	Life Member– Energy Science Society of India (ESSI)
2	Dr. Preeatm Singh	Annual member – American Chemical Society

Books, monographs authored/co-authored

Sl. No.	Name of author/co-author	Title	Publisher
1	S. K. Ghosh, **S. Das**, S. Bhattacharyya;	Recent Advancement in Graphene-Based Metasurface Structures, Low-Dimensional Nanoelectronic Devices: Theoretical Analysis and Cutting-Edge Research, Ed. Angsuman Sarkar and Arpan Deyasi (2021)	Apple Academic Press, Inc.

Editorial boards of journals

Sl. No.	Name of faculty member	Position (editor/ member)	Name of journal
1	Ashutosh Kumar Dubey	**Editorial Board Member: PLOS ONE** journal (I.F. - 3.24, PLOS, California, USA)	**PLOS ONE**
2	Ashutosh Kumar Dubey	**Editorial board member**: Journal of Mineral, Metal and Material Engineering.	Journal of Mineral, Metal and Material Engineering.

Design and Development Activities

Patents filed

Sl. No.	Name of faculty member	Title of patent
1	Das, S., Singh, V. K., Mukherjee, B.,	A Method For Development Of Synergistic Nano Hybrid Structure On Nanorods, Govt. Of India, Patent Application # 202111028517 (2021) Published Online

Research and Consultancy Sponsored research projects (Ongoing only)

Sl. No.	Title	Period	Funding agency	Amount (in lakhs of Rs.)	Project P.I
1	Development of high strength ceramic magnet for rotating machine applications	Oct 2019 To Sept 2022	IMPRINT IIC	35.916	Pradip Kumar Roy
2	Surface charge induced antibacterial and cellular response of Hydroxyapatite-perovskite composites for orthopedic implant applications	2021-24	CST, Govt. of Uttar Pradesh.	10.92/-	Ashutosh Kumar Dubey
3	Development of Nanostructured Bi-functional oxide low Cost electro-catalysts For Sustainable High Energy Density Metal-Air Battery for Electric vehicles	2019-22	SPARC (SPARC/2018-2019/ P1122/SL)	Rs 40 lakh	Dr. Preetam Singh (Co-PI)
4	Metal nanostructure assisted plasmonic hot electron induced phase transformation in 2D-transition metal di-chalcogenides for hydrogen evolution reaction	2020-2023	STARs-MHRD	98 Lakhs	Dr. Santanu Das
5	Development of Ceramic Nitride thin-films for soft x-ray applications	2021-2023	UGC-DAE	45000 INR	Dr. Santanu Das
6	Materials for hydrogen generation by solar water splitting	2020-2024	Research Council of Norway	330000 NOK	Dr. Santanu Das
7	Seasonal Effect on Solar-Driven Photocatalystic Performance in India Environment	2021-2022	Swansea University, UK	5500 GBP	Dr. Santanu Das

Faculty members' participation with other universities under MoUs (Ongoing only)

Dr. Santanu Das: MOU with the Swansea University, UK in the Month of May 2021.

Research publications (From 1st April 2021 to 31st March 2022)

Total number of papers published in refereed National journals	1
Total number of papers published in refereed International journals	47
Total number of papers presented in National conferences	-
Total number of papers presented in International conferences	3

Refereed International journals

1. Yadav M. K., Pandey V., Jyoti, Kumar A., Mohanta K., and **Singh V. K.** (2021) Mechanical and biological behaviour of porous Ti–SiO2 scaffold for tissue engineering application. Ceramics International 47 (15): 22191–22200

2. Gupta, A. and **Roy P. K.** (2022) Study the effect of Bi_2O_3 and sintering temperature on the electromagnetic properties of $SrFe_8Al_4O_{19}$ ceramic for permanent magnet applications, Materials Science & Engineering B 278 115613.

3. Hossain, S. K. S., **Roy, P. K.** and Bae, C-J. (2021) "Utilization of waste rice husk ash for sustainable geopolymer: a review" Construction & Building Materials 310 125218.

4. Verma, P., Singh, P. and **Roy, P. K.** (2021) Influence on properties of $Bi_{0.9}Sm_{0.1}FeO_3$ multiferroic system with Mg substitution at Fe-site, Journal of Solid State Chemistry 302 (2021) 122432.

5. Hossain, S. K. S., Jani, P., **Roy, P. K.** and J. Bera, (2021) Development of dense Sr substituted $CaAl_{12}O_{19}$ (CA_6) ceramics synthesized by sol-gel auto combustion method' Journal of Asian Ceramic Societies 9 (3) 1007–1014.

6. Hossain, S. K. S., Bae, C-J. and **Roy, P. K.** (2021) A replacement of traditional insulation refractory brick by a waste-derived lightweight refractory castable, International Journal of Applied Ceramic Technology 181783–1791.

7. Chakrabarti, C., Fu, Q., Paul, B. K., Chen, X., Zheng, J., Yin, H., Ali, W., Qiu, Y., **Roy, P. K**., Suthar, M. and Yuan S. (2021) Ferromagnetic, dielectric, and ferroelectric characteristis near the morphotropic phase boundary in (1-x)(0.7$BiFeO_3$-0.3$BiNa_{0.5}TiO_3$)-x($CaTiO_3$) solid solution, Ceramic International 47 (14) 20268-20275.

8. Vinaykumar, R., Prakash, S., **Roy, P. K.** and Bera, J. (2021) Synthesis and characterization of $Ba_2Co_2Fe_{12}O_{22}$-$NiFe_2O_4$ ferrite composites: a useful substrate material in miniaturizing antenna, Journal of Materials Science: Materials in Electronics 32 7330–7339.

9. Hossain, S. K. S. and Roy, P. K. (2021) Preparation of multi-layered (dense-porous) light weight magnesium-aluminum spinel refractory, Ceramic International 47(9) 13216-13220.

10. Singh A., Singh P. and **Dubey A. K. (2022)**, Effect of Incorporation of Piezoelectric Phases on Antibacterial and Cellular Response of Borate Bioactive Glass, **Open Ceramics**, 9, 100234.

11. Sugimoto H., Biggemann J., Fey T., Singh P, Khare D., **Dubey A. K.**, and Kakimoto K. (2021), Lead-free piezoelectric (Ba,Ca)(Ti,Zr)O_3 scaffolds for enhanced antibacterial property, **Materials Letters**, 297, 129969.

12. Khare D., Singh A. and **Dubey A. K. (2021)**, Influence of Na and K contents on the antibacterial response of piezoelectric biocompatible $Na_xK_{1-x}NbO_3$ (x = 0.2 - 0.8), **Materials Today Communications**, 27, 102317.

13. Mehta N. S., Dey. S and **Majhi M. R.**(2021) Electro-mechanical characterization of alumina-based porcelain insulator doped with BaTiO3 at high temperature with frequency variation,Journal of Materials Chemistry and Physics(259) 124020

14. K. Dhiraj, Mishra A., Prasad M., RamPyare, and **Majhi M. R.** (2021) Performance analysis of deep bed drying of canola seeds using numerical technique, Journal of Stored Products Research,94,101891.

15. Sharma, U., Karazhanov, S., Jose, R. and **Das, S.** (2022) Plasmonic hot-electron assisted phase-transformation in 2D-MoS_2 for hydrogen evolution reaction: current status and future perspectives, **J. Mater. Chem. A**, **10**, 8626-8655.

16. Ghosh, S. K., **Das, S.** and Bhattacharyya, S.;**(2022)** Terahertz Wave Conversion From Linear to Circular Polarization by Graphene Metasurface Featuring Ultrawideband Tunability, **IEEE Journal of Light Wave Technology, DOI 10.1109/JLT.2022.3156640.**

17. Ling, J., Karuppiah, C., **Das, S.**, Misnon, I. I., Rahim, M. H., Yang, C. and Jose, R. (**2022**) Electrospun Ternary Composite Metal Oxide Fibers as an Anode for Lithium-ion Batteries, **Frontiers in Materials**, **section Ceramics and Glass**, 9, 815204, doi: 10.3389/fmats.2022.815204.

18. Ghosh, S. K., **Das, S.** and Bhattacharyya, S. (**2021**) Graphene-Based Metasurface for Tunable Absorption and Transmission Characteristics in the Near Mid-Infrared Region, **IEEE Transactions on Antennas and Propagation** DOI:10.1109/TAP.2022.3140904.

19. Ghosh, S. K., **Das, S.** andBhattacharyya, S. (**2021**) Graphene-based dual functional metadevice in terahertz gap **Applied Optics** 60(34) 340001-01.

20. Akhter, S., Mohd Zain, N. K., Shalauddin, M. and Singh, V. K.; Misnon, I. I.; Sharma, R. K.; **Das, S.**; Basirun, W. J.; Johan, M. R.; Jose, R., (**2021**)Tri-metallic Co-Ni-Cu based metal-organic framework nanostructures for the detection of an anticancer drug nilutamide **Sensors and Actuators A: Physical** , 325, 112711.

21. Kumar, A. and **Ahmad, Md. I.,** (2022) Role of Defects in the Electronic Properties of Al Doped ZnO Films Deposited by Spray Pyrolysis, **J. Mater Sci. 57**, 7877–7895.

22. Pal, A. S., Lal Das, A. K., Singh, A. Kevin, Knowles, **Ahmad, Md. I.,** and Joysurya Basu, (2022) Evolution of a self-assembled chessboard nanostructure spinel in a CoFeGaMnZn multicomponent oxide, **Phil. Mag.** 102, 1121-1135.

23. Maurya S., Kumar, P., Singh, A., Basu, J. and **Ahmad, Md. I.,** (2021) Nucleation and growth mechanism of wurtzite copper indium disulfide nanoparticles during solution processing, **Ceamic Inter.** 47, 32086-32096.

24. Ankit Singh, Maurya Sandeep Pradeepkumar, Deepak Kumar Jarwal, Satyabrata Jit, Sandip Bysakh, Md. Imteyaz Ahmad, Joysurya Basu, and Rajiv Kumar Mandal, Homogeneous and polymorphic transformations to ordered intermetallics in nanostructured Au-Cu multilayer thin films, **J. Mater Sci.** 56 (2021) 16113–16133.

25. Gautam, A. and **Ahmad, Md. I., (**2021) Low-Temperature Synthesis of Five Component Single Phase High Entropy Oxide, Ceram. Inter. 47 22225-22228.

26. Duhan, S., Sahoo, K. **Ahmad, Md. I.,** Singh, S. K. and Kumar, M. (2021) Chelating agent and substrate effect on hydrothermal growth of Yb3+/Er3+ doped NaYF4 film, **Process. Appl. Ceram.**,15 69-78

27. Aftab A. and **Ahmad, Md. I.,** (2021) A review of stability and progress in tin halide perovskite solar cell, Solar Energy, 216 26-47.

28. Shekhawat, D., **Ahmad, Md. I.** and Roy, P. K. (2021) Investigation on the site preferences & magnetic properties of Co-doped $SrAl_4Fe_8O_{19}$ hexaferrite, **Mater. Chem. Phys.** 259, 124196, https://doi.org/10.1016/j.matchemphys.2020.124196.

29. Sushil, J., Kumar, A., Gautam, A. and **Ahmad, Md. I.,** (2021) High Entropy Phase Evolution and Fine Structure of Five Component Oxide (Mg, Co, Ni, Cu, Zn)O by Citrate Gel Method, **Mater. Chem. Phys**. 259, 124014.

30. Yadav, S., Majumdar S., Ali, A., Krishnamurthy, S. **Singh, P.** and Pyare R. (2021) In-vitro analysis of bioactivity, hemolysis, and mechanical properties of Zn substituted Calcium Zirconium silicate (baghdadite), Ceramics International, 47(11), 16037-16053.

31. Verma, P., **Singh, P.** and Roy, P. K. (2021) Influence on properties of Bi0.9Sm0.1FeO3 multiferroic system with Mg substitution at Fe-site, Journal of Solid State Chemistry, 302, 122432.

32. Mishra, N. K., Mondal R. and **Singh, P.** (2021) Synthesis, characterizations and electrochemical performances of anhydrous CoC_2O_4 nanorods for pseudocapacitive energy storage applications, RSC Adv., 11, 33926–33937.

33. Yadav, A., Pyare, R., Maiyalagan, T. and **Singh, P.** (2021) Synthesis, Characterization, and Ionic Conductivity Studies of Simultaneously Substituted K- and Ga-Doped BaZrO3, ACS Omega, 6, 30327–30334.

34. Mondal, R. Mishra, N. K., Maiyalagan, T., Gupta, A. and **Singh, P.** (2021) La1–xKxFeO3–δ: An Anion Intercalative Pseudocapacitive Electrode for Supercapacitor Application, ACS Omega, 6, 30488–30498.

35. Wang, R., Cheng, X., Yue, S., Jen, T.-C., **Singh, P.** and Wang, Z., (2022) Effect of bonding state of single atom iron on semi-coke on reduction of NO: A DFT study, Chemical Physics Letters,787, 139259.

36. Prajapati, B. K., Anand, A., Gautam, S. and Singh, P., (2022) Production of hydrogen- and methane-rich gas by stepped pyrolysis of biomass and its utilization in IC engines, Clean Technologies and Environmental Policy, https://doi.org/10.1007/s10098-021-02249-y.

37. Singh, A. N., Mondal, R., Rath C. and **Singh, P.,** (2021) Electrochemical Performance of Delafossite, $AgFeO_2$: A Pseudo-Capacitive Electrode in Neutral Aqueous Na_2SO_4 Electrolyte, J. Electrochem. Soc., 168, 120512.

38. Mishra, N. K., Mondal, R., Maiyalagan, T. and **Singh, P.** (2022) Synthesis, Characterizations, and Electrochemical Performances of Highly Porous, Anhydrous Co0.5Ni0.5C2O4 for Pseudocapacitive Energy Storage Applications, ACS Omega, 7(2), 1975–1987.

39. Kumar, S., Ranjeeth, R., Mishra, N. K., Prakash R. and **Singh, P.,** (2022), NASICON-structured Na3Fe2PO4(SO4)2: a potential cathode material for rechargeable sodium-ion batteries, Dalton Trans., 51, 5834–5840.

40. Mondal, R., Ratnawat, H., Mukherjee, S., Gupta, A. and **Singh, P.,** (2022), Investigation of the Role of Sr and Development of Superior SrDoped Hexagonal BaCoO3–δ Perovskite Bifunctional OER/ORR Catalysts in Alkaline Media, Energy Fuels, 36, 3219–3228.

41. Gupta, A., Kushwaha, V., Mondal, R., Singh, A. N., Prakash, R., Mandal K. D. and **Singh, P.,** (2022), SrFeO3-δ: a novel Fe4+- Fe2+ redox mediated pseudocapacitive electrode in aqueous electrolyte, Phys. Chem. Chem. Phys., 24 11066–11078.

42. Yadav, A. Prakash R. and **Singh, P.,** Gd3+ and Bi3+ co-substituted cubic zirconia; (Zr1-x-yGdxBiyO2-δ): a novel high k relaxor dielectric and superior oxide-ion conductor, RSC Adv., 2022, 12, 14551–14561.

43. Mao J, Huang T, **Panda S**, Zou J, Ding W. (2021) Direct observations of diffusion controlled microstructure transition in Mg-In/Mg-Ag ultrafine particles with enhanced hydrogen storage and hydrolysis properties. Chemical Engineering Journal. 418:129301.

44. Yang J, Zhang K, Ma Z, Zhang X, Huang T, **Panda S**, Zou J. (2021) Trimesic acid-Ni based metal organic framework derivative as an effective destabilizer to improve hydrogen storage properties of MgH_2. International Journal of Hydrogen Energy. 46(55): 28134-43.

Refereed National journal

1. Jyoti, Pandey V., Yadav M. K., Mohanta K., and **Singh V. K.** (2022) Green Properties of Dry Pressed Alumina Compact Prepared Using Aloe Vera Gel and Sucrose as a Binder. Trans. Ind. Ceram. Soc. 81(1): 7-14

Proceedings of International conferences

1. S. K. Ghosh, **S. Das**, and S. Bhattacharyya, Graphene-Metal Hybrid Metasurface for Tunable Bandpass Filter in Terahertz Region, 2021 IEEE Indian Conference on Antennas and Propagation (InCAP), 13-16 December 2021 | Malaviya National Institute of Technology, Jaipur.

2. S. K. Ghosh, S. Bhattacharyya, and **S. Das**, A Graphene Based Metasurface for Transmittive-type Linear to Circular Polarization Converter with Tunable Characteristics, URSI GASS 2021, 28th August to 04th September 2021, Rome, Italy. 2.

3. Abhijeet Kumar Singh, Piyush Jaiswal and Preetam Singh, A Review on Transition-metal Oxalate Based Electrode for Supercapacitors, IOP Conf. Series: Materials Science and Engineering, 2021, 1166 (012032), IOP Publishing, doi:10.1088/1757-899X/1166/1/012032.

Other activities

International collaboration/achievements by the Department/School

Collaborative work on hydrogen storage with Dr. Preetam Singh under BRICS proposal

1. Prof. Xingxing Cheng, Shandong University, Jinan 250061, China.
2. Prof. Tien-Chien Jen, University of Johannesburg, Johannesburg 2006, South Africa.

Collaboration for development of Metal-air batteries

1. Prof. Jinwoo Lee, KAIST, South Korea

Key Instruments:

SOPHISTICATED INSTRUMENTS FOR RESEARCH AND DEVELOPMENT

Vita Cacumat Dental Furnace

Vacuum Oven

Vicker's Hardness

Atmoshpheric Control Glove Box

Electrochemical Universal Testing Machine

XRD

8. Department of Chemical Engineering & Technology

Full Name of Department: Department of Chemical Engineering & Technology

Year of Establishment: 1921

Head of the Department: Prof. Vijay Laxmi Yadav **w.e.f.** 01.01.2020

Brief introduction of the Department:

Department of Industrial Chemistry was established in 1921 at Banaras Hindu University. Subsequently, it was renamed as the Department of Chemical Engineering and Technology in 1956. The Department has established several benchmarks of achievements in teaching and research. It modernizes its programmes to impart education in upcoming areas of chemical engineering.

The Department presently offers courses leading to B.Tech., M.Tech. and Ph.D. degrees in Chemical Engineering. The Department also offers courses to IIT(BHU) and Banaras Hindu University. In the new undergraduate curriculum, the department has been entrusted to offer a number of institute level courses either independently or jointly with other departments. The research facilities of the department are utilized not only by other departments of the institute and BHU but also by other teaching institutions and research laboratories.

The floor area of the department is 4,002 sq. meter. The department has 27 laboratories, one workshop, 7 lecture theatres, one 250 seat auditorium, one library having over 11,000 volumes of text and reference books and a textbook bank and high-speed internet facility. The Department also has a seminar room and a few instruction rooms and some rooms for faculty members.

The University Grants Commission, New Delhi has granted the Department the Status of Centre of Advanced Study in Chemical Engineering. The Department also enjoys the status of DST – FIST Sponsored Department.

The Department enjoys an excellent rapport and professional interaction with various industrial organisations. Faculty members are engaged in high level consultancy work in industry, where as some others have projects funded by the industry. Besides these, the Department also provides know-how for process improvement/ development, raw materials and products analysis, pollution monitoring facilities, etc. to the industries in and around Varanasi.

Major areas of Research

Currently major areas of research in the department are waste water treatment, separation processes, catalysis, biotechnology, fuel cell and simulation. The department has identified three major thrust areas for future research as energy, environment and nanotechnology with emphasis on developing affordable solutions for the problems in the country such as drinking water, energy (harvesting, production and storage) and healthcare.

Area of the Department/School (in square meters):

Infrastructure

Sl. No.	Particulars	Number
1	No. of classrooms	07
2	No. of lecture halls	03
3	No. of laboratory	27
4	No. of computers available for students in the Department/School	44

Students on Roll

Sl. No.	Programme	I Year	II Year	III Year	IV Year	V Year & above
1	B. Tech	148	172	145	129	Nil
2	Dual Degree	Nil	Nil	Nil	Nil	Nil
3	M. Tech	48	41	Nil	Nil	Nil
4	Ph. D (Under Institute Fellowship)	11	03	14	09	10
5	Ph. D (Under Project Fellowship)	Nil	Nil	Nil	01	Nil
6	Ph. D (Under Sponsored Category)	01	Nil	Nil	Nil	Nil

Names of students/scholars who attended conferences/ workshops/seminars and symposia abroad or in India

Sl. No.	Name of student	Roll no.	Conference/Seminar/ Symposia/Workshop	Date & venue	Financial assistance from
India					
1	Yogesh Kumar Vishwakarma	18041501	Introduction to artificial intelligence (workshop)	10.01.2022	NA
2	Yogesh Kumar Vishwakarma	18041501	Entrepreneurship Awareness Camp	25.10.2021 to 27.10.2021	NA
3	Vidya Bhushan	19045124	Health 2.0 Conference UAE 2022	23.03.2022 to 25.03.2022 Intercontinental Dubai Festival City, UAE	NA
4	Pranjal Tripathi	18041008	Sustainable Technologies in Water Treatment and Desalination (STWTD-2022)	28.01.2022 to 29.01.2022 NIT Calicut	self
5	Kanhaiya Lal Maurya	18041003	International Conference on Biotechnology for Sustainable Agriculture, Environment and Health (BSAEH-2021)	04.04.2021 to 08.04.2021	N/A
6	Kanhaiya Lal Maurya	18041003	BREEECH-2021 International Conference on Biotechnology for Resource Efficiency, Energy, Environment, Chemicals and Health	01.12.2021 to 04.12.2021	N/A
7	Kanhaiya Lal Maurya	18041003	Research project under transforming systems through partnership workshop	25.09.2021	N/A
8	Ahmad Nawaz	17041501	International Conference on Biotechnology for Sustainable Agriculture, Environment and Health	04.04.2021 to 08.04.2021 MNIT Jaipur	N/A
9	Ahmad Nawaz	17041501	Shaping the Energy Future: Challenges and Opportunities (SEFCO)	27.08.2021 CSIR - Indian Institute of Petroleum, Dehradun, Uttarakhand,	N/A
10	Ahmad Nawaz	17041501	Work shop on Recent Trends in Advanced Oxidation Processes for Waste Water Treatment	25.09.2021 Parul University Vadodara	N/A
11	Ahmad Nawaz	17041501	International Conference on Energy & Advanced Materials	21.10.2021 to 23.10.2021 Jaypee Institute of Information Technology	N/A

Sl. No.	Name of student	Roll no.	Conference/Seminar/ Symposia/Workshop	Date & venue	Financial assistance from
12	Ahmad Nawaz	17041501	International Conference on Recent Trends in Energy Science and Engineering	26.10.2021 to 28.10.2021 Rajiv Gandhi Institute of Petroleum Technology, Jais, Amethi	N/A
13	Ahmad Nawaz	17041501	International Conference on Emerging Green Energy and Technologies and Environmental Sustainability	02.12.2021 Agriculture Engineering College and Research Institute	N/A
14	Ahmad Nawaz	17041501	International Conference on Advanced Materials and Mechanical Characterization	02.12.2021 to 04.12.2021 SRM Chennai	N/A
15	Ahmad Nawaz	17041501	International Virtual Workshop on Bio-electronic Medicine	16.12.2021 IIT(BHU) & IISC Bangalore	N/A
16	Ahmad Nawaz	17041501	3rd International Conference on Sustainable Environment Energy and Construction	16.12.2021 to 17.12.2021 Hindustan Institute of Technology Chennai	N/A
Abroad					
1	Yatharth Verma	18045126	Seminar	11.12.2021 to 19.12.2021 (venue: Zoom meetings)	Japan Science &Technology Agency (JST)

Names of students/scholars who got prizes and awards outside the Institute

Sl. No.	Name of student	Roll no.	Name of prize	Date & venue	Prize awarded by
1	Vidya Bhushan	19045124	Cisco thingQbator Cohort-4 (INR 5 lakh as seed grant for startup MPYG)	17.12.2021	NASSCOM Foundation
2	Rohil Bhavesh Shah	19045135	IBatch Global Competition	October 2021	ShARE and Valeo (French automobile giant)
3	Rohil Bhavesh Shah	19045135	Gold Medal at the Inter IIT Tech Meet 9.0	April 2021	Inter IIT Tech Meet 9.0
4	Rohil Bhavesh Shah	19045135	National winner of the Redseer Hustle 1.0	February 2022	Redseer
5	Rohil Bhavesh Shah	19045135	National winner of Udyami	November 2021	DoMS, IIT Madras
6	Rohil Bhavesh Shah	19045135	National winner of the Learning Unit Presentation	June 2021	ShARE global and Valeo (French automobile giant)
7	Rohil Bhavesh Shah	19045135	Silver Medal at the Inter IIT Tech Meet 10.0	March 2022	Inter IIT Tech Meet 10.0
8	Rohil Bhavesh Shah	19045135	Campus Winner of the Hult prize	February 2022	Hult Prize

Names of scholars/students who won convocation/Institute Day prizes

Sl. No.	Name of Student	Roll No.	Name of prize	Prize awarded by
1	Vandna	19042046	Varanasi Medal for standing First at the M.Tech.	IIT(BHU)
2	Amitesh Panda	17045119	Varanasi Medal for standing First at the B.Tech.	IIT(BHU)
3	Amitesh Panda	17045119	The R.B.G. Modi Medal for standing First at the B.Tech.	IIT(BHU)

Sl. No.	Name of Student	Roll No.	Name of prize	Prize awarded by
4	Amitesh Panda	17045119	Manishi Sharma Memorial Gold Medal for securing First position at B.Tech.	IIT(BHU)
5	Amitesh Panda	17045119	Mrs. Gargi Devi Trivedi Memorial Gold Medal for securing highest marks in B.Tech.	IIT(BHU)
6	Amitesh Panda	17045119	Prof. Y.D. Upadhya Memorial Gold Medal for securing highest CPI at B.Tech.	IIT(BHU)
7	Amitesh Panda	17045119	Dr. R.J. Rathi Financial Award Rs. 1000/= cash for standing First at the B.Tech.	IIT(BHU)
8	Amitesh Panda	17045119	Manishi Sharma Memorial Cash Prize Rs. 2000/= for securing First position at the B.Tech.	IIT(BHU)
9	Agrawal Nisha Mukesh	17045010	Smt. Indira Tripathi Gold Medal for securing highest CPI among the girl students at the B.Tech.	IIT(BHU)
10	Yatharth Verma	18045126	Special Mention	IIT(BHU)

Names of Students/Scholars who went for foreign Internship

Sl. No.	Name of student	Roll No.	Name of the organization	Place of internship	Country	Duration
1	Sakshi Mukesh Alegaonkar	18045128	MITACS Globalink 2021 Fellowship	Western University, London - Ontario,	Canada	13.05.2021 to 04.08.2021
2	Sakshi Mukesh Alegaonkar	18045128	DAAD WISE 2021 Fellowship	University of Gottingen, Gottingen, Germany	Germany	01.07.2021 to 30.09.2021
3	Avinash Verma	18045033	Fintract Global	Virtual mode	UK	15.05.2021 to 12.07.2021
4	Tarandeep Singh Wasu	18045105	Willings Inc.	Virtual mode	Japan	31.05.2021 to 26.07.2021
5	Arijeet Singh	18045026	Fintract Global	Virtual mode	UK	15.05.2021 to 18.7.2021
6	Avishkar Madhurendra Sahai	18045034	Danmarks Tekniske Universitet (DTU)	Virtual mode	Denmark	15.05.2021 to 15.07.2021

Faculty & their activities

Faculty and their areas of specialisation

Sl. No.	Name, Qualifications, Employee No.	Date of award of PhD degree	Major areas of specialization
Professors			
1	Dr. Pradeep Ahuja, Ph.D., 13748	1996	Modeling and Simulation, Thermodynamics and Kinetics
2	Dr. Manoj Kumar Mondal Ph.D., 13749	2004	Environmental Chemical Engineering, Nano-adsorbents/ composites for Wastewater Treatment, Biomass Waste to Energy and Chemicals
3	Dr. Ram Sharan Singh Ph.D., 16729	2007	Chemical Engineering, Environmental Biotechnology, Aerosol particularly black carbon and Its Impact on Environment and Health
4	Dr. Vijay Laxmi Yadav Ph.D., 13745	2002	Transfer Processes, Polymer Technology, Reaction Engineering
5	Dr. Satya Vir Singh Ph.D., 18210	2006	Adsorption, Membrane Separation, Photo catalysis
6	Dr. Hiralal Pramanik Ph.D., 17500	2008	Fuel Cell Technology, Energy Engineering & Pyrolysis of Plastics
Associate Professors			

Sl. No.	Name, Qualifications, Employee No.	Date of award of PhD degree	Major areas of specialization
1	Dr. Bhawna Verma,Ph.D. 18152	2013	Heat Transfer In Narrow Tubes; Biodiesel; Carbon Materials/ Nanocomposites Materials For Enhanced Capacitance
2	Dr. Pradeep Kumar Ph.D.,18479	2008	Wastewater treatment
3	Dr. Rajesh Kumar Upadhyay Ph.D., 50235	2010	Multiphase Flow, Flow measurement techniques, Membrane Reformer, Hydrogen Energy
4	Dr. Manoj Kumar Ph.D., 50027	2009	Smart & Functional Nanomaterials
Assistant Professors			
1	Dr. Durga Prasad A. Ph.D., 18151	2021	Process Modeling, Simulation & Control
2	Dr. Jyoti Prasad Chakraborty Ph.D., 19844	2011	Chemical Reaction Engineering
3	Dr. Sweta, Ph.D., 19770	2012	Environmental Catalysis, Reaction Kinetics, Polymer Blends, Diesel Exhaust Treatment
4	Dr. Ravi Prakash Jaiswal Ph.D., 50025	2008	Colloids and Interfacial Science, Renewable Energy, Industrial Wastewater Treatment
5	Dr. Ankur Verma, Ph.D. 50026	2011	Colloids and interfacial science, instabilities in polymeric thin-films, microfluidics, micro/nano lenses, environmental biotechnology
6	Dr. Vijay Shinde, Ph.D. 50171	2013	Solid state and material chemistry, Heterogeneous catalysis for energy application, sustainability and green chemistry
7	Debdip Bhandary, Ph.D. 50229	2016	Interfacial Science, soft matter, self-assembly, Statistical mechanics, molecular simulation methodology
8	Dr Abir Ghosh, Ph.D. 50261	2018	Complex Fluids, Thin Films, Li-ion Batteries
9	Dr. Sanjay Katheria, Ph.D. 50265	2018	Chemical Engineering
10	Dr. Udita Uday Ghosh, Ph.D. 50273	2018	Chemical Engineering
11	Dr. Nitai Chandra Maji, Ph.D., 50298	2020	Nanomaterials and Colloids, Interfacial catalysis, Thermal fluids

Technical and Non-Teaching Staff

Sl. No.	Name, Qualifications	Designation, Employee No.	Date of Appointment in the department
1	Sri Arvind Kumar M.Sc. (Information Technology)	Sr. Technical Superintendent 14069	22.03.1997
2	Sri Umesh Pratap Singh Intermediate	Technical Superintendent 17688	23.01.2006
3	Sri Ram Chandra Sachiv Intermediate, I.T.I.	Technical Superintendent 14123	28.10.1985
4	Sri Meharman Thapa Intermediate	Technical Superintendent 14126	01.06.1982
5	Sri Arjun Prasad Gond M.A.	Technical Superintendent 14144	05.04.1990
6	Sri Sudhir Kumar Intermediate	Technical Superintendent 14145	21.12.1990
7	Sri Chand Lal, Intermediate, I.T.I	Jr. Technical Superintendent 14140	25.06.1987

Sl. No.	Name, Qualifications	Designation, Employee No.	Date of Appointment in the department
8	Sri Om Prakash Patel Intermediate	Jr. Technical Superintendent 14148	28.09.1993
9	Sri Surendra Kumar Verma Intermediate	Jr. Technical Superintendent 14147	02.06.1994
10	Shri. Murli Dhar Mishra, B.Sc., Diploma in Electrical Engineering	Technical Superintendent 18024	15.01.2007
11	Sri Sudhir Kumar, B.Sc.	Jr. Technical Superintendent 18094	20.02.2007
12	Sri Rajesh Kumar, I.T.I., Diploma	Jr. Technical Superintended 18622	07.08.2008
13	Sri Vinay Kumar, Intermediate, Diploma in Medical Laboratory Technology	Jr. Technical Superintended 18625	05.08.2008
14	Sri Ajay Kumar Pandey, B.A., Desktop Publishing	Jr. Technical Superintended 18623	05.08.2008
15	Sri Shailendra Kumar Upadhyay Intermediate	Jr. Technical Superintended 18629	05.08.2008
16	Sri Raj Kumar, B.Sc., Post Graduate Diploma in Computer Applications	Jr. Technical Superintended 18626	05.08.2008
17	Sri Ankit Kumar, M.Sc. (Information Technology), Advanced Certified Hardware and Network Professional	Jr. Technical Superintended 18627	05.08.2008
18	Sri Dhirendra Kumar Pandey B.A., I.T.I., Diploma	Sr. Technician, 19272	10.02.2011
19	Sri Anand Prakash Upadhyay L.L.B.	Jr. Technician, 11579	25.01.1997
20	Sri Lal Bahadur Ram, B.Sc.	Jr. Technician,19602	11.07.2012
21	Shir Zishan Ahmed, B.Sc.	Jr. Assistant, 50104	09.05.2017

Short-term courses/workshops/seminars/symposia/conferences organised by faculty members

Sl. No.	Coordinator	Title	Period
1	Abir Ghosh, Sanjay Katheria, Debdip Bhandary, Udita Uday Ghosh	A talk series entitled as 'Young Investigator Talks (YIT)'	December 2021 to May 2022

Short-term courses/workshops/seminars/symposia/conferences/training programmes attended by faculty members in academic institutions and public sector undertakings

Sl. No.	Name of faculty member	Title	Period and venue
Seminars/Symposia/Conferences			
1	Prof. Hiralal Pramanik	Technical Webinar on the Theme "Green Hydrogen Imperative for Carbon Neutrality" Organized by Pune Local Centre of The Institution of Engineers (India) under the aegis of Chemical Engineering Division	03.09.2021
2	Dr. J.P. Chakraborty	Energy Conclave	26.03.2022 to 27.03.2022 Department of Economics, Faculty of Social Sciences, BHU
3	Dr. Abir Ghosh	A Shrinking-Core Model for the Degradation of Ni-rich NMC (NMC 811) Electrodes-Core Model for the Degradation of Ni-rich NMC (NMC 811) Electrodes	April 2021 Multiscale Modelling Workshop, The Faraday Institution and Imperial College London, UK

Sl. No.	Name of faculty member	Title	Period and venue
4	Dr. Abir Ghosh	Effect of Oxygen Evolution and Passivation Layer Growth on The Degradation of Ni-rich Cathodes (NMC811) in Li-ion Batteries	August 2021 72nd Annual Meeting of the International Society of Electrochemistry, Jeju Island, Korea
5	Dr. Udita U. Ghosh	Slippery Weissenberg Effect	25th International Congress of Theoretical and Applied Mechanics (ICTAM 2020+1), 22 to 27 August,2021 (with Congress grant)
6	Dr. Rajesh Kumar Upadhyay	International Symposium on Chemical Reaction Engineering (ISCRE)-26	5-8 December 2021, New Delhi
7	Dr. Rajesh Kumar Upadhyay	4th International Conference on Opencast Mining & Sustainability (ICOMS-2021)	13-14 December 2021

Special lectures delivered by faculty members in other institutions

Sl. No.	Name of faculty member	Topic of lecture	Institution	Date
1	Prof. M.K. Mondal	Recent researches on biomass to energy	Harcourt Butler Technical University, Kanpur	10.08.2021
2	Prof. M.K. Mondal	Air Purification for Sustainable Living	Indian Institute of Carpet Technology, Bhadohi	31.05.2021
3	Prof. M.K. Mondal	Biomass conversion into valuable products	National institute of Technology Durgapur	14.06.2021
4	Prof. R.S. Singh	Microbial Fuel Cell (MFC), Advanced Experimental and Simulation Research Trends in Chemical Engineering (AESRTCE - 2022)	NIT Hamirpur	09.01.2022
5	Prof. R.S. Singh	Microbial Fuel Cell (MFC), Waste Technology: Emerging Strategies in Waste Management Solutions	Atal FDP, Dr. Ambedkar Institute of Technology for Handicapped U.P.	23.08.2021 to 27.08.2021
6	Prof. R.S. Singh	Advance Bioremediation Techniques Modern Innovations in Chemical Engineering and Technology (MICET 2021)	HBTU Kanpur	09.08.2021 to 13.08.2021
7	Prof. R.S. Singh	Microbial Fuel Cell (MFC), Water Quality Complication, Restoration and Environmental Conservation of Existing Water Bodies	Civil Engineering Department, Institute of Engineering & Science, Ips Academy	02.08.2021
8	Prof. Hiralal Pramanik	Pyrolysis and in-situ aromatization of waste plastics for the production of fuel oil: A novel approach of plastic waste management	Sardar Valabhbhai National Institute of Technology (SV-NIT), Surat, Gujarat	08.08.2021
9	Prof. Hiralal Pramanik	A novel approach of waste to energy recovery via in-situ aromatization and pyrolysis of waste plastics	Department of Chemical Engineering, Alagappa College of technology, Anna University, Chennai	06.10.2021
10	Prof. Hiralal Pramanik	Sustainable Energy generation from energy materials via Chemical and Electrochemical route	FDP, Department of Chemistry of Ravenshaw University, Cuttack, Odisha	01.11.2021
11	Dr. Bhawna Verma	Production of Biodiesel from Non-Edible Feed Stocks using Immobilized Pseudomonas Cepacia Lipase.	Harcourt Butler Technical University, Kanpur	22.09.2021
12	Dr. Udita Uday Ghosh	Transition from postdoc to an academic position, Young Researchers' Symposium	Indian Institute of Science, Bangalore	29.04.2022 to 30.04.2022

Sl. No.	Name of faculty member	Topic of lecture	Institution	Date
13	Dr. Rajesh Kumar Upadhyay	Role of Computational Fluid Dynamics in Investigating Multiphase Flow Reactors: Challenges and Validation	NIT Hamirpur	9-9-2021
14	Dr. Rajesh Kumar Upadhyay	Hydrogen Generation Technologies	Reliance Industries Limited	12-07-2021
15	Dr. Rajesh Kumar Upadhyay	On-board production of Ultra-pure Hydrogen	GE Aviation, Banglore	01-07-2021
16	Dr. Rajesh Kumar Upadhyay	Optimization of Process Conditions for Production of Hydrogen through Underground Coal Gasification	Northern Coalfields Limited, Singrauli	13-12-2021
17	Dr. Rajesh Kumar Upadhyay	Membrane Reformer for On-site Hydrogen Production	National Thermal Power Corporation	15-12-2021

Honors and awards

Sl. No.	Name of faculty member	Details of award
1	Prof. M.K. Mondal	World ranking of top 2% scientists from India in the field Chemical Engineering as per the latest data and statistics released by Elsevier and Stanford University USA, 2021
2	Prof. M.K. Mondal	Fellow, The Royal Society of Chemistry (London), 2022
	Prof. Hiralal Pramanik	Member of Scientific Advisory Board (SAB) of SDEWES-2021, Dubrovnik, Croatia, October 10-15, 2021
3	Prof. Hiralal Pramanik	Appointed as Ph.D Thesis Examiner at NIT Durgapur
4	Prof. Hiralal Pramanik	Member of National advisory Committee of the conference International Conference titled 'Covid Challenges of Energy and Environment Management for Sustainable Growth of Process Industries' scheduled to be held in Guru Ghasidas Vishwavidyalaya (Central University) Bilaspur (Chhattisgarh) 495009 on September 10-11, 2021
5	Prof. Hiralal Pramanik	Member of Scientific Advisory Board (SAB) of SDEWES 2022, Vlore, Albania, May 22-26, 2022.

Fellowships of academic and professional societies

Sl. No.	Name of faculty member	Details of fellowship
1	Prof. Hiralal Pramanik	Awarded I have been granted Fellow of The Institution of Engineers (India) and placed in CHEMICAL ENGINEERING Division on dated 08-Jun-2021. Life (Membership No: F-1278548)
2	Dr. Durga Prasad A.	IIChE LIFE MEMBERSHIP (LM 27330)

Books, monographs authored/co-authored

Sl. No.	Name of author/co-author	Title	Publisher
1	Dr. M. Ram, Prof. M.K. Mondal	Biomass gasification: a step towards cleaner fuel and chemicals	Elsevier
2	Dr. G.K. Gupta, Prof. M.K. Mondal	Pyrolysis: an alternative approach for utilization of biomass into bio-energy generation	Elsevier
3	Dr. R. Bala, Prof. M.K. Mondal	Opportunities and challenges in industrial production of biofuels	Elsevier
4	Ms. N. Agnihotri, Prof. M.K. Mondal	Catalytic pyrolysis for upgrading of biooil obtained from biomass	Elsevier

Sl. No.	Name of author/co-author	Title	Publisher
5	Sonwani, Ravi Kumar; Jaiswal, Ravi Prakash; Rai, Birendra Nath; Singh, Ram Sharan	Moving bed biofilm reactor-(MBBR) based advanced wastewater treatment technology for the removal of emerging contaminants	Book: Development in Wastewater Treatment Research and Processes, Elsevier
6	Chaturvedi, Anuj; Singh, Ram Sharan; Jaiswal, Ravi Prakash	Hybrid bioreactor in combination with ozone-based technologies for industrial wastewater treatment	Book: Development in Wastewater Treatment Research and Processes, Elsevier
7	Kumar, Mohit; Swain, Ganesh; Sonwani, Ravi Kumar; Singh, Ram Sharan; Verma, Ankur; Rai, Birendra Nath	Effect of operating parameters on photocatalytic degradation of dyes by using graphitic carbon nitride	Photocatalytic Degradation of Dyes: Current Trends and Future Perspectives, Elsevier
8	Chaturvedi, A., Singh, R.S., and Jaiswal, R.	Chapter 27 - Hybrid bioreactor in combination with ozone-based technologies for industrial wastewater treatment	Elsevier: Removal of Emerging Contaminants from Wastewater Through Bio-nanotechnology, pg. 629-650 (2021)
9	Pragya Bharti, Sanya Vema, Manoj Kumar, G.L. Devnani	Thermal stability of polymer composite reinforced with bast fibres, Chapter- Bast Fibbers and their composites-Processing, Properties and Applications,	Springer Nature, Singapore (Book chapter)
10	Rajesh Kumar Upadhyay	Steam Reforming Catalysts for Membrane Reformer	Springer Nature

Editorial boards of journals

Sl. No.	Name of faculty member	Position (editor/ member)	Name of journal
1	Prof. M.K. Mondal	Member Editorial board	Biomass Conversion and Biorefinery Springer
2	Dr. Durga Pradad A.	Reviewer	Iranian Journal of Chemical Engineering

Design and Development Activities

New facilities added

Sl. No.	Details (Infrastructure, equipment, etc.)	Value (in lakhs of rupees)
1	Installation of Quantum Efficiency Measurement Facility	38.0
2	Infrastructure created for research on Unitized regenerative fuel cell for the production of ultrapure hydrogen, oxygen and electricity funded by SERB. Equipment procured: Hydrogen Storage, Solar Panel (Procured this year 2021); Autoclave reactor, digital mass flow controller, Fuel cell stack hardwares with temperature controller and humidifier, DC electronic load (Procured last year 2020).	22.0
3	Solar Simulator	6.0
4	Procured New Equipment like High heating rate split tube furnace for research on Novel integrated engineering approach for effective tar decomposition and its last-minute removal to fuel gas reforming in biomass pyro-gasification funded by SERB	5.0
5	High-performance workstations	4.0
6	Bio safety hood	3.0
7	CPU-based Workstations – 01 (Intel Xeon W-2245, 8 Cores, 3.9 GHz, 128 GB DDR4 ECC 2666MHz, 4 TB HDD)	2.4
8	Laminar Air Flow Cabinet (Q3, OLSC-113-4, Ocean Life Sciences Corporation)	1.9
9	Safety detectors	1.2
10	Gas cylinders	1.2

Sl. No.	Details (Infrastructure, equipment, etc.)	Value (in lakhs of rupees)
11	High temperature furnaces	1.0
12	Cold Water Circulator	1.0
13	Dip coater (Navson Technologies)	1.0
14	Programmable Spin Coating System – 01 (spinNXG-P1, Apex Instruments Co. Pvt. Ltd.)	0.8
15	Natural Draft Tray Dryer	0.8
16	Rotary Vacuum Evaporator	0.6
17	Ultrasonicator bath, magnetic stirrer with hot plate.	0.5

Patents filed

Sl. No.	Name of faculty member	Title of patent
1	Dr. Manoj Kumar	Development of water soluble highly biocompatible white light emitting metallic Mg nanocluster and the product thereof

Research and Consultancy Sponsored research projects (Ongoing only)

Sl. No.	Title	Period	Funding agency	Amount (in lakhs of Rs.)	Project P.I.
1	Novel integrated engineering approach for effective tar decomposition and its last-minute removal to fuel gas reforming in biomass pyro-gasification	2020-2023	SERB, Govt. of India	35.63	Prof. M.K. Mondal
2	Novel integrated engineering approach for effective carbon dioxide removal using biphasic amine blends for coal-based thermal power plant	2021-2024	SERB, Govt. of India	21.67	Prof. M.K. Mondal
3	SPARC Project	2018-2021	Ministry of Human Resource Development	72.00	Prof. R.S. Singh
4	Regional Characterization of Atmospheric Aerosol at Varanasi Region	2019-2022	Vikram Sarabhai Space Center (VSSC), ISRO	30.00	Prof. R.S. Singh
5	A Stack Development of Unitized Regenerative Proton Exchange Membrane Fuel Cell for Large Scale Production of Ultra-Pure Hydrogen Fuel, Oxygen Using Solar Energy and Uninterrupted Power	2019-2022	SERB, Govt. of India	37.615	Prof. H. Pramanik
6	Study the bioCNG production potential of different feedstocks	2021-2023	TBBPL, Gorakhpur	5.9	Dr. JP Chakraborty
7	Production of high-purity biomethane from anaerobic digestion of biomass	2021-2023	TBBPL, Gorakhpur	1.2	Dr. JP Chakraborty
8	Investigation on Hydrogels and Development of Multi-Responsive Polymers for Healthcare Applications	2022-2023	Science and Engineering Research Board	22.14	Dr. Debdip Bhandary
9	Preparation of Dense Pd/PdAlloy Membrane and Optimization of Multi-Pass Membrane Separator to Separate Ultra-Pure Hydrogen for Onsite Application	2021-2023	SERB	42.576	Dr. Rajesh Kumar Upadhyay
10	Investigation of Flow Behavior of Pulsed Sieve Plate Column through Radiotracer Based Techniques	2018-2021	BRNS	33.755	Dr. Rajesh Kumar Upadhyay

Industrial consultancy projects (Ongoing only)

Sl. No.	Name of faculty member	Title	Industry	Amount (in lakhs of Rs.)
1	Dr. Pradeep Kumar	Inspection of Gross polluting Industries (GPI's) for compliance Verification situated in Ganga Basin	Central Pollution Control Board	67.30425
2	Dr. Rajesh Kumar Upadhyay	Development of Natural Gas Based Membrane Reformer for Fuel Cell Grade Hydrogen Production	GAIL (India) Limited	125

Research publications

Total number of papers published in refereed National journals	01
Total number of papers published in refereed International journals	69
Total number of papers presented in National conferences	05
Total number of papers presented in International conferences	07

Refereed International journals

1. Morgan L., Islam M., Yang H., O'Regan K., Patel A., Ghosh A., Kendrick E., Marinescu M., Offer G.J., Morgan B., Islam M.S., Edge J., and Walsh A. (2022) From Atoms to Cells: Multiscale Modelling of $LiNi_xMn_yCo_zO_2$ (NMC) Cathodes for Li-ion Batteries. ACS Energy Letters. 7(1): 108-122.

2. Maurya K. L., Swain G., Sonwani R. K., Verma A. and Singh R. S. (2022) Biodegradation of Congo red dye using polyurethane foam-based biocarrier combined with activated carbon and sodium alginate: Batch and continuous study. Bioresource Technology. 351: 126999.

3. Singh N., Verma A., Sachan P., Sharma A. and Kulkarni M. M. (2021) Self-Organized Wrinkling in Thin Polymer Films Under Solvent -non-solvent Solutions: Patterning Strategy for Microfluidic Applications. ACS Applied Polymer Materials. 3(12): 6198-6206.

4. Maurya K.L., Swain G., Sonwani R.K., Verma A., Singh R.S. (2021) Bioremediation of Congo red in an anaerobic moving bed bioreactor: Process optimization and kinetic modelling. Bioresource Technology Reports. 16: 100843 (1-8).

5. Mishra S., Kulkarni M. M., Verma A. (2021) High-Resolution Imaging and Fast Number Estimation of Suspended Particles using Dewetted Polymer Microlenses in a Microfluidic Channel. Micron. 151: 103148(1-6).

6. Das T. and Verma B. (2021) Novel S-doped polyaniline@CuCo2O4–carbon composites and optimization of their weight ratios on the basis of their electrochemical activities, Polymer-Plastics Technology and Materials, 61(5) 516-531.

7. Das T. and Verma B. (2022) Facile synthesis of bimetallic CuFe2O4 based ternary hybrid composites for supercapacitor electrodes and optimization of weight ratio of the individuals on the basis of their electrochemical performances, Materials Technology, DOI: 10.1080/ 10667857. 2022. 2046928

8. Das, T., & Verma, B. (2022) Optimization of weight ratios of the components in polyaniline-based composites on the basis of their electrochemical performances. International Journal of Polymer Analysis and Characterization 27(1), 1-15

9. Verma S., Pandey V.K. and Verma B. (2022) Facile synthesis of graphene oxide-polyaniline-copper cobaltite (GO/ PANI/ CuCo2O4) hybrid nanocomposite for supercapacitor applications, Synthetic Metals, 286,117036

10. Sonker V.K., Chakraborty J.P., Sarkar A. (2022) Development of a frugal solar still using phase change material and nanoparticles integrated with commercialization through a novel economic model. Journal of Energy Storage. 51: 104569

11. Chaudahary, S., Rai R.N., Sahoo K., Kumar M. (2022) Forecast of Phase diagram from synthesis of complex worth for the detection Cr6+ ions, ACS Omega, 2022, 7(9), 7460–7471. DOI:10.1021/acsomega.1c042820

12. Mishra R.K., Kumar P. (2022) Studies of physicochemical properties, kinetic behaviour and thermal degradation profile of waste bio-crude derived from slow pyrolysis in a nitrogen atmosphere Bio resource Technology Reports, 17: 100984

13. Nawaz A., Kumar P. (2022) Elucidating the bioenergy potential of raw, hydrothermally carbonised and torrefied waste Arundo donax biomass in terms of physicochemical characterisation, kinetic and thermodynamic parameters Journal of Renewable Energy, 187: 844-856

14. Mishra R.K., Mohanty K., Kumar V., Kumar P. (2022) Hydrothermal liquefaction of biomass for bio-crude production: A review on variety of feedstocks, chemical compositions, operating parameters, reaction kinetics, techno-economic study, and life cycle assessment Fuel 316: 123377

15. Nawaz A., Mishra R.K., Sabbarwal S., Kumar P. (2021) Studies of physicochemical characterization and pyrolysis behavior of low-value waste biomass using Thermogravimetric analyzer: Evaluation of Kinetic and Thermodynamic Parameters Bioresource Technology Reports,16:100858

16. Nawaz A., Kumar P. (2021) Pyrolysis of mustard straw: Evaluation of optimum process parameters, kinetic and thermodynamic study Journal of Bioresource Technology, 340: 125722

17. Nawaz A., Singh B., Kumar P. (2021) H3PO4 modified Lagerstroemia Speciosa seed hull biochar for toxic Cr(VI) removal: Isotherm, kinetics and thermodynamic study Journal of Biomass Conversion and Biorefinery, (https://doi.org/10.1007/s13399-021-01780-8)

18. Nigam M., Kumar P., Rajoriya S., Saharan V.K., Singh S.R., (2021) Catalytic thermal treatment (Thermolysis) process of tannery wastewater for the removal of COD and color Journal of Desalination and Water Treatment, 218: 372-380.

19. Singh B., Kumar P. (2021) Heat transfer enhancement in pulsating heat pipe by alcohol-water based self-rewetting fluid Journal of Thermal Science and Engineering Progress, 22 : 100809.

20. Yadav D., Rangabhashiyam S., Verma P., Singh P., Devi P., Kumar P., Hussain C.M., Gaurav G.K., Kumar K.S. (2021) Environmental and Heath Impact of Contaminants of Emerging Concerns: Recent Treatment Challenges and Approaches Chemosphere 272: 129492

21. Singh B., Kumar P. (2021) In-depth analyses of kinetics, thermodynamics and solid reaction mechanism for pyrolysis of hazardous petroleum sludge based on is conversional models for its energy potential Journal of Process Safety and Environmental Protection, 146: 85-94

22. Chaturvedi A., Rai B.N., Singh R.S., and Jaiswal, R. (2021) Comparative Toxicity Assessment using Plant and Luminescent Bacterial Assays after Anaerobic Treatments of Dyeing Wastewater in a Recirculating Fixed Bed Bioreactor. Journal of Environmental Chemical Engineering. 9 (4), 105466.

23. Dhara, T., Ghosh, U.U., Ghosh, A., Vishnugopi, S.B., Mukherjee, P.P., DasGupta, S. (2022) Mechanistic Underpinnings of Morphology Transition in Electrodeposition under the Application of Pulsatile Potential. Langmuir, 38, 16, 4879–4886

24. Chandra, N., Ghosh, U.U., Saha, A., Kumar, A. (2022) Rod climbing effect modulated by the three-phase contact line behavior. Bulletin of the American Physical Society, APS March Meeting 2022

25. Dhara, T., Ghosh, U. U., Ghosh, A., Mukherjee, P.P., Dasgupta, S. (2021) An innovative approach to suppress dendrite formation during the charging of a battery, 3rd International Conference on Advanced Materials for Better Tomorrow, Varanasi, India. (Best poster award)

26. Choudhary A.K., Pramanik, H. (2021) Optimization and validation of process parameters via RSM for minimizing use of resources to generate electricity from a DEFC" International J of Energy Research, DOI: https://doi.org/10.1002/er.7126;

27. Panjiara D, Pramanik, H. (2021) Study on the effect of calcium hypochlorite and air as mixed oxidant and a synthesized low cost Pd-Ni/C anode electrocatalyst for electrooxidation of glycerol in an air breathing microfluidic fuel cell. Canadian J of Chemical Engineering, DOI: 10.1002/cjce.24107.

28. Verma A., Sharma S., Pramanik, H. (2021) Pyrolysis of waste expanded polystyrene and reduction of styrene via in-situ multiphase pyrolysis of product oil for the production of fuel range hydrocarbons. Waste Management, 120; 330–339

29. Panjiara D., Pramanik H. (2021) Synthesis of Pd and Pt Based Low-Cost Bimetallic Anode Electrocatalyst for Glycerol Electrooxidation in Membraneless Air Breathing Microfluidic Fuel Cell. J of Electrochemical Science & Tech, 12(1); 38-57.

30. Agnihotri N.N., Gupta G.K., Mondal M.K. (2022) Thermo-kinetic analysis, thermodynamic parameters and comprehensive pyrolysis index of Melia azedarach sawdust as a genesis of bioenergy. Biomass Conversion and Biorefinery. https://doi.org/10.1007/s13399-022-02524-y. Springer Nature.

31. Kannaujiya M.C., Gupta G.K., Mandal T., Mondal M.K. (2022) Adsorption of Acid Yellow 2GL dye from simulated water using brinjal waste. Biomass Conversion and Biorefinery. https://doi.org/10.1007/s13399-021-02131-3. Springer Nature.

32. Prajapati A.K., Verma P., Singh S., Mondal M.K. (2022) Adsorption-desorption surface bindings, kinetics, and mass transfer behavior of thermally and chemically treated great millet husk towards Cr(VI) removal from synthetic wastewater. Adsorption Science & Technology. https://doi.org/10.1155/2022/3956977.Hindawi, SAGE publishing.

33. Singh M., Rano S., Roy S., Mukherjee P., Dalui S., Gupta G.K., Kumar S., Mondal M.K. (2022) Characterization of organophosphate pesticide sorption of potato peel biochar as low-cost adsorbent for chlorpyrifos removal. Chemosphere 2022.https://doi.org/10.1016/j. chemosphere.134112. Elsevier Ltd.

34. Prajapati A.K., Mondal M.K. (2021) Green synthesis of Fe3O4-onion peel biochar nanocomposites for adsorption of Cr(VI), methylene blue and congo red dye from aqueous solutions. Journal of Molecular Liquids 2021. https://doi.org/10.1016/j.molliq.2021.118161. Elsevier B.V.

35. Kannaujiya M.C., Kumar R., Mandal T., Mondal M.K. (2021) Experimental investigations of hazardous leather industry dye (Acid Yellow 2GL) removal from simulated wastewater using a promising integrated approach. Process Safety and Environmental Protection; 155: 444–454. Elsevier B.V.

36. Dave A., Gupta G.K., Mondal M.K. (2021) Study on thermal degradation characteristics, kinetics, thermodynamic, and reaction mechanism analysis of Arachis hypogaea shell pyrolysis for its bioenergy potential. Biomass Conversion and Biorefinery. https://doi.org/10.1007/s13399-021-01749-7. Springer Nature.

37. Singh S., Prajapati A.K., Chakraborty J.P., Mondal M.K. (2021) Adsorption potential of biochar obtained from pyrolysis of raw and torrefied Acacia nilotica towards removal of methylene blue dye from synthetic wastewater. Biomass Conversion and Biorefinery. https://doi.org/10.1007/s13399-021-01645-0. Springer Nature.

38. Prajapati A.K., Mondal M.K. (2021) Novel green strategy for CuO–ZnO–C nanocomposites fabrication using marigold (Tagetes spp.) flower petals extract with and without CTAB treatment for adsorption of Cr(VI) and Congo red dye. Journal of Environmental Management; 290: 112615. Elsevier B.V.

39. Kumar M., Prasad D., Mondal M.K. (2021) Adsorption analysis of Zn (II) removal from aqueous solution onto Argemone maxicana biochar. Biomass Conversion and Biorefinery. https://doi.org/10.1007/s13399-021-01405-0. Springer Nature

40. Pandey D., Mondal M.K. (2021) Viscosity, density, and derived thermodynamic properties of aqueous 2-(ethylamino)ethanol (EAE), aqueous aminoethylethanolamine (AEEA), and its mixture for post-combustion CO2 capture. Journal of Molecular Liquids; 332: 115873. Elsevier B.V.

41. Giri B.S., Sonwani R.K., Varjani S., Chaurasia D., Varadavenkatesan T., Chaturvedi, P., Yadav S., Katiyar V., Singh R.S., Pandey A. (2022) Highly efficient bio-adsorption of Malachite green using Chinese Fan-Palm Biochar (Livistona chinensis) Chemosphere287(4)

42. Singh N., Mhawish A., Banerjee T., Ghosh S. Singh R.S., Mall R.K. (2021) Association of aerosols, trace gases and black carbon with mortality in an urban pollution hotspot over central Indo-Gangetic Plain Atmospheric Environment 246

43. Kapoor R., Thapar D., Mohammed, Singh R.S., Rafatullah, Mohd., HPS, Khalil A. (2021) Exploiting microbial biomass in treating azo dyes contaminated wastewater: Mechanism of degradation and factors affecting microbial efficiency Journal of Water Process Engineering 43

44. Shahi A., Chellam P.V., Verma A., Singh R.S. (2021) A comparative study on the performance of microbial fuel cell for the treatment of reactive orange 16 dye using mixed and pure bacterial species and its optimization using response surface methodology Sustainable Energy Technologies and Assessments 48

45. Swain G., Sonwani R.K., Singh R.S., Jaiswal R.P., Rai B.N. (2021) A comparative study of 4-chlorophenol biodegradation in a packed bed and moving bed bioreactor: Performance evaluation and toxicity analysis Environmental Technology & Innovation 24

46. Sonwani R.K., Pandey S., Yadav S.K., Giri B.S., Katiyar V., Singh R.S., Rai B.N. (2021) Construction of integrated system for the treatment of Acid orange 7 dye from wastewater: Optimization and growth kinetic study Bioresource Technology 337 2021

47. Vishwakarma Y.K., Tiwari S., Mohan D., Singh R.S. (2021) A review on health impacts, monitoring and mitigation strategies of arsenic compounds present in air Cleaner Engineering and Technology 3

48. Ram K., Thakur R.C., Singh D.K., Kawamura K., Shimouchi A., Sekine Y., Nishimura H., Singh S.K., Pavuluri C.M., Singh, R.S. (2021) Why airborne transmission hasn't been conclusive in case of COVID-19? An atmospheric science perspective Science of the Total Environment 773

49. Sonwani R.K., Swain G., Jaiswal R.P., Singh R.S., Rai B.N. (2021) Moving bed biofilm reactor with immobilized low-density polyethylene–polypropylene for Congo red dye removal Environmental Technology & Innovation 23

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51. Chaturvedi A., Rai B.N., Singh R.S., Jaiswal R.P. (2021) A Computational Approach to Incorporate Metabolite Inhibition in the Growth Kinetics of Indigenous Bacterial Strain Bacillus subtilis MN372379 in the Treatment of Wastewater Containing Congo Red Dye Applied Biochemistry and Biotechnology, 193(7), 2128-2144 193 2128-2144

52. Gautam R.K., Goswami M., Mishra R.K., Chaturvedi P., Awashthi M.K., Singh R.S., Giri B. S., Pandey A. (2021) Biochar for remediation of agrochemicals and synthetic organic dyes from environmental samples: a review Chemosphere 272

53. Giri B.S., Geed S., Vikrant K., Lee S.S., Kim Ki-H., Kailasa S.K., Vithanage M., Chaturvedi P., Rai B.N., Singh R.S. (2021) Progress in bioremediation of pesticide residues in the environment Environmental Engineering Research 26(6)

54. Prasad D., Srivastav A., Pandey D., Azad Khan, M., Kumar M., Singh R.S. (2021) System Identification and Design of Inverted Decoupling IMC PID Controller for Non-Minimum Phase Quadruple Tank Process Iran. J. Chem. Chem. Eng. Research Article 40(3) 990-1000

55. Shahi A., Chellam P.V., Singh R.S., Verma A. (2021) Biodegradation of reactive red 120 in microbial fuel cell by Staphylococcus equoruma RAP2: Statistical modelling and process optimization Journal of Water Process Engineering 40

56. Dave N., Varadavenkatesan T., Singh R.S., Giri B.S., Selvaraj R., Vinayagam R. (2021) Evaluation of seasonal variation and the optimization of reducing sugar extraction from Ulva prolifera biomass using thermochemical method Environmental Science and Pollution Research 28 58857–58871

57. Swain G., Sonwani R.K., Singh R.S., Jaiswal R.P., Rai B.N. (2021) Removal of 4-Chlorophenol by Bacillus flexus as free and immobilized system: Effect of process variables and kinetic study Environmental Technology & Innovation 4

58. Swain G., Singh S., Sonwani R.K., Singh R.S., Jaiswal R.P., Rai B.N. (2021) Removal of Acid Orange 7 dye in a packed bed bioreactor: Process optimization using response surface methodology and kinetic study Bioresource Technology Reports 13

59. Chaturvedi A., Rai B.N., Singh R.S., Jaiswal R.P. (2021) A comprehensive review on the integration of advanced oxidation processes with biodegradation for the treatment of textile wastewater containing azo dyes Reviews in Chemical Engineering 576 201-207

60. Singh N., Banerjee T., Murari V., Deboudt K., Khan, Md. F., Singh R.S., Latif Md. T. (2021) Insights into size-segregated particulate chemistry and sources in urban environment over central Indo-Gangetic Plain Chemosphere 263

61. Swain G., Sonwani R.K., Giri B.S., Singh R.S., Jaiswal R.P., Rai B.N. (2021) A study of external mass transfer effect on biodegradation of phenol using low-density polyethylene immobilized Bacillus flexus GS1 IIT (BHU) in a packed bed bioreactor Water and Environment Journal 35(1)

62. Gond D.K., Dixit S., Kumar P., Mishra P.K., Yadav V.L. (2022) Pervaporation Separation of Toluene-Heptane Mixtures with Polyvinyl chloride/Alumina/Activated Carbon Membranes Journal of Scientific and Industrial Research (JSIR), volume 81, Jan 22, pp 118-124

63. Neha, Prasad R., Singh S.V. (2021) Simultaneous catalytic oxidation of CO and diesel soot over LaCoO3 perovskite Materials Letters 129588

64. Neha, Prasad R., Singh S.V. (2021) Influence of calcination atmospheres on the physicochemical properties and catalytic activity of Ni1Co1Ox catalyst for CO oxidation. Asia-Pacific Journal of Chemical Engineering 16 (2)

65. Kumar S., Alam I., Kushwaha A.K., Kumar M., Singh S.V. (2021) Investigating the theoretical performance of Cs2TiBr6-based perovskite solar cell with La-doped BaSnO3 and CuSbS2 as the charge transport layers. International Journal of Energy Research, 1-20

66. Neha, Singh S.V. (2022) Facile and template-free synthesis of nano-macroporous LaCoO3 perovskite oxide for efficient diesel soot oxidation. Reaction Kinetics, Mechanisms and Catalysis https://doi.org/10.1007/s11144-022-02219-5

67. Mishra S., Upadhyay (2021) Review on biomass gasification: gasifiers, gasifying mediums, and operational parameters. Materials Science for Energy Technologies 4, 329-340

68. Sharma R., Kumar A., Upadhyay R.K. (2021) Characteristics of a multi-pass membrane reactor to improve hydrogen recovery. International Journal of Hydrogen Energy 46 (7), 14429-14440

69. Biswal J., Goswami S., Upadhyay R.K., Pant H.J. (2021) Methods of preparation of microparticles for radioactive particle tracking experiments. Applied Radiation and Isotopes 168, 109380-109388

Refereed National journal

1. Nawaz A., Singh B., Kumar P. (2021) Efficient removal of Cr (VI) using raw and phosphoric acid modified Sterculia Alata nutshell, Indian Journal of Chemical Technology, vol.28 : 684-692

Proceedings of International conferences

1. Nawaz A., Kumar P. (2022) Efficient removal of Cr (VI) using raw and phosphoric acid modified Sterculia Alata nutshell, International Conference on Desalination and Water Treatment: Recent Technological Advancement, Challenges and Opportunities & Annual Congress of Indian Desalination Association held on 26 – 27 March, 2022 organized by MBM University Jodhpur

2. Nawaz A., Kumar P. (2021) Pyrolysis of S. bispinosa into renewable fuel and value-added chemicals, 3rd International Conference on Sustainable Environment Energy and Construction held on 16-17 Dec, 2021 organized by Hindustan Institute of Technology, Chennai

3. Nawaz A., Kumar P. (2021) Pyrolysis potential of three different types of waste straws, International Conference on Emerging Green Energy and Technologies and Environmental Sustainability held on 02 Dec, 2021organized by Agriculture Engineering College and Research Institute, Coimbatore, Tamil Nadu

4. Nawaz A., Kumar P. (2021) Elucidating the Bioenergy Potential of L. Specioca Seed Hull on the Basis of Pyrolysis Kinetics, Thermodynamics and Process Parameter Optimization, International Conference on Recent Trends in Energy Science and Engineering held on 26 – 28, October, 2021 organized by Rajiv Gandhi Institute of Petroleum Technology, Jais, Amethi

5. Nigam M., Kumar P., Upadhaya S., Singh S.R. (2021) Removal of COD, Color and Chromium from Tannery Waste water with Associated Process of Adsorption and Catalytic thermal treatment, International Conference on Advances in Chemical, Biological and Environmental Engineering (ICACBEE-2021) (April 23-24, 2021) Paper Code: ICACBEE-2021-OP-006 Department of Chemical Engineering Malaviya National Institute of technology Jaipur

6. Chandra N., Ghosh U.U., Saha A., Kumar A., (2022) Rod climbing effect modulated by the three-phase contact line behavior. Bulletin of the American Physical Society, APS March Meeting 2022

7. Dhara T., Ghosh U.U., Ghosh A., Mukherjee P.P., Dasgupta S., (2021) An innovative approach to suppress dendrite formation during the charging of a battery, 3rd International Conference on Advanced Materials for Better Tomorrow, Varanasi, India. (Best poster award)

Proceedings of National conferences

1. Panjiara D., Pramanik H. (2021) Glycerol as prominent renewable fuel for microfluidic fuel cells: A review, International Conference on Advances in Sustainable Research for Energy and Environmental Management (ASREEM-2021), SVNIT Surat, August 6th to 8th, 2021.

2. Yadav N.K., Pramanik H. (2021) Performance study of a PEM based fuel cell using hydrogen fuel via hydrolysis of $NaBH_4$, International Conference on Advances in Sustainable Research for Energy and Environmental Management (ASREEM-2021), SVNIT Surat, August 6th to 8th, 2021

3. Sonkar S., Pramanik H. (2021) Development and preliminary testing of a unitized regenerative fuel cell for in-situ production of hydrogen, oxygen and electricity, International Conference on Advances in Sustainable Research for Energy and Environmental Management (ASREEM-2021), SVNIT Surat, August 6th to 8th, 2021

4. Singh A.P., Sharma S., Pramanik H. (2021) Study of cathode electrocatalyst performance in two cell stack of Proton Exchange Membrane Fuel Cell (PEMFCs), International Conference on Advances in Sustainable Research for Energy and Environmental Management (ASREEM-2021), SVNIT Surat, August 6th to 8th, 2021

5. Verma A., Sharma S., Pramanik H. (2021) Production of gasoline range hydrocarbon from the mixture of waste expanded polystyrene and waste high-density polyethylene using multiphase catalytic pyrolysis, International Conference on Advances in Sustainable Research for Energy and Environmental Management (ASREEM-2021), SVNIT Surat, August 6th to 8th, 2021.

Distinguished Visitors

Sl. No.	Name of the visitor & designation	Date of visit	Purpose of visit
1	Dr. Manish Jain, TATA Chemicals Ltd., Pune	October, 2021	Research collaboration
2	Dr. MK Mondal, NIT Durgapur	October, 2021	Research collaboration

Key Instruments:

(A) Quantum Efficiency (QE) Set-up (make: Bentham) (B) Interior view of the QE

Solar Simulator (make: Science Tech) with Keithley source-meter

9. Department of Civil Engineering

Completer Name of Department: Department of Civil Engineering

Year of Establishment: 1949

Head of the Department: Prof. Prabhat Kumar Singh Dikshit, W.e.f. 01.01.2020 till date.

Brief introduction of the Department/School:

The Civil Engineering Department was established in 1949 as Civil and Municipal Engineering under BENCO (Banaras Engineering College), which was a part of Banaras Hindu University (BHU). The formal sanction of the then Visitor of the University to create this Department was received in 1956, and the B.Sc Engineering (Civil & Municipal) Degree was recognized by the Govt. of India in 1958. The department was named as Civil Engineering in the year 1975. Presently, the department offers Bachelor of Technology (B. Tech) in under-graduate level as well as Integrated Dual Degree (IDD) in Civil Engineering, and also offers seven specializations in Post Graduate programme, viz Engineering Geoscience, Environmental Engineering, Geoinformatics Engineering, Geotechnical Engineering, Hydraulic & Water Resources Engineering, Structural Engineering, and Transportation Engineering. The department also has well-equipped laboratory including state-of-art computational facilities. Apart from regular teachings and the research activities, the department is engaged in various sponsored research programmes under the aegis of CSIR, UGC, SAP, HUDCO, DST, AICTE, and such others. Since long, the department has developed a strong liaison and rapport with industries in catering to the consultative services entrusted by Government, Semi-Government and Private organisations. It is deeply involved in offering technical solutions and guidelines as well to build up Country's infrastructural facilities such as buildings, bridges, tunnels, transport system, water supply & sewerage systems, etc. for the services to the people of the country. It regularly conducts short-term training & refresher courses, seminars, workshops and conferences for enrichment of scholars, entrepreneurs, and practicing engineers. The department is operating Civil Engineering Society, which is dedicated in organising guest lectures by leading experts in different fields of civil engineering & allied fields, group discussions, quiz & competitions, sports and various other extra-curricular and cultural activities so that it fosters a holistic all-round development of the students. Also, the society conducts a separate festival for the Civil Engineering Students, known as '*Shilp*'.

Major areas of Research

- Structural Engineering
- Geotechnical Engineering
- Transportation Engineering
- Engineering Geoscience
- Hydraulics & Water Resource Engineering
- Environmental Engineering
- Geoinformatics Engineering

Thrust Areas: Development and Characterization of New Generation Materials including recycled waste materials and Construction Technologies for sustainable infrastructure, Structural Health Monitoring, Environmental Geotechnic, Water Resources Development & Management, River Health Restoration, Sustainable Water & Waste Management, Smart Transport management

Area of the Department/School (in square meters):

Infrastructure

Sl. No.	Particulars	Number
1	No. of classrooms	5
2	No. of lecture halls	4
3	No. of laboratory	10
4	No. of computers available for students in the Department/School	60

Students on Roll

Sl. No.	Programme	I Year	II Year	III Year	IV Year	V Year & above
1.	B. Tech/B. Arch	115	117	111	86	-
2.	Dual Degree	27	30	28	24	22
3.	M. Tech/ M. Pharm	46	59	-	-	-
4.	Ph. D (Under Institute Fellowship)	4	12	23	11	12
5.	Ph. D (Under Project Fellowship)	3	2	2	-	-
6.	Ph. D (Under Sponsored Category)	-	-	-	3	1

Names of scholars/students who won convocation/Institute day prizes

Sl. No.	Name of Student	Roll No.	Name of prize	Prize awarded by
	Shri Aman Sharma	19062006	standing First at the M.Tech	Mr. Somnath S. Secretary, Department of Space & Chairman, Indian Space Research Organization
	Shri Aman Sharma	19062006	R.P. Singh, IRSE (Retired) Gold Medal for securing highest marks at the M.Tech.	Mr. Somnath S. Secretary, Department of Space & Chairman, Indian Space Research Organization
	Shri Manan Kumawat	16064021	Standing First at the 5- Year I.D.D.	Mr. Somnath S. Secretary, Department of Space & Chairman, Indian Space Research Organization
	Shri Puru Dubey	17065051	Standing First at the B.Tech.	Mr. Somnath S. Secretary, Department of Space & Chairman, Indian Space Research Organization
	Shri Puru Dubey	17065051	CRS Iyengar Memorial Gold Medal for securing highest marks in B.Tech	Mr. Somnath S. Secretary, Department of Space & Chairman, Indian Space Research Organization
	Shri Puru Dubey	17065051	Rai Bahadur Taracharan Gue Memorial Award Rs. 500/= cash for standing First at the B.Tech	Mr. Somnath S. Secretary, Department of Space & Chairman, Indian Space Research Organization
	Shri Puru Dubey	17065051	Late Prof. Manoranjan Sengupta Platinum Jubilee Merit Award Rs. 1000/= cash for securing highest marks in B.Tech.	Mr. Somnath S. Secretary, Department of Space & Chairman, Indian Space Research Organization

Sl. No.	Name of Student	Roll No.	Name of prize	Prize awarded by
	Shri Sankalp Verma	17065056	Meenakshamma Shankaranaramappa Prize Rs. 500/= cash for securing highest marks in Environmental Engineering (Theory) at the B.Tech.	Mr. Somnath S. Secretary, Department of Space & Chairman, Indian Space Research Organization
	Shri Sunny Kumar	17065068	Smt. Bimla Aggrawal Medal for securing > 8.00 CPI and having lowest family income out of the top 4 students at the B.Tech.	Mr. Somnath S. Secretary, Department of Space & Chairman, Indian Space Research Organization
	Shri Sunny Kumar	17065068	Smt. Bimla Aggrawal Cash Prize Rs. 15000/= for securing > 8.00 CPI and having lowest family income out of the top 4 students at the B.Tech	Mr. Somnath S. Secretary, Department of Space & Chairman, Indian Space Research Organization
	Ms. Shobha Amala Vagdevi Y	17065081	Securing highest CPI among the girl students at the B.Tech.	Mr. Somnath S. Secretary, Department of Space & Chairman, Indian Space Research Organization

Faculty & their activities

Faculty and their areas of specialisation

Sl. No.	Name, Qualifications, Employee No.	Date of award of PhD degree	Major areas of specialization
Professors			
1	Prof. Goutam Banerjee Ph.D (Engg.), 17178	Nov 1994	Environmental Engineering (Water, Wastewater, EIA & EA)
2	Prof. Devendra Mohan	2004	Environmental Engineering
3	Dr. Prabhat Kumar Singh, Ph.D., 17063	23.05.2000	Environmental Engineering
4	Prof. Prabhat Kumar Singh Dikshit	2010	Hydraulics and Water Resources Engineering, R S and GIS
5	Prof. Sasankasekhar Mandal	2002	Structural Engineering
6	Prof. Rajesh Kumar	2004	Structural Engineering, Soil-Structure Interaction under Earthquake Excitation, Finite Element Analysis, RCC Design of Buildings and Bridges, Concrete Material and Structural Optimization
7	Prof. Shyam Bihari Dwivedi, Ph.D. E.No. 18387	Dec.,1992	Engineering Geosciences
8	Prof. Arun Prasad	2000	Geotechnical Engineering (Soil stabilization, Unsaturated soil mechanics, Slope stability)
9	Prof. Krishna Kant Pathak	2001	Structural Engineering
10	Prof. Brind Kumar, PhD, 16816	19.10.2001	Transportation Engineering
Associate Professors			
1	Dr. Kamlesh Kumar Pandey		Hydraulics & Water Resources Engineering
2	Dr. Pabitra Ranjan Maiti		Structural Engineering
3	Dr. P. Bala Ramudu	12.10.2007	Geotechnical Engineering- Environmental Geotechnics; Geopolymers; Remediation of Contaminated Sites; Electreo Osmotic consolidation
4	Dr. Medha Jha	December, 2003	Engineering Geosciences

Sl. No.	Name, Qualifications, Employee No.	Date of award of PhD degree	Major areas of specialization
5	Dr.Anurag Ohri	2012	Geoinformatics Engineering, Municipal Solid Waste Management, Surveying
6	Dr. Ankit Gupta	04th Aug. 2012	Transportation Engineering, Sustainable Pavement Materials, Traffic Engineering
Assistant Professors			
1	Dr. Kesheo Prasad		Hydraulics & Water Resources Engineering
2	Dr. Suresh Kumar		Geotechnical Engineering
3	Dr. Shishir Gaur	July, 2010	Numerical Modelling, Optimization, GIS & Remote Sensing
4	Dr. Nikhil Saboo	May, 2016	Transportation Engineering: Pavement Materials, Design and Analysis
5	Dr. Rosalin Sahoo	March 2015	Composite Plates/Shells, CNT/Smart/FGM, Uncertainty Analysis
6	Dr. Supriya Mohanty	18-Jun-2014	Geotechnical Earthquake Engineering, Liquefaction Potential Evaluation, Nonlinear Dynamic Response Analysis.
7	Dr. Manash Chakraborty PhD, 50144	31st July 2015	Geotechnical Engineering, Finite Element Analysis
8	Dr. Abhisek Mudgal	Dec. 2011	Transportation Engineering
9	Dr. Mahendra Kumar Pal, PhD, Employee No. 50278	Sep 25, 2015	Computational Solid Mechanics, Structural Dynamics and Disaster Mitigation and Planning
10	Dr. Ayan Haldar	09.10.2019	Adaptive metamaterials, Origami and Krigami based adaptive structures, Mechanics of slender biological structures, Elastic instabilities in shells, Snap-through in multistable structures
11	Agnivesh P, Ph.D. Employee No: 50279	April 9, 2020	Transportation Planning, Freight Transportation, Travel Behaviour, City Logistics
12	Dr. Kshitij Kumar Yadav	20-07-2020	Stability of thin shell structures, Computational Mechanics, Stability of wind turbine towers and gas pipelines, Structural dynamics, Characterization of ground motions, Continuum mechanics
13	Dr. Vishwajit Anand Ph.D, 50297	03.05.2021	Earthquake Engineering, Soil-Structure Interaction, Rupture-to-Rafters Simulation, Dynamics of Offshore Wind Turbine Structures, Machine Learning Applications in Earthquake Engineering
14	Dr. Samim Mustafa, PhD, 50299	22-03-2017	Structural Health Monitoring, Bridge Weigh-In-Motion, Seismic response Analysis of bridges, Bayesian methods

Technical and Non-Teaching Staff

Sl. No.	Name, Qualifications	Designation, Employee No.	Date of appointment in the department
1	Shri Kamlesh Kumar	Junior Superintendent	31/07/2017
2	Shri Rajesh Prasad	Junior Assistant	07/03/2019
3	Shri Ajit Kumar	Skilled Clerical Staff (Ex-Cadre)	16/04/2015
4	Shri Lalji	Sr. Technical Superintendent	30/05/1987
5	Shri Sharada Prasad	Sr. Technical Superintendent	12/1/1989
6	Shri Basanta Prasad	Jr. Technical Superintendent	28/12/1990
7	Shri Vinod Kumar Singh	Senior Technician	14/10/1993
8	Shri A. K. Jaiswar	Senior Technician	22/02/2007
9	Shri R. B. Bhandari	Senior Technician	16/05/2007
10	Shri Yashwant Singh	Senior Technician	6/6/2007

Sl. No.	Name, Qualifications	Designation, Employee No.	Date of appointment in the department
11	Shri Amit Kumar Singh	Senior Technician	11/11/2011
12	Shri Shankar Ram	Junior Technician	13/06/2012
13	Shri Netrapal	Junior Technician	13/06/2012
14	Shri Rama Shankar Singh	Skilled Worker	1/1/2010
15	Shri Jai Singh Yadav	MTS-Skilled Worker	1/1/2015
16	Shri Deepak Kharwar	Unskilled Worker	22/01/2015
17	Shri Mintoo Lal Srivastava	MTS-Skilled Worker	13/12/2016
18	Shri Nitin Srivastava	MTS-Skilled Worker	13/12/2016
19	Shri Amar Srivastava	MTS-Skilled Worker	19/01/2017

Short-term courses/ workshops/seminars/symposia/conferences organised by faculty members

Sl. No.	Coordinator	Title	Period
1	Prof. Prabhat Kumar Singh (Convener) with Dr. Anurag Ohri (Co-Convener) Dr. Shishir Gaur (Co-Convener)	International Conference "River Health: Assessment to Restoration" (RHAR 2021)	October 22-24, 2021
2	Dr. Ankit Gupta and Dr. Agnivesh P.	Advanced Techniques for Traffic Data Analysis, Visualization, and State Estimation for Indian cities	20-24 Dec. 2021
3	Dr. Ankit Gupta	Quality Control, Material Testing Procedures and Lab Practices	11-13 Feb. 2022
4	Dr. Ankit Gupta	Quality Management for Highway Project - Flexible Pavements	18-20 Feb. 2022
5	Dr. Ankit Gupta	Construction and Quality Control of Flexible & Rigid Pavements	25-27 Feb. 2022
6	Dr. Ankit Gupta	New Technology Initiatives in Rural Roads including use of Marginal Materials	11-13 March 2022
7	Dr. Agnivesh P (Coordinator)	Safety of Rural Roads (Level-I)	February 18 – 20, 2022
8	***Convenor*** Prof. Prabhat Kumar Singh ***Co-Conveners*** Dr. Anurag Ohri, Dr. Medha Jha , Dr. Shishir Gaur	2nd International Conference (online) RIVER HEALTH: ASSESSMENT TO RESTORATION (RHAR-2021),Talks of the Tributaries : Rivers Varuna and Assi in the Middle Ganga Basin organised by IIT (BHU),	22-23 October 2021.

Short-term courses/ workshops/seminars/symposia/conferences/training programmes attended by faculty members in academic institutions and public sector undertakings

Sl. No.	Name of faculty member	Title	Period and venue
Seminars/Symposia/Conferences			
1.	Prof. Sasankasekhar Mandal	Advances in Structural Mechanics and Applications (ASMA-2021)	06th – 08th October 2021, Dept of Civil Engg., NIT Silchar, India
2.	Dr. Manash Chakraborty	7th ICRAGEE 2021	12th -15th July 2021, IISc Bangalore, Virtual Conference
3.	Dr. Manash Chakraborty	ICGE Colombo	6th -7th Dec 2021, Colombo, Virtual Conference
4.	Dr. Mahendra Kumar Pal	Government Official Training Program on Augmented and Virtual reality	4th Jan-14th Jan 2022, Online mode, Organized by CDAC

Sl. No.	Name of faculty member	Title	Period and venue
5.	Dr. Samim Mustafa	Improvement of estimation accuracy by BWIM considering autocorrelation of observation error	September 2021, Tokyo
6	Prof. Devendra Mohan	Climate Dialogue Series 2022 – India' - Seminar - III (Ministry of Environment, Forests and Climate Change MoEFCC) and Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH)	18th May 2022
7	Prof. Devendra Mohan	Scientific Webinar on "COVID-19: A Scientific Perspective"	26th June, 2021 Varanasi
Meetings			
1	Prof. Brind Kumar	3rd meeting of national experts on traffic noise	Department of Civil Engg., IIT Roorkee, March 11-12, 2022.

Special lectures delivered by faculty members in other institutions

Sl. No.	Name of faculty member	Topic of lecture	Institution	Date
1	Prof. Goutam Banerjee	Forensics in Civil Engineering - Its Field Application in Sewerage and Wastewater Treatment Systems	Kalinga Institute of Industrial Technology (KIIT), Bhubaneswar, Odisha	September 30, 2021
2	Dr. Ankit Gupta	Design of Flexible Pavement as per IRC 37-2018: Overview	MNNIT Prayagraj	28-07-2021
3	Dr. Ankit Gupta	Advances in Pavement Evaluation	Ramaiah Institute of Technology, Bengaluru	08-11-2021
4	Dr. Ankit Gupta	Sustainable Pavements: Utilization of Waste Fillers in Bituminous Mixes	IIT Indore	26-07-2021
5	Dr. Ankit Gupta	Sustainable Pavements: Utilization of Waste Fillers in Bituminous Mixes	PEC, Chandigarh	06-03-2022
6	Dr. Ankit Gupta	Pavement Evaluation Techniques	IIT Jodhpur	23-09-2021
7	Dr. Supriya Mohanty	"Fundamentals of Soil Liquefaction"	Faculty Development Programme (FDP) on "Recent Advances in Seismic and Wind Load Analysis of Structures" (07-06-2021 - 11-06-2021), Department of Civil Engineering, Mar Baselios College of Engineering and Technology, Thiruvananthapuram, Kerala.	07-06-2021 - 11-06-2021
8	Dr. Supriya Mohanty	"Simplified Procedure for Evaluation of Liquefaction Potential"	Faculty Development Programme (FDP) on "Emerging Areas of Geotechnical Engineering" (13th July – 17th July, 2021), Civil Engineering Department, S.K D.A.V Govt. Polytechnic, Rourkela.	13th July – 17th July, 2021
9	Dr. Agnivesh P	State-of-the-art Modeling Techniques in Civil Engineering	Vardhaman College of Engineering	September 25, 2021
10	Dr. Agnivesh P	Data Analytics and Predictive Techniques for Urban Freight Transportation System	IIT (BHU) Varanasi, Mechanical Department	November 11, 2021
11	Dr. Mahendra Kumar Pal	Investigation on imposing essential boundary conditions in Higher-order PDS-FEM	GLA Mathura	24th Dec. 2021

Sl. No.	Name of faculty member	Topic of lecture	Institution	Date
12	Dr. Mahendra Kumar Pal	Application of Higher Performance Computing in Fire Safety Assessment of Reinforced Concrete Structures	Tokkai University, Shizuoka Japan	Nov 26-27th 2021
13	Dr. P K S Dikshit	Hydrological and Sediment Yield Modelling and its Impact on Climate Change	MITS, Gwalior (M.P.).	21.12.2021
14	Dr. P K S Dikshit	Planning and design of river training works	Short Term Course on "Drought & Flood Analysis and their Management (DAM-2022)" from April 14 to 18, 2022, MNNIT, Pragraj	14 April 2022
15	Dr. P K S Dikshit	Hydrological and Sediment Yield Modelling	Department of Water Engineering and Management, Dental University of Jharkhand, Ranchi November 1-5, 2021	5 November 2021
16	Prof. Devendra Mohan	A Series of Webinars - Recent Advancements in Civil Engineering	Department of Civil Engineering, School of Engineering & Technology, DIT University, Dehradun	June 21-26, 2021
17	Prof. Devendra Mohan	COVID-19 Pandemic & Environmental Hygiene	M. S. Patel Department of Civil Engineering, CSPIT, CHARUSAT	19th July, 2021
18	Prof. Devendra Mohan	Guest Speaker	Recent trends on innovations in Civil and Mechanical Engineering	November 26-27, 2021
19	Prof. Devendra Mohan	Keynote Speaker	Teerthanker Mahaveer University, Moradabad, National Pollution Control Day	December 2, 2021
20	Prof. Devendra Mohan	Advisory committee member and Keynote speaker	International conference on Advances in energy, environment for sustainable development, NIT Meghalaya	2022
21	Prof. Devendra Mohan	Speaker	12th AISSQ Conference on Science and Spiritual Quest	January 21-23, 2022
22	Prof. Devendra Mohan	Online lectures	National Program on COVID-19, Preventive Measures, Environmental Sustainability	September 6, 2021
23	Prof. Devendra Mohan	Keynote speaker	National Conference on 'Advances in smart building, trenchless technology and intelligent materials in manufacturing'	September 23, 2021
24	Prof. Devendra Mohan	Speaker	ICTE-ISTE Sponsored Induction/ Refresher Program on Use of Virtual Laboratories	December 3-9, 2021
25	Prof. Devendra Mohan	Speaker	National Education Policy	December 7, 2021
26	Prof. Devendra Mohan	Keynote Speaker	Nano-architectures for Chemical, Biological and Therapeutic Applications" (NCBTA-2021)	November 12-14, 2021, GLA University, Mathura

Honours and awards

S. No.	Name of faculty member	Details of award
1	Prof. Sasankasekhar Mandal	Best paper ward from ICI Journal for the research paper **Response Reduction Factor of RC-infilled frames by using different methods**" April-June 2020 issue of ICI Journal.
2	Dr. Ankit Gupta	Ministry of Road Transport and Highways Chair Professor from 8th Feb. 2022
3	Dr. Ankit Gupta	Member-Secretary, G-3 Technical Committee, "Reduction of Carbon Footprints in Construction of Roads Projects", Indian Roads Congress. Nominated for three years 2021-2023.
4	Dr. Mahendra Kumar Pal	Alumni Excellence Award in "Alumni Relation" by IIT Hyderabad for 2021.

Fellowships of academic and professional societies

Sl. No.	Name of faculty member	Details of fellowship
1	Prof. Prabhat Kumar Singh	IEI Fellow, F-1287709
2	Prof. K. K. Pathak	Life member, Indian Association for Structural Engineering, IIT Bombay
3	Prof. K. K. Pathak	Life member, Indian Association for Computational Mechanics, IIT Bombay
4	Prof. K. K. Pathak	Life member, Ferrocement Society of India, Pune
5	Prof. Rajesh Kumar	Life Member, Indian Building Congress (IBC)
6	Prof. Rajesh Kumar	Life Member, Indian Concrete Institute (ICI)
7	Dr. Supriya Mohanty	Associate Member, American Society of Civil Engineers (ASCE)
8	Dr. Supriya Mohanty	Member, Earthquake Engineering Research Institute (EERI)
9	Dr. Supriya Mohanty	Associate Member, Institute of Engineers, India (IEI)
10	Dr. Supriya Mohanty	Life Member, JICA (Japan International Cooperation Agency) Alumni Association of India (JAAI)
11	Dr. Supriya Mohanty	Life Member, Indian Geotechnical Society (IGS)
12	Dr. Supriya Mohanty	Life Member, Indian Society of Earthquake Technology (ISET)
13	Dr. Supriya Mohanty	Life Member, Association of Consulting Civil Engineers (India)
14	Dr. Vishwajit Anand	Young Professional Member, Earthquake Engineering Research Institute (EERI), Oakland
15	Dr. Vishwajit Anand	Graduate Member, The Institution of Structural Engineers (IStructE), London

Books, monographs authored/co-authored

Sl. No.	Name of author/co-author	Title	Publisher
1	Dr. Agnivesh P	Sustainable Freight Transportation Planning and Policies for a Logistics-Driven India: Current State and Future Ahead	Springer Transactions in Civil and Environmental Engineering, https://link.springer.com/book/9789811696350
2	Dr. Veerendra Kumar, Dr. Rajesh Kumar, Shubham Srivastava	100 Solutions in Civil Engineering	Khanna Publishers, 2021, Pages 390

Editorial boards of journals

Sl. No.	Name of faculty member	Position (editor/ member)	Name of journal
1	Prof. Sasankasekhar Mandal	Review editor	Frontiers in Built Environment
2	Dr. Ankit Gupta	Academic Editor	International Journal - Advances in Civil Engineering, Hindawi

Sl. No.	Name of faculty member	Position (editor/ member)	Name of journal
3	Dr. Ankit Gupta	Associate Editor	International Journal ICE - Transport, Institution of Civil Engineers, UK
4	Dr. Ankit Gupta	Associate Editor	Innovative Infrastructure Solutions, Springer.
5	Dr. Ankit Gupta	Editorial Board Member	International Journal for Traffic and Transportation Engineering (IJTTE), Serbia

Design and Development Activities New facilities added

Sl. No.	Details (Infrastructure, equipment, etc.)	Value (in lakhs of rupees)
1	Lidar Speed Gun-6 Nos.	12.0 Lacs.

Patents filed

Sl. No.	Name of faculty member	Title of patent
1	Bala Ramudu Paramkusam, Deep Jyoti Singh, Arun Prasad	Patent "an improved electro-kinetic constant rate-of-strain consolidometer", Application No. 202111057176. Date of filing: 08.12.2021. Publication date: 31.12.2021.

Research and Consultancy Sponsored research projects (Ongoing only)

Sl. No.	Title	Period	Funding agency	Amount (in lakhs of Rs.)	Project P.I
1	Strategic Planning for Water Resources and Implementation of Novel Biotechnical Treatment solutions and Good Practices (SPRING) 2020	2020-2023	Indo- EU Collaborative Research Project, funded by 'Horizon 2020' and DBT, GOI	71.28 lakhs	Dr. Prabhat Kumar Singh
2	Effects of River-Aquifer Exchanges on Riverine Ecosystem Resilience to Global Change: Comparative Approach of the Ganga and Rhône River Basin Networks	2021-2026	Indo- French International Research Project	40.34 lakhs	Dr. Shishir gaur
3	Propagation and mitigation model for road traffic noise of mid-sized Indian cities	18.07.2017 to 31.03.2022	IMPRINT India	338.0	Brind Kumar
4	Development and Assessment of Asphalt Mastic from Typical Indian and Austrian Filler Materials with a New Test Method	2018-2021	DST	9.5 Lakhs	Dr. Ankit Gupta
5	Rheophysics of Semi-Rigid Road Building Materials and Optimization of their Compositions for the Perception of Heavy Transport Load	2019-2022	DST	11.5 Lakhs	Dr. Ankit Gupta
6	Performance Assessment of Roads Constructed Using Waste Plastics	2020-2021	NRIDA	23.5 Lakhs	Dr. Ankit Gupta
7	Development of Performance Based Mix Design Process: A Re-look at the Marshall Mix Design Process for Production of Strong and Durable Bituminous Mixes	2020-2023	NHAI	92 Lakhs	Dr. Ankit Gupta
8	Safer Roads: Development of Mix-Design Methodology for OGFC Mixes	2020-2023	UP-CST	12 Lakhs	Dr. Ankit Gupta
9	Development of Road Research Laboratory at IIT (BHU) Varanasi	2021-2026	GR Infra Projects Limited	375 Lakhs	Dr. Ankit Gupta
10	Studying few aspects of soil behaviour and incorporating them in Limit Analysis	2018-2022	DST	35	Dr. Manash Chakraborty

Sl. No.	Title	Period	Funding agency	Amount (in lakhs of Rs.)	Project P.I
11	Understanding the engineering behaviour of unsaturated geomaterials and implementing it in limit analysis for solving geotechnical problems	2020-2022	SERB	27.3	Dr. Manash Chakraborty

Industrial consultancy projects (Ongoing only)

Sl. No.	Name of faculty member	Title	Industry	Amount (in lakhs of Rs.)
1	Prof. Sasankasekhar Mandal	Vetting of overhead water tanks for various agencies	Various agencies/ Organizations	16 Lakhs
2	Dr. Prabhat Kumar Singh	Vetting of the Design and Drawings of Storm Water Drainage System within ABD area	Aligarh Smart City Project	---
3	Dr. Prabhat Kumar Singh	Study of impact on groundwater quality and environmental for the TSDF site at Kumbhi village near Kanpur	U.P. Waste Management Project (A Division of Ramky Enviro Engineers Ltd.)	---
4	Prof.K.K.Pathak	Vetting of structural design and drawings	PWD Uttarakhand	Rs.50 lakhs
5	Prof.K.K.Pathak	Third party quality Audit of construction projects	UPRNN	Rs.40 lakhs
6	Prof.K.K.Pathak	Design of structures and bridges	UP-PWD	Rs.25 lakhs
7	Dr. Ankit Gupta	Blackspot Audits of Blackspots in Eastern UP	UPPWD	Rs 68 Lakhs
8	Dr. Ankit Gupta	Third Party Evaluation of ATCS Traffic Signals under Smart City	Ayodhya Nagar Nigam	Rs 20 Lakhs
9	Dr. Rajesh Kumar	Vetting of structural design and drawings of various bridges	Dilip Buildcon Limited, Bhopal	Rs. 10 Lakhs

Faculty members' participation with other universities under MoUs (Ongoing only)

1. Brind Kumar, Associate Professor as PI of the IMPRINT project with Prof. M. Parida as Co-PI of the Department of Civil Engineering, IIT Roorkee, Roorkee.

Research publications

Total number of papers published in refereed National journals	3
Total number of papers published in refereed International journals	88
Total number of papers presented in National conferences	5
Total number of papers presented in International conferences	16

Refereed International journals

1. Rahul A. K.,Shivhare, N.,Kumr, S. Dwivedi S.B. and Dikshit P.K. (2022) Modelling suspended sediments concentration and discharge relationship using neural network and adaptive neuro-fuzzy inference system Arabian journal of Geosciences. 15(6):1-9

2. 2. Kumar R.R.,Kawaguchi,K., Dwivedi,S.B. and Das K (2021) (2022) Metamorphic evolution of the politic and mafic granulites from Daltonganj, chhotanagpur Granite Gneiss complex,India: Constraints fromZircon U-Pb age and phase equilibria modelling Geological Journal.57(3):1284-1310

3. 3. Gaur S.,Mishra A.,Gupta,A.,Jain A.,Dave A.,Eslamian S.,Dwivedi S.B. and Graillot D.(2021) Application of artificial neural network model for the prediction of suspended sediment load in the large river Water Resources 48(4):565-575

4. 4. Kumar R.,Dwivedi S.B. and Gaur S. (2021) a comparative study of machine learning and fuzzy-AHP technique to groundwater potential mapping in the data-scarce region Computer & Geosciences 155(4) 104855-104866

5. 5. Das N., Bhatacharjee R.,Choubey, A.,Ohri,A.,Dwivedi,S.B. and Gaur,S.(2021) Time series analysis of automated surface water extraction and thermal pattern variation over the Betwa River,India Advances in Space Research 68(4):1761-1788

6. 6. Kumar R. R. And Dwivedi S.B. (2021) Exsolution intergrowth of cpx-opx and pseudosection modelling of two-pyroxene mafic granulites of Chhotanagpur Granite Gneiss Complex, Eastern India Arabian Journal of Geosciences 14(9):1-16

7. Tewari, A., Singh, P. K., and Gaur, S. (2022). Engineered hyporheic zones: design and applications in stream health restoration–a review. *Water Supply*, *22*(2): 2179-2193.

8. Srivastava, R. R., and Singh, P. K. (2021). Reuse-focused selection of appropriate technologies for municipal wastewater treatment: a multi-criteria approach. *International Journal of Environmental Science and Technology*. 1-18.

9. Debnath, A., Singh, P. K., and Sharma, Y. C. (2021). Metallic contamination of global river sediments and latest developments for their remediation. *Journal of Environmental Management*. *298:* 113378.

10. Srivastav, A. L., Pham, T. D., Izah, S. C., Singh, N., and Singh, P. K. (2021). Biochar Adsorbents for Arsenic Removal from Water Environment: A Review. *Bulletin of environmental contamination and toxicology.* 1-13.

11. Ranjan, M., Singh, P. K., and Srivastav, A. L. (2021). Application of Hydrous Bismuth Oxide for Arsenic Removal from Aqueous Solutions. *Nature Environment & Pollution Technology*,. *20*(1).

12. Singh, P. K., & Ohri, A. (2021). Sensitivity analysis of the smart city environmental sustainability index (SCESI). *Nature Environment & Pollution Technology*. *20*(1).

13. Abhishek Sharma, K. K. Pathak, P. K. Singh (2021), Analytical Comparison of Composite and Non-Composite through Type and Deck Type Steel Truss Bridges, Civil Engineering and Architecture. 9(4): 969-975

14. Ravinder Kumar Agrahari, K. K. Pathak (2021), Nonlinear Amplification Model in RC Frame Structures: Case Study for Chi-Chi Earthquake, Civil Engineering and Architecture.9(4)

15. Narayan and Krishna Kant Pathak (2021), Numerical experimentation for the upgrade of old designed eccentrically braced frame, ASCE's Practice Periodical on Structural Design and Construction, 26(4)

16. Megha Jain, Sunil Shrivastava and KK Pathak(2021), Pareto Analysis of Causes of Delay and Recommendations for Training Needs, International Journal of Construction Project Management, 13(2)

17. Ishan Jha and Krishna K. Pathak (2021), Fuzzy-based integrated zero-order shape optimization of steel–concrete–steel sandwich beams. Current Science, 121

18. Ishan Jha and Krishna K. Pathak, Mrigank Jha, Ashutosh Ranjan (2022), A Comparative Study of Gradient Descent Method and a Novel Non- Gradient Method for Structural Shape Optimization, International Journal of Mathematical, Engineering and Management Sciences. 7(2)

19. Choudhary, J., Kumar, B., & Gupta, A. (2021). Evaluation of engineering, economic and environmental suitability of waste filler incorporated asphalt mixes and pavements. *Road Materials and Pavement Design*, *22*(sup1), S624-S640.

20. Choudhary, J., Kumar, B., & Gupta, A. (2021). Analysing the influence of industrial waste fillers on the ageing susceptibility of asphalt concrete. *International Journal of Pavement Engineering*, 1-14.

21. Choudhary, J., Kumar, B., & Gupta, A. (2021). Utilization of waste glass powder and glass composite fillers in asphalt pavements. *Advances in Civil Engineering*, *2021*.

22. Verma, G., & Kumar, B. (2022). Artificial Neural Network Equations for Predicting the Modified Proctor Compaction Parameters of Fine-Grained Soil. *Transportation Infrastructure Geotechnology*, 1-24.

23. Pandey, A., & Kumar, B. (2022). Utilization of agricultural and industrial waste as replacement of cement in pavement quality concrete: a review. *Environmental Science and Pollution Research*, 1-43.

24. Verma, G., & Kumar, B. (2022). Multi-layer perceptron (MLP) neural network for predicting the modified compaction parameters of coarse-grained and fine-grained soils. *Innovative Infrastructure Solutions*, *7*(1), 1-13.

25. Verma, G., & Kumar, B. (2022). Multi-layer perceptron (MLP) neural network for predicting the modified compaction parameters of coarse-grained and fine-grained soils. *Innovative Infrastructure Solutions*, *7*(1), 1-13.

26. Hussain, M. S., Goswami, A. K. and **Gupta, A.** (2022) "Predicting Pedestrian Crash Locations in Urban India: An Integrated GIS-Based Spatiotemporal HSID Technique", Journal of Transportation Safety and Security, Taylor and Francis. [IF: 3.000] (DOI: 10.1080/19439962.2022.2048759)

27. 2. Mondal, S. and **Gupta, A.** (2022) "Evaluation of Driver Acceleration/Deceleration Behavior at Signalized Intersections using Vehicle Trajectory Data", Transportation Letters: The International Journal of Transportation Research, Taylor and Francis. (DOI: 10.1080/19427867.2022.2052584) [IF: 3.598]

28. 3. Mishra, S., Singh, V., **Gupta, A.**, Bhattacharya, D. and Mudgal, A. (2022) "Adaptive Traffic Signal Control for Developing Countries Using Fused Parameters Derived from Crowd-Source Data", Transportation Letters: The International Journal of Transportation Research, Taylor and Francis.. (DOI: 10.1080/19427867.2022.2050493) [IF: 3.598]

29. 4. Mondal, S., **Gupta, A.** and Zhao, J. (2022). "Two-Step Optimization Model for Evaluating the Saturation Flow Rate under the Impact of Small-Sized Vehicles", Journal of Transportation Engineering, Part A: Systems, ASCE. [IF: 1.774] (https://doi.org/10.1061/JTEPBS.0000664)

30. 5. Chaudhary, M., Saboo, N., **Gupta, A.**, Steineder, M. and Hofko, B. (2022). "Effect of Analysis Procedure and Sample Geometry on the Fatigue Life Results of Asphalt Mastics from Linear Amplitude Sweep Test", Mechanics of Time-Dependent Materials, Springer Nature. [IF: 2.143] (https://doi.org/10.1007/s11043-022-09539-y)

31. 6. Kumar, A. and **Gupta, A.** (2021). "Review of Factors Controlling Skid Resistance at Tire-Pavement Interface", Advances in Civil Engineering, Hindawi, Vol. 2021, Article Id 2733054, pp. 1-16. [IF: 1.924] (https://doi.org/10.1155/2021/2733054)

32. 7. Choudhary, J., Kumar, B. and **Gupta, A.** (2021) "Utilization of Waste Glass Powder and Glass Composite Fillers in Asphalt Pavements", Advances in Civil Engineering, Hindawi, Special Issue: Advances in Planning, Design, Construction, and Management of Road Infrastructure, Vol. 2021, Article Id 3235223, pp. 1-17. [IF: 1.924] (https://doi.org/10.1155/2021/3235223)

33. 8. Chaudhary, M., Saboo, N. and **Gupta, A.**, (2021). "Introduction of a New Parameter to Quantify the Fatigue Damage in Asphalt Mastics and Asphalt Binder", Coatings, MDPI, 11(7), 828. [IF: 2.881] (https://doi.org/10.3390/coatings11070828)

34. 9. Diab, A., Pais, J., Chen, S., **Gupta, A.**, Li, X., You, L. and Mohd Hasan, M. R. (2021). "High, Intermediate and Low Temperature Performance of Elastomeric and Plastomeric Asphalt Binders and Mixes", Journal of Elastomers and Plastics, Sage Publications. [IF: 1.833] (https://doi.org/10.1177/00952443211038663)

35. 10. Choudhary, J., Kumar, B. and **Gupta, A.** (2021) "Analysing the Influence of Industrial Waste Fillers on the Ageing Susceptibility of Asphalt Concrete", International Journal of Pavement Engineering, Taylor and Francis. [IF: 2.646] (https://doi.org/10.1080/10298436.2021.1927027)

36. 11. Choudhary, J., Kumar, B. and **Gupta, A.** (2021). "Evaluation of Engineering, Economical and Environmental Suitability of Waste Filler Incorporated Asphalt Mixes and Pavements", International Journal of Road Materials and Pavement Design, Taylor and Francis, Vol. 22:sup1, S624-S640. [IF: 2.582] (https://doi.org/10.1080/14680629.2021.1905698)

37. Mondal, S. and **Gupta, A.** (2021). "Speed Distribution for Interrupted Flow Facility under Mixed Traffic", Physica A: Statistical Mechanics and its Applications, Elsevier, Vol. 570, 125798. [IF: 2.924] (https://doi.org/10.1016/j.physa.2021.125798)

38. Mondal, S. and **Gupta, A.** (2021) "Non-Linear Evaluation Model to Analyze Saturation Flow under Weak-Lane Disciplined Mixed Traffic Stream", Transportation Research Record (TRR), Journal of the Transportation Research Board (TRB), Sage Publications. [IF: 1.029] (https://doi.org/10.1177/0361198121998370)

39. Choudhary, J., Kumar, B. and **Gupta, A.** (2021) "Potential Utilization of Construction Wastes in Asphalt Pavements as Fillers using Ranking Framework", Construction and Building Materials, Elsevier, Vol. 277, pp. 122262. [IF: 4.419] (https://doi.org/10.1016/j.conbuildmat.2021.122262)

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41. Dev Prasad, S. Chakraborty, M. (2021). Bearing capacity of ring footing resting on two layered soils. Computers and Geotechnics, 134:104088.

42. Sarkar, S. and Chakraborty, M. (2021). Stability analysis for two-layered slopes by using the strength reduction method. International Journal of Geo-Engineering, 12 (1): 1-22.

43. Singh, A. and Chakraborty, M. (2021). Numerical analysis of one-dimensional consolidation of two-layered soils considering various initial excess pore water pressure. Geotechnical and Geological Engineering, 1-18.

44. Singh, A. and Chakraborty, M. (2021). Effect of various initial excess pore water pressure distributions on 1-D consolidation of clays water pressure distributions. International Journal of Geotechnical Engineering, 16 (1): 123-132.

45. Singh, A. and Chakraborty, M. (2021). Simulating one-dimensional consolidation of clays with non-Darcian flow by using Newton-Raphson technique. Indian Geotechnical Journal, 1-14.

46. Prasad, S.D. and Chakraborty, M. (2021). Behaviour of ring footing on two-layered soil due to various loading positions. International Journal of Geomechanics. 10.1061/(ASCE)GM.1943-5622.0002310.

47. Satwik Chivukula and Chakraborty, M. (2022). Numerical analysis of 1-dimensional consolidation of soft clays subjected to cyclic loading and non-Darcian flow. Computers and Geotechnics, 146, 104742.

48. Ram A.K., Reddy M.V.R.K. and Mohanty S. (2022). Identification of preferable method for the precise estimation of coefficient of consolidation (Cv) for coal ash. European Journal of Environmental and Civil Engineering, Taylor & Francis. 1-33.

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50. Ram A.K. and Mohanty S. (2022). State of the art review on physiochemical and engineering characteristics of fly ash and its applications. International Journal of Coal Science of Technology, Springer, 9:9, 1-25.

51. Rawat, P. and Mohanty S. (2021). Parametric Study on Dynamic Characterization of Soil-like material of Municipal Solid Waste for Geotechnical Purpose. Journal of Hazardous, Toxic, and Radioactive Waste Mgmt, ASCE, 26(1): 04021047, 1-12.

52. Ram A.K. and Mohanty S. (2021). Experimental investigation on dynamic behavior of silt-rich fly ash using cyclic triaxial and bender element tests. Innovative Infrastructure Solutions, Springer, 6(219): 1-24.

53. Rawat P. and Mohanty S. (2021). Experimental Investigation on MSW Fine Mixed with Fibers: Fiber Reinforced Waste. Journal of Hazardous, Toxic, and Radioactive Waste Mgmt, ASCE, 25(3): 04021009, 1-11.

54. Pani, A., Mishra, S., and Sahu, P. (2022) "Developing multi-vehicle freight trip generation models quantifying the relationship between logistics outsourcing and insourcing decisions", Transportation Research Part E, 159, DOI: https://doi.org/10.1016/j.tre.2022.102632

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59. Chandra, A., Pani, A., Sahu, P., Majumdar, B., and Sharma, S. "Identifying Large Freight Traffic Generators and Investigating the Impacts on Travel Pattern: A Decision Tree Approach for Last-Mile Delivery Management", Research in Transportation Business and Management, DOI: https://doi.org/10.1007/s11067-021-09530-z

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61. Mohd Akram, Mahendra Kumar Pal, Lalith Maddegedara and Muneo Hori,"Modeling of thermal shrinkage induced cracking in brittle material using Higher order PDS-FEM", Journal of JSCE Applied Mechanics , 77(2), 205-215 2021, DOI https://doi.org/10.2208/jscejam.77.2_I_205

62. Mustafa S., Sekiya H., Morichika S., Maeda I., Takaba S. and Hamajima A. (2022) Monitoring Internal Strains in Asphalt Pavements Under Static Loads Using Embedded Distributed Optical Fiber. Optical Fiber Technology (Elsevier). 68: 102829.

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69. Shendkar M. R., Beiraghi H., and Mandal S. (2021) Effect of Irregularity on Seismic Design Parameters of RC-infilled Structures. Magazine of Civil Engineering, (SCOPUS, ESCI), 108(8). DOI: 10.34910/MCE.108.4, 1-14.

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71. Shendkar M. R., Kontoni D-P. N., Isik E., Mandal S., Maiti PR, and Harirchian E. (2022) "Influence of Masonry Infill on Seismic Design Factors of Reinforced-Concrete Buildings" Shock and Vibration. (SCI). DOI: 10.1155/2022/5521162, PP:1-15.

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Vibration. (SCI). Article ID 5536409l https://doi.org/10.1155/2021/5536409 pp: 1-15.

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82. Omar P J, Gaur S, Dikshit P K S (2021) Conceptualization and development of multi-layered groundwater model in transient condition. Appl Water Sci 11(10):1–10.

83. Ankita Singh, Bala Ramudu Paramkusam, and Pabitra Ranjan Maiti. (2021) "Impact of Petroleum Hydrocarbon On Shear Wave Velocity of Brahmaputra River Sand." Environmental earth sciences, v. 80 ,.13 pp. 460. doi: 10.1007/s12665-021-09748-7

84. Ankita Singh, Bala Ramudu Paramkusam & Pabitra Ranjan Maiti (2021) Parametric assessment of pore pressure dynamics in hydrocarbon contaminated Guwahati sand using shake table test, European Journal of Environmental and Civil Engineering, DOI: 10.1080/19648189.2021.1977182

85. Ankita Singh, Bala Ramudu Paramkusam & Prabir Kumar Basudhar (2022) Empirical modelling of shear behavior of oil contaminated sand - geogrid interface, Soil and Sediment Contamination: An International Journal, DOI: 10.1080/15320383.2022.2051426.

86. Singh, D.J., Paramkusam, B.R. & Prasad, A. Determination of Consolidation Parameters of Geomaterials Using Modified CRS Consolidation Testing System. KSCE J Civ Eng 26, 1066–1079 (2022). https://doi.org/10.1007/s12205-021-0386-1.

87. Shrivas, R., Paramkusam, B.R. & Dwivedi, S.B. Strength and durability performance of geopolymer binder of ambient cured alkali-activated MSW rejected waste and GGBFS mixes. Environ Sci Pollut Res 29, 30521–30536 (2022). https://doi.org/10.1007/s11356-021-17547-7

88. Manish Kumar Mandal and Bala Ramudu Paramkusam (2022) Assessment of alkali-induced heave in soil and its stabilisation using slag. Proceedings of the Institution of Civil Engineers - Ground Improvement 0 0:0, 1-13. https://doi.org/10.1680/jgrim.21.00019

89. Markandeya, Devendra Mohan, and Sheo Prasad Shukla (2022). "Hazardous consequences of textile mill effluents on soil and their remediation approaches." Cleaner Engineering and Technology, 7, 100434.

90. Devendra Mohan, Rahul Verma, Rohit Kushwaha, Sonam (2022) "Solar Oxidation and Removal of Arsenic from Water: An Experimental Study" accepted for publication in Environmental Quality Management.

Refereed National journal

91. Chaudhary V.,Srivastava,A.,Pandey,V.H.R.,Kaint,A,Tiwari,S.K.,Dwivedi,S.B. and Singh,T.N. (2021) Physico-mechanical characteristic of Vindhyan Sandstone Journal of the Institution of Engineers (India) Series D :1-9

92. 2. Bhatacharjee R.,Choubey, A.,Das N.,Ohri,A.,Dwivedi,S.B. and Gaur,S.(2021) Analysis of Groundwater scenario with respect to the crop water productivity for the Betwa-Dashan river basin, Bundelkhand using remote sensing techniques.130(4):1-17

93. Balla, B.S., Sahu, P., and Pani, A. (2021) "Are Freight Production Models Transferable between Urban and Suburban Areas? Guiding Model Transfer in Geographically Sprawling Indian Cities", Journal of The Institution of Engineers (India): Series A, DOI: https://doi.org/10.1007/s40030-021-00556-7

Proceedings of International conferences

1. Sagar,D.,Dwivedi,S.B.,Basudhar,P.K.,2021. Electrical resistivity tomography in geotechnical engineering applications. Proceeding of the Indian Geotechnical conference 133:157-167 Springer Sigapore

2. Narayan, K.K.Pathak, Analysis of structural engineering problems based on futuristic connection definitions,The International Conference on Futuristic Technologies 2021, Indian Institute of Technology, Delhi, India, 22-24 Jan 2021

3. Ravinder Kumar Agrahari, K.K. Pathak, Comparative study of Seismic Acceleration amplification models for RC frame Structures, 3rd International Conference in Advances in Civil Engineering (ICACE 2021), KL University, Vaddeswaram, 25-26 June 2021

4. Narayan, K.K.Pathak, Improving the overall buckling resistance of Chevron braced steel frames using lintel band, ICASTM-2021, 23-24 Dec, 2021, SB Jain Institute of Technology, Management and Research, Nagpur

5. Ishan Jha, K.K.Pathak, Shape optimization of structures considering varying geometrical and material parameters, International Conference on Advanced Engineering Optimization Through Intelligent Techniques (AEOTIT-2021), 28-30 January 2022, SVNIT Surat

6. Narayan, R. K. Agrahari and K. K. Pathak, "Improving the structural behaviour of the concentric chevron braced frame under cyclic loading," 6th International Conference on Civil Engineering for Sustainable Development (ICCESD 2022),10-12,Feb. 2022, Department of Civil Engineering, Khulna University of Engineering & Technology, Bangladesh.

7. Adarsh Yadav, M. Parida and Brind Kumar. 2021. Study of Variation of Sound Power Level to Improve Noise Assessment on Bituminous Pavement. In Book of Abstract. 8th International Conferences on Transportation System Engineering and Management. 26-27 August 2021.

8. Adarsh Yadav, M. Parida and Brind Kumar. 2021. Determination of passenger car noise equivalent for mid-sized cities in India. In INTER.NOISE and NOISE-CON Congress and Conference Proceedings (Vol. 263, No. 6, pp. 526-539). Institute of Noise Control Engineering.

9. Sarkar, S. and Chakraborty, M. (2020). "Seismic stability of non-homogenous cohesive soil by using calculus of variation." 7th International Conference on Recent Advances in Geotechnical Earthquake Engineering and Soil Dynamics.

10. Singh, A. and Chakraborty, M. (2020). "One dimensional consolidation analysis by assuming Trapezoidal initial pore water pressure distribution." Proceedings of the 3rd International Conference in Geotechnical Engineering, Colombo.

11. Munda J. and Mohanty S. (2021). State of the Art Review on Improvement of Strength Characteristics of Soil

using Nano Silica. Proceedings of Indian Geotechnical Conference 2021, NIT Trichy, Tamilnadu, India, December 16-18, 2021. (Accepted)

12. Ram A.K., Verma A. and Mohanty S. (2021). 1D, 2D & 3D Seismic Response Analysis of Shallow and Deep Foundation Resting on Stratified Soil Deposit. Proceedings of Indian Geotechnical Conference 2021, NIT Trichy, Tamilnadu, India, December 16-18, 2021. (Accepted)

13. Rawat, P. and Mohanty S. (2021). Potential Use of Fine Fraction of Municipal Solid Waste as Replacement of Soil in Embankment. Proceedings of Indian Geotechnical Conference 2021, NIT Trichy, Tamilnadu, India, December 16-18, 2021. (Accepted)

14. Vishwajit Anand and S. R. Satish Kumar. 2022. Seismic performance of semi-rigid steel frames considering soil-structure interaction. Indian Structural Steel Conference, Hyderabad, India, January 2022.

15. Sapna Kumari, Ashish SINGH and Sasankasekhar Mandal. 2021. Effect of Terrain Category, Aspect Ratio and Number of Storey on the Shear Lag Phenomenon in RCC Framed Tube structures. International Conference On Advances in Structural Mechanics and Applications (ASMA-2021), 06th – 08th October 2021, NIT Silchar, India.

16. Mangeshkumar R Shendkar, Denise-Penelope Kontoni, Sasankasekhar Mandal and Pabitra Ranjan Maiti. 2021. Investigation of Seismic Design Parameters in Irregular Reinforced Concrete Buildings with Masonry Infills, International Conference On Advances in Structural Mechanics and Applications (ASMA-2021), 06th – 08th October 2021, NIT Silchar, India.

17. CHEMCONFLUX 2022: International Conference on Technological Interventions for Sustainability, MNNIT Allahabad (April 14-16, 2022)

Proceedings of National conferences (From 1st April 2021 to 31st March 2022)

1. Ishan Jha, Sudhir Babu Patel, K.K.Pathak, Ashok Jain, Finite wlement analysis of ferrocement pump house, 6th National Convention on Ferrocement, FS-2021, Symbiosis Institute of Technology, Pune, 12-14 Nov., 2021

2. Rakesh Patel, Dubey S. K, Pathak K. K., Analysis of steel beams for different loading using MIF, Indian Structural Steel Conference (ISSC-2021), 06-08 Jan 2022, IIT Hyderabad

3. Adarsh Yadav, M. Parida and Brind Kumar. 2021. Study of Variation of Sound Power Level to Improve Noise Assessment on Bituminous Pavement. In Book of Abstract. 8th International Conferences on Transportation System Engineering and Management. 26-27 August 2021.

4. Adarsh Yadav, M. Parida and Brind Kumar. 2021. Determination of passenger car noise equivalent for mid-sized cities in India. In INTER.NOISE and NOISE-CON Congress and Conference Proceedings (Vol. 263, No. 6, pp. 526-539). Institute of Noise Control Engineering.

5. Jha, M.(2021), 'Geohydrology of River Assi Catchment' , on 2nd International Conference (online) RIVER HEALTH: ASSESSMENT TO RESTORATION (RHAR-2021),Talks of the Tributaries : Rivers Varuna and Assi in the Middle Ganga Basin organised by IIT (BHU),22-23 October 2021.

Foreign faculty visits in the Department/School/Unit

Sl. No.	Name of faculty member	Purpose of visit	Date and venue
1	Prof. Hervey Piegay, Univ. of Lyon, France	Indo- French International Research Project	28 -30 March, 2022 Dept. of Civil Engg.

Any other Information

1. Prof. KK Pathak: Member, Building & Works Committee, IIIT Pune, April 2019 - Till date

2. Prof. Rajesh Kumar: Member, Executive Committee, Indian Institute of Carpet Technology, Bhadohi, Uttar Pradesh

3. Prof. Rajesh Kumar: Member, Building Works Committee, NIT Patna

4. Prof. Rajesh Kumar: Member, Selection Committee, NIT Raipur

Key Instruments:

Uniaxial Testing Machine

Automatic Bituminous Compactor

10. Department of Computer Science and Engineering

Full Name of Department: Computer Science and Engineering

Year of Establishment: 1983

Head of the Department: Prof. Sanjay Kumar Singh w.e.f. 01.01.2021.

Brief introduction of the Department/School:

The Department of Computer Science and Engineering was established in July 1983. The department offers a 4-year course, B.Tech. in Computer Sc. & Engineering, 5 year Integrated Dual Degree (B.Tech. and M.Tech.) in Computer Science and Engineering from 2005-2006, and Ph.D. degree in various specializations of Computer Science and Engineering. Computer Science and Engineering is the most sought- after branch for the JEE (Advanced) selected students that come to the Institute. Our graduates have distinguished themselves in higher studies at the top Universities. They also occupy positions of eminence in the computer industry. Our Alumni remain in constant touch with us and are contributing in the development of the department. Placements for our graduates are the best in the Institute. The faculty members of the department have international experience and training. The departmental research is focused in the areas of Artificial Intelligence, Parallel and Distributed Computing, Software Engineering, Image Processing and Computer Vision, Machine Learning\Deep Learning, Medical Image Processing, Pattern Recognition, Data mining and Web mining, semantic web, Natural Language Processing (NLP), IoT, Communications, Security and Information Extraction. The department has all the facilities to carry out the related teaching and research work.

Major areas of Research

- Image Processing, Computer Vision and Pattern Recognition
- Artificial Intelligence, Natural Language Processing, and Information Retrieval
- Software Engineering
- Computer Networks
- Machine Learning
- Cyber Security
- High Performance Computing
- IoT
- Security
- Communication

Area of the Department/School (in square meters): 1454.66 Square Meters

Infrastructure

Sl. No.	Particulars	Number
1	No. of classrooms	5
2	No. of lecture halls	3
3	No. of laboratory	15
4	No. of computers available for students in the Department/School	200+

Unique Achievement / Preposition of the Department/School

Department has started two M. Tech programs in AI and IoT from July 2021.

Students on Roll

Sl. No.	Programme	I Year	II Year	III Year	IV Year	V Year & above
1.	B. Tech/B. Arch	98	109	92	73	—
2.	Dual Degree	34	37	32	37	16
3.	M. Tech/ M. Pharm	21	—	—	—	—
4.	Ph. D (Under Institute Fellowship)	09	02	04	13	20
5.	Ph. D (Under Project Fellowship)	07 (04 National Level Fellowship + 01 Part Time Permanent Staff + 02 Part Time Project Fellow)	00	01 (National Level Fellowship)	00	—
6.	Ph. D (Under Sponsored Category)	02	01	02	04	01
7	Others	01 (Sponsored)	—	01 (Part Time)	01 (External)	03 (01 Externa + 02 Sponsored)

Names of students/scholars who attended conferences/workshops/seminars and symposia abroad or in India

Sl. No.	Name of student	Roll no.	Conference/Seminar/ Symposia/Workshop	Date & venue	Financial assistance from
Abroad					
1	Rahul Mishra	17071004	22nd IEEE International Symposium on a World of Wireless, Mobile and Multimedia Networks (WoWMoM)	June 7-11, 2021 (fully virtual event)	MSIT (Ministry of Science and ICT), Korea, under the Grand Information Technology Research Center support program (IITP-2020-2015-0-00742) supervised by the IITP.
2	Rahul Mishra	17071004	IEEE International Conference on Computer Communications	10-13 May 2021 (Virtual Conference)	Awarded Student Grant

Names of students/scholars who got prizes and awards outside the Institute

Sl. No.	Name of student	Roll no.	Name of prize	Date & venue	Prize awarded by
1	Rahul Mishra	17071004	INFOCOM 2022 Student Conference Grant Award	30 March 2022	IEEE ComSoc Society

Faculty & their activities Faculty and their areas of specialisation

Sl. No.	Name, Qualifications, Employee No.	Date of award of PhD degree	Major areas of specialization
Professors			
1	Dr. Anil Kumar Tripathi (13770)	1992	Parallel/Distributed Computing and Software Engineering
2	Dr. Kaushal Kumar Shukla (13772)	1993	Artificial Intelligence, Neural Networks, Data Mining
3	Dr. Rajeev Srivastava (18363)	April 2011	Image Processing, Computer Vision, Pattern Recognition, Machine Learning, Video Surveillance, and Medical Image Analysis.
4	Dr. Sanjay Kumar Singh (18362)	August 2004	Artificial Intelligence, Data Science, Machine Learning

Sl. No.	Name, Qualifications, Employee No.	Date of award of PhD degree	Major areas of specialization
Associate Professors			
1	Dr. Bhaskar Biswas (16832)	2010	Data Mining, Web Mining and Social Networks
2	Dr. Ravi Shankar Singh (17184)	2010	Data Structures, Algorithms and High Performance Computing
3	Dr. Anil Kumar Singh (50014)	July 2010	Natural Language Processing, Computational Linguistics, Information Retrieval
4	Dr. Ruchir Gupta (50126) (On EOL)	18.06.2014	Peer-to-peer network, Social Networks, Game Theory, NLP and Machine Learning
5	Dr. Sukomal Pal (50052)	10.09.2012	Information Retrieval, Recommender Systems, Text Mining, Data Science
Assistant Professors			
1	Dr. Vinayak Shrivastava (13773)	07.03.2009	Software Engineering, Software Re-engineering
2	Dr. Ravindranath Chowdary C, (19845)	31.07.2009	Information Extraction, Text Summarization, Web Mining
3	Dr. Lakshmanan Kailasam, (50127)	28.06.2013	Reinforcement Learning, Network Science
4	Dr. Hari Prabhat Gupta (50031)	31.10.2014	Computer Networks, WSN, Ubiquitous Computing, and IoT
5	Dr. Tanima Dutta (50075)	16.10.2014	Computer Vision, Deep Neural Networks, Digital Forensics, IoT
6	Dr. Amrita Chaturvedi (50125)	12.01.2016	Software Architecture and Design Patterns, Ontologies, Artificial Intelligence, Semantic Web, Big Data Analytics and Machine Learning
7	Dr. Pratik Chattopadhyay, (50151)	06.11.2015	Image and Video Processing, Pattern Recognition, Machine Learning, Cyber-security, Generative Neural Networks
9	Dr. Ajay Pratap (50243)	16.07.2018	IoT, Fog Computing, Design and Analysis of Algorithms, Cellular Wireless and 6G networks
10	Dr. Mayank Swarnkar (50244)	30.09.2019	Network Security, System Security, Network Penetration Testing, IoT Security
11	Dr. Prasenjit Chanak (50248)	12.02.2016	Wireless Sensor Networks, Internet of Things (IoT), Cyber-Physical Networks (CPN), Consumer electronics

Technical and Non-Teaching Staff

Sl. No.	Name, Qualifications	Designation, Employee No.	Date of appointment in the department
1	Dr. Roshan Singh (Ph.D.)	System Analyst (50008)	27.06.2015 (F/N)
2	Shri Mahesh Pandey (MCA)	System Analyst (50013)	27.08.2015 (F/N)
3	Shri Ravi Kumar Bharti Bachelor of Arts)	Junior Assistant (50004)	27.04.2015 (F/N)
4	Shri Prakhar Kumar (MA - Economics Honours)	Junior Assistant (50132)	10.07.2017 (A/N)
5	Shri Ritesh Singh (BA –Archaeology)	Junior Assistant (50136)	10.07.2017 (A/N) - ***relieved on 30.09.2021 (F/N)***
6	Shri Shubham Pandey (M.Sc.-Physics)	Junior Assistant (50189)	13.06.2018 (F/N)
7	Dr. Ram Prasad Meena (Ph.D. (Botany)	Technical Superintendent (18756)	06.01.2009 (A/N)
8	Shri Raghuvir Sharan Tripathi M.Sc.(Tech.)-(Geophysics)	Technical Superintendent (18753)	03.01.2009 (F/N)
9	Shri Dinesh Kumar Tiwari (M.A.- Economics)	Senior Technician (18600)	18.08.2008 (A/N)
10	Shri Shashi Kant Singh (B.Sc.)	Senior Technician (18640)	18.08.2008 (F/N)
11	Shri Manoj Kumar Singh (B.Sc.)	Senior Technician (18601)	18.08.2008 (A/N)
12	Shri Pramod Kumar (B.Sc.)	Senior Technician (18661)	27.04.2011 (A/N)

Short-term courses/workshops/seminars/symposia/conferences organised by faculty members

Sl. No.	Coordinator	Title	Period
1	Dr. Hari Prabhat Gupta	STUDENT MOBILE APP COMPETITION,ICDCN 2022	01 day
2	Dr. Ajay Pratap	International workshop on Machine Learning and Blockchain for Smart Society (MLBSS-2022), ICDCN 2022	01 day
3	Dr. Hari Prabhat Gupta	AMLDA 2021	02 days
4	Dr. Amrita Chaturvedi	6th International Conference on Internet of Things and Connected Technologies (ICIoTCT 2021) 2021	02 days

Special lectures delivered by faculty members in other institutions

Sl. No.	Name of faculty member	Topic of lecture	Institution	Date
1	Dr. Ajay Pratap	Applications of Data Structure in IoT-enabled Cellular 5G Networks	VIT Bhopal University	March 03, 2022
2	Dr. Ajay Pratap	Fog Computing-enabled Heterogeneous 5G networks: Applications Perspective	IIIT Bhagalpur, Bihar	November 17, 2021
3	Dr. Ajay Pratap	Fog Computing-enabled Heterogeneous 5G networks	DRIEMS Autonomous Engineering College Odisha,	April 22, 2021
4	Dr. Ajay Pratap	Stable Matching based Resource Allocation for Service Provider's Revenue Maximization in 5G Networks	Missouri University of Science and Technology, USA	April 16, 2021
5	Dr. Hari Prabhat Gupta	Plagiarism basics at Writing and Publishing of Quality Research Articles and Ethics of Research	Swami Keshvanand Institute of Technology, Management & Gramothan, Jaipur	24-02-2022
6	Dr. Hari Prabhat Gupta	Deep learning for biomedical signal processing	Signal Processing Society Chapter of the IEEE Kerala	15-12-2021
7	Dr. Hari Prabhat Gupta	Intelligent IoT	Adi Shankara Institute of Engineering and Technology, Kalady, Kerala	13-09-2021
8	Dr. Hari Prabhat Gupta	Intelligent IoT	Amity University, Madhya Pradesh	28-05-2021
9	Prof. Rajeev Srivastava	AI/ML Applications in Computer Vision and IoT	UGC-HRDC, University of Allahabad, Prayagraj	16-11-2021
10	Prof. Rajeev Srivastava	ML and Deep Learning Applications in Computer Vision	IIIT Allahabad	10-12-2021
11	Prof. Rajeev Srivastava	AI/ML/DL and its Computer Vision applications	NIT Patna	23-12-2021
12	Prof. Rajeev Srivastava	Research Applications of AI/ML and Computer Vision	Amity University, Ranchi, Jharkhand	24-01-2022
13	Prof. Rajeev Srivastava	AI/ML, Computer Vision and its Research Applications	KNIT Sultanpur, UP	07.02.2022
14	Dr. Ravi Shankar Singh	Parallel Algorithms	Guru Nanak Dev University, Amritsar	31/01/2022
15	Dr. Ravi Shankar Singh	Parallel Computing	University of Kashmir, Srinagar	08/03/2022
16	Dr. Mayank Swarnkar	Network based Attacks on IoT Devices	IIITDM Jabalpur	07/06/2021
17	Dr. Mayank Swarnkar	Cyber Security Attacks and Trends	IIITDM Kancheepuram	21/10/2021
18	Dr. Mayank Swarnkar	Security Analysis: A View from Hacker's Perspective	IIT (BHU)	25/10/2021
19	Dr. Mayank Swarnkar	Network Attacks Analysis in Smart Environment	ABV-IIITM Gwalior	11/02/2022

Sl. No.	Name of faculty member	Topic of lecture	Institution	Date
20	Dr. Mayank Swarnkar	Network Security Attacks and Mitigation Techniques	IIITDM Kancheepuram	24/03/2022
21	Dr. Pratik Chattopadhyay	Video-based Gait Recognition	FDP on Computer Vision and it's Applications, Institute of Engineering and Management, Kolkata, India	08/03/2022
22	Dr. Pratik Chattopadhyay	Gait Recognition	FDP on Recent Advances in Deep Learning and its Applications, SSN College of Engineering, Kalavakkam, Chennai	08/03/2022
23	Dr. Pratik Chattopadhyay	Foundation of Machine Learning for Data Science	AICTE Sponsored FDP Phase-II on Data Analytics, Artificial, Machine, Business Applications for Engineering and Science Applications, Kingston Engineering College, Vellore, Tamilnadu	22.04.2021

Honours and awards

Sl. No.	Name of faculty member	Details of award
1	Dr. Ajay Pratap	Best paper award at IEEE SmartComp'21, USA
2	Prof. Rajeev Srivastava	Best Paper Award for the research paper "Exploiting Low-level Spatial Encoded Temporal Features For Multi Task Crowd Analysis" at International Conference on Artificial Intelligence: Theory and Applications (AITA-2021), NIT Patna, December 23-24, 2021.
3	Dr. Ravi Shankar Singh	Best Paper Award for the paper "Wavelet Based Fast Image Compression Algorithm using First Order Pixel" in the 3rd National Conference on "Recent Advancement in Physical Sciences" organized by National Institute of Technology, Uttarakhand, December 19-20, 2021

Fellowships of academic and professional societies

Sl. No.	Name of faculty member	Details of fellowship
1	Dr. Hari Prabhat Gupta	IEEE Senior Member
2	Dr. Hari Prabhat Gupta	ACM Member
3	Dr. Ravi Shankar Singh	IEEE Senior Member
4	Dr. Ravi Shankar Singh	ACM Senior Member
5	Dr. Ravi Shankar Singh	Fellow, IE(I)
6	Dr. Ravi Shankar Singh	Fellow, IETE
7	Prof. Rajeev Srivastava	Fellow, IETE, India
8	Prof. Rajeev Srivastava	Fellow, Institution of Engineers (IE), India
9	Prof. Rajeev Srivastava	Senior Member, IEEE USA
10	Prof. Rajeev Srivastava	Life Member, Indian Society for Technical Education (ISTE)
11	Dr. Tanima Dutta	IEEE Senior Member
12	Dr. Ajay Pratap	IEEE Member

Books, monographs authored/co-authored

Sl. No.	Name of author/co-author	Title	Publisher
1	P. Kumar, S. Srivastava and R. Srivastava (2021)	Basic Understanding of Medical Imaging Modalities. In: S. Saxena and Sudip Paul (eds.) High Performance Medical Image Processing (Book Chapter)	CRC Press, Tyalor's and Francis.

Sl. No.	Name of author/co-author	Title	Publisher
2	Sharma, A.K. and Srivastava, R.(2022)	Encoder-Decoder Models for Protein Secondary Structure Prediction, In Mathematics and Computer Science, Volume 2: Industrial Applications (Book Chapter)	Scrivener Publishing, USA
3	Tripathy S.K., Srivastava R. (2021)	A Transfer Learning-Based Multi-cues Multi-scale Spatial–Temporal Modeling for Effective Video-Based Crowd Counting and Density Estimation Using a Single-Column 2D-Atrous Net. In: Machine Vision and Augmented Intelligence—Theory and Applications. Lecture Notes in Electrical Engineering, vol 796. (Book Chapter)	Springer, Singapore.
4	Ashish Kumar, Sachin Srivastava, Pratik Chattopadhyay (2021)	Chapter Title: Recent Advances in Machine and Deep Learning Techniques for Image Super-resolution Book: Machine Learning Algorithms for Signal and Image Processing	WILEY-IEEE

Editorial boards of journals

Sl. No.	Name of faculty member	Position (Editor/ member)	Name of journal
1	Dr. Hari Prabhat Gupta	Lead guest editor	SI in IEEE Sensors Journal
2	Prof. Rajeev Srivastava	Reviewer	IEEE Transactions on Industrial Electronics
3	Prof. Rajeev Srivastava	Reviewer	IEEE Access
4	Prof. Rajeev Srivastava	Reviewer	Neural Computing and Applications, Springer
5	Prof. Rajeev Srivastava	Reviewer	ACM Transactions on Multimedia Computing Communications and Applications (TOMM)
6	Prof. Rajeev Srivastava	Member	Journal of Mathematics and Computational Intelligence
7	Prof. Rajeev Srivastava	Reviewer	Journal of Visual Communication and Image Representation, Elsevier
8	Dr. Tanima Dutta	Associate Guest Editor	IEEE Sensors Journal
9	Dr Sukomal Pal	Associate Editor	Springer Nature Computer Science
10	Dr Sukomal Pal	Reviewer	ACM TALLIP journal
11	Dr Sukomal Pal	Reviewer	Springer NCS journal

Research and Consultancy Sponsored research projects (Ongoing only)

Sl. No.	Title	Period	Funding agency	Amount (in lakhs of Rs.)	Project P.I.
1	A Robust Medical Image Forensics System for Smart Healthcare	2 Years 9 Months	ECR, SERB	14,01810.00	Dr. Tanima Dutta
2	Optimal Transport Derivations in Regularized Wasserstein Space for Non-linear & Linear Transformations of Deep Neural Networks	3 Years	Matrics, SERB	6,60000.00	Dr. Tanima Dutta
3	National Post Doctoral Fellowship (N-PDF)	Feb 2022 - Feb 2024	SERB	21,31,200INR	Dr Rahul Bansal (N-PDF) with Dr Hari Prahbat Gupta mentor
4	Resource-Optimized Fog Computing for Smart Healthcare Application in IoT-enabled Heterogeneous Networks	Dec 2020-Dec 2022	SERB	29,06,970 INR	Dr. Ajay Pratap
5	An Artificial Intelligence supported Intrusion Detection & Behavior Monitoring System for Crucial Data Servers against Novel Cyber Attacks	Dec'21 to Dec'23	SERB	26,93,540 INR	Dr. Mayank Swarnkar

Sl. No.	Title	Period	Funding agency	Amount (in lakhs of Rs.)	Project P.I.
6	Developing Improved Algorithms for Intelligent Video Surveillance	March 2021 - March 2024	CRG, SERB	29,08,345 INR	Dr. Pratik Chattopadhyay
7	National Post Doctoral Fellowship (N-PDF)	Jan 2021 - Jan 2023	SERB	21,31,200INR	Dr Pradeepika Verma (N-PDF) with Dr Sukomal Pal (mentor)

Industrial consultancy projects (Ongoing only)

Sl. No.	Name of faculty member	Title	Industry	Amount (in lakhs of Rs.)
1	Dr. Ravi Shankar Singh and Dr. Sanjay Kumar Singh	Cattle verification using muzzle print	Heritage Foods Limited, Hyderabad	10 lakhs

Faculty members' participation with other universities under MoUs (Ongoing only)

Dr Sukomal Pal, with University of Hildesheim, Germany (since 2019) is in talks with Prof Thomas Mandl who applied for Erasmus+ mobility program between IIT(BHU) and the University of Hildesheim, Germany for student and staff mobility between the two Institutions.

Research publications

Total number of papers published in refereed National journals	0
Total number of papers published in refereed International journals	64
Total number of papers presented in National conferences	0
Total number of papers presented in International conferences	13

Refereed International journals

1. Sarika Keshri, Shyam Lal, **K.K. Shukla** (2022) Picture Quality and Compression Analysis of Multilevel Legendre Wavelet Transformation Based Image Compression Technique, Multimedia Tools and Applications, *Early Access,* : Feb 2022 [Link]

2. Manisha Singla, Debdas Ghosh, **K. K. Shukla** (2021) pin-TSVM: A Robust Transductive Support Vector Machine and its Application to the Detection of COVID-19 Infected Patients, Neural Processing Letters, Springer (2021) 53:3981–4010 [Link]

3. Vandana Bharti, B Biswas, and **K K Shukla** (2021) A Novel Multi-objective GDWCN-PSO Algorithm and its Application to Medical Data Security. ACM Transactions on Internet Technology. Vol 21, Issue 2, June 2021, Article no.:46 pp. 1-28 DOI:10.1145/3397679 [Link]

4. Vandana Bharati, Bhaskar Biswas, **K K Shukla**, (April 2021) EMOCGAN: A Novel Evolutionary Multiobjective Cyclic Generative Adversarial Network and its application to unpaired image translation, Neural Computing and Applications (2021), Special Issue on Neural Computing and Applications in Computer Vision and Image Processing ISSN: 0941-0643 (Print) 1433-3058 (Online) Springer, DOI: https://doi.org/10.1007/s00521-021-05975-y

5. D R Sahu, J C Yao, M Verma, **K K Shukla,** (2021) Convergence rate analysis of proximal gradient methods with applications to composite minimization problems, *Optimization*, Taylor & Francis, Vol 70, Issue 1, January 2021, pages 75-100. DOI 10.1080/02331934.2019.1702040 [Link]

6. Nitika Nigam, **Tanima Dutta**, Deepali Verma (2022) "Fall-perceived Action Recognition of Persons with Neurological Disorders using Semantic Supervision," in IEEE Transactions on Cognitive and Developmental Systems, 2022, doi: 10.1109/TCDS.2022.3157813.

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12. Santosh Kumar Tripathy, Rajeev Srivastava, "Exploiting Low-level Spatial Encoded Temporal Features For Multi Task Crowd Analysis", International Conference on Artificial Intelligence: Theory & Applications (AITA-2021), 23-24 December'2021, NIT Patna. (Best Paper Award)

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Key Instruments:

Photos of Laboratory/Best Equipment in Laboratory

Figure 1: Workstation with 2 TITAN 1080Ti GPUs and 1 Titan XP GPU for Deep Learning in Pattern Recognition Laboratory

Figure 2: Students and research scholars working at Pattern Recognition Laboratory

11. Department of Electrical Engineering

Full Name of Department: Department of Electrical Engineering

Year of Establishment: 1919

Head of the Department: Prof. R. K. Pandey w.e.f. 09.08.2021

Brief introduction of the Department/School:

Mahamana Pt. Madan Mohan Malviya founded BHU in the year 1916, with benevolent and magnanimous contributions of the then maharajas and other persons of eminence. The University was nurtured by Sir Sunderlal, as the 1st V.C. of the university, followed by the great visionaries, such as Pt. Madan Mohan Malviya, Acharya Narendradev, Sir S. Radhakrishnan and many other eminent personalities.

The Benaras Engineering College (BENCO) was started in the year 1919, with its strong foundation laid by revered Prof. Charles A. King, Prof. H. P. Philpot and Prof. M. Sengupta. With the passage of time, College of Mining and Metallurgy (MINMET) and College of Technology (TECHNO) were included, expanding its horizon. These three colleges were merged and named as Institute of Technology in the year 1968 with a view to give more autonomy for its better perspective in terms of academic as well as administrative decisions. Its undergraduate students are admitted through Joint Entrance Examination (JEE) being conducted for all IITs.

Since the inception of BENCO in 1919, combined Bachelor's degree in Mechanical and Electrical Engineering was awarded till 1952. Department of Mechanical Engineering and Department of Electrical Engineering were separated in 1953 and conferred separate degrees in respective disciplines.

Presently, Department of Electrical Engineering runs five post graduate (M. Tech.) programmes in Electrical Machines and Drives (started in 1956), Power Systems (started in 1964), Control Systems (started in 1964), Power Electronics (started in 1982) and Interdisciplinary Systems Engineering (started in, 1982) and Ph. D. programme in all disciplines of Electrical Engineering. The department has also a five year Integrated Dual Degree Program (started in 2006) leading to Master's degree with specialization in Power Electronics.

The department has been sanctioned Special Assistance Programme (SAP) of UGC since 1988 and COSIST program of UGC from 1995 to 2000. Apart from these, the department has been conducting research projects funded by DST, AICTE, CPRI and other R&D organizations of Govt. of India.

Department has very good placement records over the years. The students of this department are joining core companies such as PGCIL, IOCL, HPCL, Trident, Reliance, Maruti, etc. Electronics companies such as Broadcom, Sony, etc are also regularly recruiting students of this department. Our students are also regularly joining software companies such as Morgan Stanley, Goldman Sachs, Citrix, Oracle, SISO, etc. The vast number of job offers is mainly due to the versatility of the branch which ensures that students are allowed to sit for interviews in software, core electrical, electronic as well as non-technical companies.

Some of the department's famous alumni includes, Mr.Nikesh Arora: Senior Vice President and Chief Business Officer at Google, Mr. Rajiv Dogra: Indian diplomat, Ex- Consul General to Karachi, Pakistan, Mr. Gyanesh Pandey: Co-founder, CEO and CTO of Husk Power Systems and Mr. Narla Tata Rao: Winner of Padma Shree, a doyen of power sector in India.

The department is pursuing academic activities with the following goals and objectives:

- Further up-gradation and technological modernization of infrastructural facilities.
- Encouraging teaching innovations through audio visual and multimedia aids.
- Channelizing expertise of faculty in the frontier areas of electrical engineering.
- Research, testing and consultancy.
- Training the undergraduate and post graduate students towards entrepreneurship in consonance with liberalization and privatization policies of the Government.

- Development of energy efficient, environment-friendly electrical technologies as per the norms set by various planning, regulatory and other statutory bodies

Major areas of Research

Power System, Power Electronics, Machines and Drives, Control System

Area of the Department/School (in square meters):

Infrastructure

Sl. No.	Particulars	Number
1	No. of Classrooms	7 (Classrooms and Lecture Halls are same)
2	No. of Lecture Halls	
3	No. of Laboratory	5
4	No. of Computers available for students in the Department/School	140

Unique Achievement / Preposition of the Department/School

Academic programmes offered New Courses Introduced

Sl. No.	Course code	Course name	Course credits
1	EE-319	Fundamentals of Electrical Circuits and Systems	11
2	EE-349	Fundamentals of Power Transmission and Distribution System	09
3	EE-429	Fundamentals of Electric Drives	09
4	EE-439	Elements of Power Electronic and Applications	09

Students on Roll

Sl. No.	Programme	I Year	II Year	III Year	IV Year	V Year & above
1.	B. Tech/B. Arch	110	127	112	96	-
2.	Dual Degree	31	34	26	23	22
3.	M. Tech/ M. Pharm	27	35	-	-	-
4.	Ph. D (Under Institute Fellowship)	7	13	8	6	4
5.	Ph. D (Under Project Fellowship)	1	-	2	-	-
6.	Ph. D (Under Sponsored Category/QIP category	1	2	1	-	-

Names of students/scholars who attended conferences/ workshops/seminars and symposia abroad or in India

Sl. No.	Name of student	Roll no.	Conference/Seminar/Symposia/Workshop	Date & venue	Financial assistance from
Ìndia					
1	Lokesh Kumar Yadav	16081008	International Conference on Advances in Computing and Data Sciences (attended online)	April, 23-24, 2021, Pune (India)	Self-financed
2	Akhilesh Kumar Barnwal	16081006	International Conference on Sustainable Technology and Advanced Computing in Electrical Engineering (attended online)	November, 11-12, 2021, SVNIT, Surat (India)	Self-financed
3	Aakash Singh	18081004	Conference	2-5 Jan 2022, Trivendrum	IIT (BHU)

Sl. No.	Name of student	Roll no.	Conference/Seminar/Symposia/Workshop	Date & venue	Financial assistance from
Abroad					
1	S. K. Samal	Ph.D. Student	IEEE Industry Applications Society Annual Meeting (IAS), Vancouver, BC, Canada.	October 10-14, 2021	Online mode
2	S. K. Samal	Ph.D. Student	Applied Power Electronics Conference (APEC), Houston, TX.	March 20-24, 2022	Online mode
3	Vulavakayala Siva	19081005	Conference	June 2021	IIT (BHU)
4	Abhishek Singh	20081505	6th International Conference on Power Energy Systems and Applications (ICoPESA) –IEEE, presented two papers	25-27th February 2022	The presentation was given online. Financial assistance was provided from the CPDA fund of the supervisor
5	Simant Kumar Samal	17081005	IEEE APEC	March 20-24,2022, Houstan, USA	On-line
6	Pawan Kumar	17081009	IEEE APEC	March 20-24,2022, Houstan, USA	On-line
7	Pawan Kumar	17081009	IEEE ECCE	Oct. 10-14, 2021 Vancouver, Canada	On-line
8	Soumya Ranjan Meher	17081007	IEEE ECCE	Oct. 10-14, 2021 Vancouver, Canada	On-line
9	Manash Kumar Mishra	17081004	IEEE APEC	March 20-24,2022, Houstan, USA	On-line
10	Manash Kumar Mishra	17081004	IEEE ECCE	Oct. 10-14, 2021 Vancouver, Canada	On-line
11	Manash Kumar Mishra	17081004	IEEE APEC	June 09-12, 2021 Phoenix, AZ, USA	On-line
12	Amit Kumar Thakur	15081005	2021 IEEE 6th International Conference on Computing, Communication and Automation (ICCCA), 2021 IEEE 8th Uttar Pradesh Section International Conference on Electrical, Electronics and Computer Engineering (UPCON), IEEE IAS GlobConET.	December 17-19, 2021, Nov. 11-13, 2021, May 20-21 2022.	
13	Devesh Shukla	15081001	IEEE IAS GlobConET.	May 20-21 2022.	
14	Ekta Purwar	14081009	11th International Conference on Electronics, Communications and Networks (CECNet), 6th International Conference on New Energy and Future Energy System (NEFES).	Nov 18-21,2021, Nov 1-4, 2021.	
15	Harshit Shukla	18085097	2021 IEEE 8th Uttar Pradesh Section International Conference on Electrical, Electronics and Computer Engineering (UPCON).	Nov. 11-13, 2021.	
16	Harsh Nadar	18085093	2021 IEEE 8th Uttar Pradesh Section International Conference on Electrical, Electronics and Computer Engineering (UPCON).	Nov. 11-13, 2021.	

Sl. No.	Name of student	Roll no.	Conference/Seminar/Symposia/Workshop	Date & venue	Financial assistance from
17	M. Anurag Swami	18082102	2021 IEEE 6th International Conference on Computing, Communication and Automation (ICCCA).	December 17-19, 2021.	
18	Manav Bagga	18085088	2021 IEEE 8th Uttar Pradesh Section International Conference on Electrical, Electronics and Computer Engineering (UPCON).	Nov. 11-13, 2021.	
19	Umare Sonali Vasant	18082112	IEEE IAS GlobConET.	May 20-21 2022.	
20	Sunil Kumar	18181001	Conference	13-16 oct. 2021 Canada	CPDA
21	Vijay Kr. Singh	19081007	Conference	13-16 oct. 2021 Canada	CPDA
22	Sandeep Kr. Soni	17181002	Conference	08-10 Sept. 2021 Japan	NA
23	Yogita Chaudhary	16084021	Conference	22-25 June 2021 Italy	MATRICS
24	Yogita Chaudhary	16084021	Conference	12-16 July 2021 Netherland	MATRICS

Names of students/scholars who got prizes and awards outside the Institute

Sl. No.	Name of student	Roll no.	Name of prize	Date & venue	Prize awarded by
1	Amit Kr. Thakur M. Anurag Swami	15081005 18082102	Best paper award	Dec 17-19, 2021 Aurel Vlaicu University of Arad, Romania	2021 IEEE 6th International Conference on Computing, Communication and Automation (ICCCA)

Names of scholars/students who won convocation/Institute day prizes

Sl. No.	Name of Student	Roll No.	Name of prize	Prize awarded by
1	Mr. Kushal Tibrewal	17085088	President Gold Medal	IIT (BHU)

Faculty & their activities Faculty and their areas of specialisation

Sl. No.	Name, Qualifications, Employee No.	Date of award of PhD Degree	Major Areas of Specialization (Max. 3 Areas)
PROFESSORS			
	Prof. S P Singh, Ph.D., Emp. No.13783	1991	Power System Operation and Control, Smart Grid, Distribution Automation.
	Prof. R. K. Pandey Ph.D.,Emp. No.16623	22/05/1992	EHV AC & DC Transmission, FACTS Controllers Design & Analysis, Integrated Large Power System Operation & Control
	Prof. Rakesh Kumar Srivastava, B.Tech. EE; M.Tech. EMD; Ph.D. EE; Dip in German. 13788	06 March 2000	Electrical Machines & Drives, Linear Induction Motor, Permanent Magnet Machines
	Prof. R. K. Misra Ph.D. Emp. No.13791	23/03/ 2005	Power Distribution Systems , AI and its application in Power Systems, Control and Applications of Computational Intelligence in Power Systems
	Prof. R. Mahanty Ph.D., Emp. No. 13792	10/10/2005	Power Electronics
	Prof. Devender Singh Ph.D., Emp. No.17094	05/04/ 2002	Short term Load Forecasting, State Estimation, Distributed Generation,

Sl. No.	Name, Qualifications, Employee No.	Date of award of PhD Degree	Major Areas of Specialization (Max. 3 Areas)
	Prof. M. K. Verma Ph.D., Emp. No. 17590	31/5/2005	Power System voltage stability, Application of FACTS controllers, Smart grid
	Prof. R.K. Saket Emp. No. 17548	16/06/2006	Reliability Engineering, Power System Reliability, Electrical Machines & Drives
ASSOCIATE PROFESSORS			
	Dr. Kalpana Chaudhary, Ph. D, Emp no. 16629	19th July 2009	Power Electronics, Electrical Machines and drives, Renewable energy generation
	Dr. Santosh Kumar Singh, PhD, Emp. No.17446	28th November 2011	Power Electronics, Electric Drives, Renewable energy integration
	Dr. R. K. Singh Ph.D., Emp. No. 17464	12/02/2013	Power Electronics, Energy Storage System and Optimal Bidirectional Battery Chargers, Modelling , simulation, and control of Power Electronics System, Power Electronics for the Hybrid Renewable AC/DC micro-grid, Modeling and control for Point-of-load's, EV/PHEV interface with renewable energy and grid.
	Dr S. R. Mohanty, PhD (IIT Kharagpur), (Employee No.-50224)	23/02/2002	Disturbance detection and classification and protection issues in power system and Microgrid, Multi-objective Robust Control and optimization in Microgrid, Wide area Monitoring and control in Smart grid
	Dr. V. N. Lal Ph.D., Emp. No. 175549	09/09/2015	Power Electronics for Microgrid and Renewables, Electric Vehicle, Design and Control of Solar PV System, Hybrid AC/DC Converters, Bidirectional Power Converters
	Dr. Sandip Ghosh Ph.D., Emp. No 50063	11/11/2010	Control System Engineering
ASSISTANT PROFESSORS			
	Dr. Jeewan Chandra Pandey PhD, Emp. No. 17538	02-02-2018	(i)High Voltage electrical insulation (ii) Nanodielectrics
	Dr. Manish Kumar Ph.D., Emp. No. 17101		Renewable Energy Technologies Plasma Physics Coherent Radiation Generation, Terahertz Radiation Generation
	Dr. Shyam Kamal Ph.D., Emp No 50062	14-08-2014	Nonlinear control, Adaptive control, Fault Tolerant Control
	Dr. N K Swami Naidu Ph.D., Emp. No 50209	27/05/2015	Wind Energy Conversion Systems, Battery Energy Storage Systems, Microgrid
	Ms. Sobhita Meher M. Tech., Emp No 17589	---	Computer Science
	Dr. Chinmaya K A Emp No 50257	05/08/2019	Electric Machines & Drives, Power Electronics, Electric Vehicles (EVs).
	Dr. Avirup Maulik Emp No 50258	21-08-2019	Power systems, Distribution system, Microgrid optimization
	Dr. Naveen Yalla, 50293	26/08/2019	Multilevel Converters, EV Chargers, Magnetics
	Dr. Rabindra Mohanty 50302	16/07/2018	Power system protection, Microgrids, Cyber security in Power Systems

Technical and Non-Teaching Staff

Sl. No.	Name	Qualification	Designation, Employee Number	Date of appointment	
				In IT(BHU)/ (BHU)	In the Department
	Mr. R. C. Sharma	B.A.	Technical Superintendent,14008	26.04.1991	26.04.1991
	Mr. Sanjeev Kumar Maurya	B.Sc.	Junior Superintendent,50149	21.07.2017	25.07.2017
	Mr. Sunil Kumar Sonkar	MBA	Junior Assistant, 19876	19.02.2015	27.04.2015

Sl. No.	Name	Qualification	Designation, Employee Number	Date of appointment	
				In IT(BHU)/ (BHU)	In the Department
	Mr. A.N.Singh	M.A., B.Sc., CIC	Technical Superintendent, 14007	16.06.1988	16.06.1988
	Mr. Radhe Shyam Patel	Intermediate, Polytechnic in EE	Technical Superintendent, 18648	05.08.2008	05.08.2008
	Mr. B. L. Singh	B.A., Diploma in E.E., DBM	Technical Superintendent, 18657	06.08.2008	06.08.2008
	Mr. Umesh Mishra	B.Sc.	Senior Technician, 18658	05.08.2008	05.08.2008
	Mr. Satish Kumar Singh	B.A.	Senior Technician, 18652	06.08.2008	06.08.2008
	Mr. Dharmendra Kumar Singh	High School+ITI	Senior Technician, 18647	07.08.2008	07.08.2008
	Mr. Sanjay Kumar Bharti	B.Sc., B.Ed.	Senior Technician, 18659	11.08.2008	11.08.2008
	Mrs. Ranjana Singh	Postgraduate	Senior Technician, 14740	16.05.1996	13.04.2012
	Mr. Anjneya Kumar	M.Sc., B.Ed.	Senior Technician, 19649	03.08.2012	21.09.2012

Short-term courses/workshops/seminars/symposia/conferences organised by faculty members

Sl. No.	Coordinator	Title	Period
1	Dr. Santosh K Singh	Online Course module on Electric Vehicles and their Ecosystem	Feb/March 2022
2	Dr. R. K. Singh	Short Term Course on Data Analytics and Predictive Technologies	5th – 10th July 2021
3	Dr. Shyam Kamal	Development of Autonomous Electric Wheel Chairs for Disabilities	01- 05 December 2021

Short-term courses/workshops/seminars/symposia/conferences/training programmes attended by faculty members in academic institutions and public sector undertakings

Sl. No.	Name of faculty member	Title	Period and venue
Seminars/Symposia/Conferences			
	Prof. R K Srivastava (self-learning)	IEEE Blended Learning Program "Introduction to Electromagnetic Compatibility"	15 April 2021 to 15 July 2021 Online mode
	Prof. R K Srivastava Presented by Dr Shailendra Kumar Gupta online	Wind turbine emulator in lab environment	ITEC India,2021 Dec 16-18, 2021
	Prof. Rajendra Kumar Pandey	International Conference on Smart Energy and Advancement in Power Technologies 2021 (ICSEAPT'21) Smart Energy Systems	Sept. 6-8, 2021 online mode
	Prof. Rajendra Kumar Pandey	International Tech Talk on "Hydrogen & Fuel Cell: India's Mission & Economy" Green Hydrogen to Combat Climate Change for a Clean, Green, Resilient World	Oct 08, 2021
	Prof. Rajendra Kumar Pandey	Electric Vehicles and Their Eco System Impact of EV on Grid -An Overview in India Context	Feb 18, 2022
	Prof. Rajendra Kumar Pandey	ASIA STEEL 2021, Korea EFFECT OF ELECTROPULSING ON TRANSFORMATION KINETICS OF METASTABLE AUSTENITE AND BAINITE IN STEEL	Dec 5-9, 2021
	Prof. Rajendra Kumar Pandey	Workshop on Pulsed Power Technology and Applications (WSPPTA-2021), BARC	25 – 27 November 2021
	Prof. Rajendra Kumar Pandey	DAE-BRNS International Symposium on Vacuum Science and Technology and its Applications in Accelerators Effect of Electropulsing on Bulk Nanostructured Steels	Feb. 16-19, 2022

Sl. No.	Name of faculty member	Title	Period and venue
	Dr. Sandip Ghosh	Electric Vehicles and Their Eco System Impact of EV on Grid -An Overview in India Context	Feb 18, 2022
	Dr. V. N. Lal	ASIA STEEL 2021, Korea EFFECT OF ELECTROPULSING ON TRANSFORMATION KINETICS OF METASTABLE AUSTENITE AND BAINITE IN STEEL	Dec 5-9, 2021
	Dr. V. N. Lal	Workshop on Pulsed Power Technology and Applications (WSPPTA-2021), BARC	25 – 27 November 2021
Meetings			
1	Prof. R K Srivastava Chairing technical session	DAE-BRNS International Symposium on Vacuum Science and Technology and its Applications in Accelerators Effect of Electropulsing on Bulk Nanostructured Steels	Feb. 16-19, 2022
2	Dr. Santosh K Singh	IEEE PELS TC2 Technical committee on Electrified Transportation Systems	7th September 2021, online
3	Dr. Santosh K Singh	IEEE PELS TC 11 (Power Electronics for Aerospace Applications)	10th March 2022, online
4	Dr. Santosh K Singh	IEEE PELS TC2 Technical committee on Power Components, Integration, and Power ICs	17th March 2022, online
5	Prof. Rajendra Kumar Pandey	Chairman (Solar Energy Research and Development) SERD DST Expert Panel for ASIS Stream	Feb 23, 2022
6	Prof. Rajendra Kumar Pandey	Expert Member Mission Innovations DST Expert Group on Mission Innovation Challenge-Off Grid Access to Electricity	June 29, 2021
7	Prof. Rajendra Kumar Pandey	Chairman (Solar Energy Research and Development) SERD DST Expert Group on Mission Innovation Challenge -Off Grid Access to Electricity	March 03, 2022

Special lectures delivered by faculty members in other institutions

Sl. No.	Name of faculty member	Topic of lecture	Institution	Date
1	Prof. M. K. Verma	Towards Development of Smart Distribution System	NIT, Hamirpur	3/1/2022
2	Prof. R.K. Saket	Importance of Reliability Engineering in 21st Century	Rajkiya Engineering College Sonbhadra, UP	28.06.2021
3	Prof. R K Srivastava	Linear Induction Motors	Indian Railways Online	18 Feb 22 (12 noon to 1 PM)
4	Prof. R K Srivastava	Linear Induction Motor Classification & Operation	Indian Railways Online	23 Feb 22 (12 noon to 1 PM)
5	Prof. R K Srivastava	Electromagnetic Levitation	Indian Railways Online	25 Feb 22 (12 noon to 1 PM)
6	Prof. R K Srivastava	Methods of Analysis of LIM Brief Introduction to Space Fourier Transform approach	Indian Railways Online	09 March 22 (12 noon to 1 PM)
7	Prof. R K Srivastava	Numerical Analysis of SLIM Software	Indian Railways Online	22 March 22 (12 noon to 1 PM)
8	Prof. R. Mahanty	Active power filter for power quality improvement	KNIT, Sultanpur	14.06.2021
9	Prof. R. Mahanty	Power quality improvement using power electronic converters	REVA University	01.02.2022
10	Dr. Santosh K Singh	Power electronics interface and design for Microgrid DC & AC sources	RIET JAIPUR	April 2021

Sl. No.	Name of faculty member	Topic of lecture	Institution	Date
11	Dr. Santosh K Singh	Integration of Electric vehicle charging stations: Issues and Power electronic solutions	LNCT Bhopal	May 2021
12	Dr. Santosh K Singh	Silicon carbide converters for Electric vehicles	MITS Chittor	Nov 2021
13	Dr. Santosh K Singh	Silicon to Silicon carbide converters: Prospects and challenge	MANIT Bhopal	Nov 2021
14	Dr. Santosh K Singh	WBG Power converters for Electric Vehicles	Rajkiya Engineering College Ambedkar Nagar	Feb 2022
15	Dr. Sandip Ghosh	Networked control systems: stability and control	Manipal University, Jaipur, FDP on "Recent Trends and Challenges in Robotics and Automation"	13/12/2021
16	Dr. Sandip Ghosh	Modeling and control of twin-rotor MIMO systems	NIT Nagaland, ATAL Sponsored Online Five Days Workshop On "Robotics"	17-18/11/2021
17	Dr. Sandip Ghosh	Robust control design of induction motor in multivariable setup	Madan Mohan Malaviya University of Technology Gorakhpur, FDP on Recent Advances in Control Systems (RACS-2021)	19/10/2021
18	Dr. Sandip Ghosh	Linear Parameter Varying Systems and Control	IIT Goa, Tutorial session at International Symposium on Intelligent Robotics and Industrial Automation	14/09/2021
19	Dr. S R Mohanty	Protection Issues In Transmission and Distribution System	IIT Roorkee	Nov 2021
20	Dr. S R Mohanty	Critical Challenge of Renewables Impact on Power Network and Possible Solution	NIT Rourkela	Nov 2021
21	Dr. Shyam Kamal	Free-will Arbitrary Time Stability and Stabilization	Muş Alparslan University Turkey	20-22 May 2021
22	Dr. Shyam Kamal	Free-will Arbitrary Time Stability and Stabilization	NIT Patna	06 June 2021
23	Dr. Shyam Kamal	A Journey from Calculus to Control	NIT Patna	01 June 2021
24	Prof. Rajendra Kumar Pandey	Smart Energy Systems: An Integrated Control Architecture for Quality Power and Network Stability	NIT Jamshedpur	Sept. 8, 2021 Google Meet
25	Prof. Rajendra Kumar Pandey	Hydrogen Energy- Vehicle Industry and Energy Storage for Aatma Nirbhar Bharat	International Tech Talk on "Hydrogen & Fuel Cell: India's Mission & Economy"	Oct 08, 2021, I 3:30 Hrs to 6.00 Hrs I Google Meet
26	Prof. Rajendra Kumar Pandey	Numerical Protection and advances	G. H. RAISONI COLLEGE OF ENGINEERING, Nagpur	March 09, 2022
27	Dr. Chinmaya K A	EV charging methods and its challenges	Shri Vishnu Engineering College for Women (Autonomous) Bhimavaram,	10/03/2022
28	Dr. Chinmaya K A	Research areas and methodologies for EV charging	CVR Engg College, Hyderabad	25/03/2022
29	Dr. Chinmaya K A	Advanced Electrivc Drives with integrated charging feature for EVs	Nitte Meenakshi Institute of Technology, Bangalor	26/03/2022

Honours and awards

Sl. No.	Name of faculty member	Details of award
1	Prof. Rajendra Kumar Pandey	• Vice Chairman (New Technologies/ Innovations/ Hydrogen Sector) **Renewable Energy Society of India** • Advisory Board Member RESI
2	Dr. R. K. Singh	Shyama Varshney BENCO-64 Best Educator Award by IIT (BHU) Varanasi 2021

Fellowships of academic and professional societies

Sl. No.	Name of faculty member	Details of fellowship
1	Dr. Shyam Kamal	INAE Young Engineers
2	Dr. Shyam Kamal	INAE Associate
3	Prof. Rajendra Kumar Pandey	Fellow RESI

Books, monographs authored/co-authored

Sl. No.	Name of author/co-author	Title	Publisher
1	Lokesh Kumar Yadav, Mitresh Kumar Verma and Puneet Joshi	Optimal Sizing and Siting of Multiple Dispersed Generation System Using Metaheuristic Algorithm (Part of the Communications in Computer and Information Science book series (CCIS, volume 1440))	Springer
2	Vivek Kumar,S.R.Mohanty	Denial-of-Service Attack Resilient Control for Autonomous AC microgrid	Microgrid Cyber physical System: Renewable Energies and Plug-in Vehicles Integration" under the ELESVIER publication
3	D.P. Kothari, I.J. Nagrath, R.K. Saket	Modern Power System Analysis, 5th Edition 2022	McGraw Hill, New Delhi, India
4	Vijay Babu Pamshetti, V V S N Murty, S P Singh and Ashwani Kumar Sharma	Chapter: Multi-objective Stochastic Volt/VAR Optimization in AC-DC Hybrid Distribution Network Considering Soft Open Point, Book: Renewable Energy Towards Smart Grid. Lecture Notes in Electrical Engineering, vol. 823. https://doi.org/10.1007/978-981-16-7472-3_23, January 2022.	Springer, Singapore
5	Mekhilef, S., Favorskaya, M., Pandey, R.K., Shaw, R.N. (Eds.)	Innovations in Electrical and Electronic Engineering	https://www.springer.com/gp/book/9789811607486

Editorial boards of journals

Sl. No.	Name of faculty member	Position (editor/ member)	Name of journal
1	Prof. R.K. Saket	Associate Editor	IET Renewable Power Generation (UK)
2	Prof. R.K. Saket	Associate Editor	IET Electrical Systems in Transportation (UK)
3	Dr. Shyam Kamal	Associate Editor	International Journal of Robust and Nonlinear Control

Design and Development Activities

New facilities added

Sl. No.	Details (Infrastructure, equipment, etc.)	Value (in lakhs of rupees)
1	Electrical lighting in Electrical machine and Drives Lab	1 lakh
2	Siemens SINCAL and PSSE software for power system analysis	10.0 lakhs
3	Fuel Cell Stack	7 lakhs
4	2 kW Photovoltaic panels	2 lakhs
5	PSCAD Professional V 5.	7 lakhs

Patents filed

Sl. No.	Name of faculty member	Title of patent
1	Dr. R. K. Singh	A Novel DC/DC Converter with Both Current and Voltage Source Property for Optimal Battery Charging System
2	Prof, R.K. Saket	Om Prakash Bharti, Brijesh Kumar, R.K. Saket (2021), "A System for Controller of DFIG-Based Wind Turbine for Wind Power Generation and its Method", Australian Patent, Australian Government, Innovation Patent, Patent Number: 2021105259, Grant Date : November 24, 2021.

Research and Consultancy Sponsored research projects (Ongoing only)

Sl. No.	Title	Period	Funding agency	Amount (in lakhs of Rs.)	Project P.I
1	CARS project Design and Analysis of Linear Induction Motor Drive for EMALS	17 Feb 20 to 17 Aug 2020	DRDO(E) Pune	30	Prof. R K Srivastava
2	Design and development of Cybersecured Smart Power interface for Energy-Local area network (E-LAN)	Jan 2022-Jan 2025	C3iHub IIT Kanpur	14.64	Dr. Santosh K Singh
3	Design and Development of Next Generation Cost Effective Reconfigurable On-Board Battery Charger with Health and Fault Monitoring	April 1, 2021 to March 31, 2023	MeitY	181.92	Dr. R. K. Singh
4	Demonstrable Prototype of IoT enabled DC/AC Smart Grid at Library Building, IIT(BHU) Varanasi with Solar Photovoltaic Integration	August 25, 2021 to August 24, 2023	I-DAPT Hub Foundation, IIT(BHU) Varanasi	19.75	Dr. R. K. Singh
5	Li-ion based inverter for household application	March 23	Inverted Energy Pvt. Ltd.	5.95	Dr. R. K. Singh
6	Output Feedback Controller Design for Linear Parameter Varying Systems	07/2019-07/2022	SERB-Core Research Grant	57.32	Dr. Sandip Ghosh
7	Development of a solar standalone derive system for electric boats	03/2021-07/2022	Ornate Agencies Private Limited and IDAPT Hub (IIT BHU)	5.0+6.6	Dr. Sandip Ghosh
8	Development of an efficient module-integrated battery management systemProject	23/03/2022–22/03/2024	MeitY	99.61	Dr. Sandip Ghosh
9	Development of cyber resilient protection scheme for AC microgrid	April 2021 for 3 years	Department of Science and Technology, New Delhi	43	Dr. S.R. Mohanty
10	Development of a Real-Time Cyber-Attack Detection Module and Its Hardware-in-loop Testing for an Integrated Power Network	January 2022 for 3 years	Central Power Research Institute	49	Dr. S.R. Mohanty

Sl. No.	Title	Period	Funding agency	Amount (in lakhs of Rs.)	Project P.I
11	Electrolytic Capacitor Less Six Pulse DC Link Photovoltaic System connected to Grid	March 30,2021 to March 29,2023	CPRI	45.44	Dr. V. N. Lal
12	Design, Development, and Demonstration of Solar-PV integrated On-board and Off-board Electric-Rickshaw Charging Infrastructure	Sept 1, 2021 to August 31, 2021	DST	91.31	Dr. V. N. Lal
13	Reliability Evaluation and Performance Enhancement of Grid Integrated Hybrid Renewable Power Systems	3 Years	SERB	41.36	Prof. R.K. Saket
14	Prototype development of Fuel Cell and Photovoltaic Based Innovative Hybrid DC Power Pack for Remote Applications	Three Years, Started w.e.f. 25.03.2021	Science and Engineering Research Board (SERB), Govt. of India	38.10	Dr. Kalpana Chaudhary
15	Development of Energy Efficient and Compact Electric Drive Train for Fuel Cell Electric Vehicle	Three Years, Started w.e.f. 23.02.22	Science and Engineering Research Board (SERB), Govt. of India	49.17	Dr. Kalpana Chaudhary

Industrial consultancy projects (Ongoing only)

Sl. No.	Name of faculty member	Title	Industry	Amount (in lakhs of Rs.)
1	Prof. R. Mahanty	Inspection of Electrical works of Shri Kashi Vishwanath Mandir Corridor	**1**	R. Mahanty
2	Prof. R. Mahanty	Third party quality assurance of E&M works of residential flats of RGSC, BHU, Barkachha	**2**	R. Mahanty
3	Prof. R. Mahanty	Third part quality check and inspection of electrical and other service related works of state Ground Water Informatics Center, Lucknow	**3**	R. Mahanty
4	Dr. Santosh K Singh	Vetting of Power supply and Motors for Mussoorie Water Supply Scheme	Avadh consultancy services, Dehradun	1.18
5	Dr. R. K. Singh	Technical report on Media Streaming Device and its Appropriate HSN Classification	Flipkart India Pvt. Ltd.	2.489
6	Prof. S.P Singh and Dr. S.R Mohanty	Hindalco power supply system studies	Hindalco Renusagar	14
7	Prof. S.P. Singh	Assessment of impact on power supply network of Hindalco after surrendering TL # 3& 4	Hindalco Industries Limited. Renukoot, Sonbhadra (U.P.)	16.52
8	Prof. Rajendra Kumar Pandey	Solar streetlight system (Solar Panel, Solar Battery and Solar LED streetlight)	Suntree Electrical & Solar Solutions	0.80
9	**Prof. Rajendra Kumar Pandey**	**132 kV Lalganj Chanbe Double Circuit Transmission Line Inspection**	**UP Power Transmission Corporation Uttar Pradesh Govt.**	**1.475**

Faculty members' participation with other universities under MoUs (Ongoing only)

1. Dr. Santosh K Singh is participating with C3iHub-IIT Kanpur under MoU, to design and develop Cybersecured Smart Power interface for Energy-Local area network.

Research publications

Total number of papers published in refereed National journals	-
Total number of papers published in refereed International journals	77
Total number of papers presented in National conferences	3
Total number of papers presented in International conferences	41

Refereed International journals

1. Singh, A., Sethi, B. K., Singh, D., & Misra, R. K. (2021) Shapley Value Method and Stochastic Dantzig–Wolfe Decomposition for Decentralized Scheduling of Multimicrogrid. IEEE Systems Journal.

2. Sethi, B. K., Singh, A., Singh, D., & Misra, R. (2021) Optimal energy management of smart buildings under cyber attack. International Journal of Energy Research, 45(14), 19895-19908

3. Devesh Shukla, Shailendra Singh, Satyendra Pratap Singh, Amit Thakur and S. P. Singh (2022), 'Blockchain Based Energy Trading in ADN with its Probable Impact on Aggregated Load Profile, Available Distribution Capability and Loadability Margin', IET Renewable Power Generation 2022. DOI: 10.1049/rpg2.12463 (Early access).

4. Sri Lakshmi E, S. P. Singh, S. Padmanaban, Z. Leonowicz and J. B. Holm-Nielsen (2022), "Prosumer Energy Management for Optimal Utilization of Bid Fulfillment with EV Uncertainty Modeling", IEEE Transactions on Industry Applications, vol. 58, no. 1, pp. 599-611, Jan.-Feb. 2022, doi: 10.1109/TIA.2021.

5. Edathil Srilakshmi, S. P. Singh (2021), "Energy regulation of EV using MILP for optimal operation of incentive based prosumer microgrid with uncertainty modelling", International Journal of Electrical Power & Energy Systems, Volume 134, 2022, 107353, ISSN 0142-0615, https://doi.org/10.1016/j.ijepes.2021.107353. (Citation Index: 04).

6. S. Singh, S. Veda, S. P. Singh, R. Jain and M. Bagga (2021), "Event-Driven Predictive Approach for Real-Time Volt/VAR Control With CVR in Solar PV Rich Active Distribution Network," in IEEE Transactions on Power Systems, vol. 36, no. 5, pp. 3849-3864, Sept. 2021,doi: 10.1109/TPWRS.2021.3057656.

7. Akhilesh Kumar Barnwal and M. K. Verma (2021) A Modified GWO Based Approach for Optimal Placement of Multi-Distributed Generations. Journal of Electrical Systems. 17(4): 515-528.

8. Akhilesh Kumar Barnwal, Lokesh Kumar Yadav and Mitresh Kumar Verma (2022) A Multi-Objective Approach for Voltage Stability Enhancement and Loss Reduction Under PQV and P Buses Through Reconfiguration and Distributed Generation Allocation. IEEE Access. 10: 16609-16623.

9. Routray A., Singh R.K. and Mahanty R. (2021) Modified Grey Wolf Optimisation Based Reduced Device Count 17-Level Hybrid Multilevel Inverter. IET Power Electronics. 14: 1444-1456

10. Anjali Agrawal, Seema N. Pandey, Laxmi Srivastava, Pratima Walde, Saumya Singh, Baseem Khan, R.K. Saket (2022), Hybrid Deep Neural Network Based Generation Rescheduling for Congestion Mitigation in Spot Power Market, IEEE Access (WoS & SCIE), Impact Factor: 3.367, pp: 29267-29276, March 2022.

11. Anand Kumar K.S., R.K. Saket, Sachin Kumar, Kumari Sarita, Aanchal Singh S. Vardhan, Akanksha Singh S. Vardhan (2022), "Development of TRINETRA: A Sensor Based Vision Enhancement System for Obstacle Detection on Railway Tracks", IEEE Sensors Journal (WoS & SCIE), Impact Factor: 3.301, 22 (4), 3147-3156, 2022.

12. Mukesh Kumar, Kumar Abhishek Singh, Kalpana Chaudhary, R.K. Saket, Baseem Khan (2022), "Regenerative Braking in Electric Vehicle using Quadratic Gain Bidirectional Converter", International Transactions on Electrical Energy Systems (WoS & SCIE), Impact Factor: 2.860, Volume: 2022, pp: 01-20, 2022.

13. Vrince Vimal, Kamred Udham Singh, Abhishek Kumar, Sachin Kumar Gupta, Mamoon Rashid, R.K. Saket, P. Sanjeevikumar (2021), "Clustering Isolated Nodes to Enhance Networks Life Time of WSNs for IoT Applications", IEEE Systems Journal (WoS & SCIE), Impact Factor: 3.931, Volume: 15, Issue: 04, pp: 5654-5663, 2021.

14. Sachin Kumar, Kumari Sarita, R.K. Saket, D.K. Dheer (2021), "Reliability assessment of optimally DG integrated distribution system based on power loss minimization", Electric Power Components & Systems (WoS & SCIE), Impact Factor: 1.071, In Press, 2021.

15. Kanhaiya Kumar, Lokesh Varshney, A. Ambikapathy, R.K. Saket, Saad Mekhilef (2021), "Solar Tracker Transcript-A Review", International Transactions on Electrical Energy Systems (WoS & SCIE), Impact Factor: 2.860, 31 (12), e13250, 2021.

16. Sushma Kakkar, Tanmoy Maity, Rajesh Kumar Ahuja, Pratima Walde, R.K. Saket, Baseem Khan, Sanjeevikumar Padmanaban (2021), "Design and Control of Grid Connected PWM Rectifiers by Optimizing Fractional Order PI Controller using Water Cycle Algorithm", IEEE Access (WoS & SCIE), Impact Factor: 3.367, Volume: 9, pp: 125941-125954, 2021.

17. Sachin Kumar, Kumari Sarita, R.K. Saket, D.K. Dheer, R.C. Bansal, Saad Mekhilef (2021), "Reliability Assessment for DFIG-based WECS Considering the Impact of 3-phase fault and Lightning Impulse Voltage", International Transactions on Electrical Energy Systems (WoS & SCIE), Impact Factor: 2.860, e12952, 2021.

18. S.P. Bihari, P.K. Sadhu, Kumari Sarita, B. Khan, L.D. Arya, R.K. Saket, D.P. Kothari (2021), "A Comprehensive Review of Microgrid Control Mechanism and Impact Assessment for Hybrid Renewable Energy Integration", IEEE Access (WoS & SCIE), Impact Factor: 3.367, volume: 9, pp: 88942-88958, 2021.

19. Nishant Jha, Deepak Prashar, Mamoon Rashid, Sachin Kumar Gupta, R.K. Saket (2021), "Electricity Load Forecasting and Feature Extraction in Smart Grids Using Neural Networks", Computers & Electrical Engineering (WoS & SCIE), Elsevier, Impact Factor: 3.818, 96 (Part A), 107479, 2021.

20. Snigdha Sharma, Lokesh Varshney, M.E. Rajvikram, Akanksha Singh S. Vardhan, Aanchal Singh S. Vardhan, R.K. Saket, Umashankar Subramaniam, Eklas Hossain (2021), "Performance Enhancement of PV System Configurations Under Partial Shading Conditions Using MS Method", IEEE Access (WoS & SCIE), Impact Factor: 3.367, Volume: 9, pp: 56630-56644, 2021.

21. Kumari Sarita, Sachin Kumar, R.K. Saket (2021), "Open-Circuit Fault Diagnosis of Multilevel Converter using Entropy Features-based SVM Technique along with Two-Samples based Detection Algorithm", Computers & Electrical Engineering (WoS & SCIE), Elsevier, Impact Factor: 3.818, 96 (Part A), 107481, 2021.

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Distinguished Visitors

Sl. No.	Name of the visitor & designation	Date of visit	Purpose of visit
1	Dr Arbind Kumar, Scientist 'F' , Dr MD Limaye, Scientist 'F', Sh Kamal Gupta, Scientist 'E'	**21-23 Sept 2021**	Evaluation of CARS project
2	Dr. Arun Kumar Tripathi Ex DG NISE, MNRE	Nov 12, 2021	An Interaction Meeting in emerging areas of Renewable Energy
3	Shri Rajat Gupta Scientist B and Member Secretary BIS	April 2022	Higher Education, Skill Development and Related Services
4	Shri Shyam Kumar Scientist C	Feb 2022	Discussion on testing facilities and ongoing projects on Fuel cells and batteries,

Other activities

International collaboration/achievements by the Department/School

1. Research collaboration with Prof. Richard A McMahon from University of Warwick, UK under SPARC-MHRD scheme

2. Research collaboration with Dr. Teng Long; University of Cambridge, UK under SPARC-MHRD scheme

Any other Information

1. Indian Railways officers contacted the Prof. R. K. Srivastava for reviving the work Prof (Late) S N Mahendra on Linear Induction Motor for transport. On their request the department has submitted grant for Centre of Excellence for Linear Induction Motor based system for future transportation, 1.07 Cr with Prof R K Srivastava (PI for Linear Induction Motor) and Dr Shyam Kamal (PI for control of levitated transport). We are awaiting response of Indian Railways.

2. A proposal to establish the Smart Power Systems Lab has been initiated with the help of Alumni funding to DoRA.

3. The Solar Power Project of 6.025 MW capacity (GCRTPV) of BHU was commissioned under the Chairmanship of Prof Rajendra Kumar Pandey who is Coordinator Solar Power Committee BHU.

4. A meeting of alumni of 1975 batch was organised in the Department to get the support in collaborative projects and education/industrial interaction with students of the Department.

5. A proposal of 50 MW land based Solar Power Plant is being taken up by BHU with NHPC of which Prof Rajendra Kumar Pandey is the coordinator.

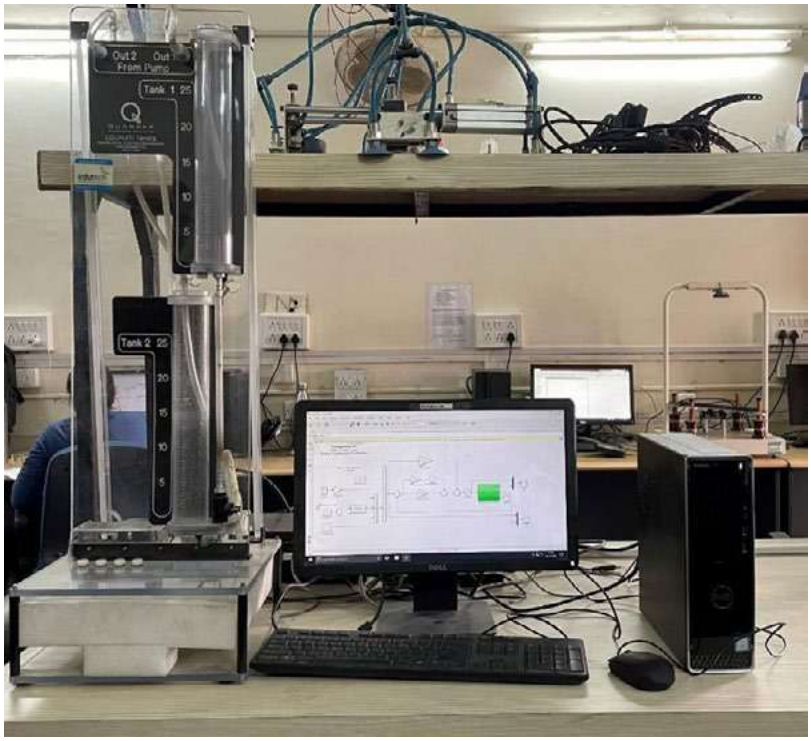
6. A proposal of Hydrogen Energy Pilot Project has been initiated jointly with BHEL, BARC and BHU of which Prof Rajendra Kumar Pandey is the Coordinator.

Key Instruments:

1. Permanent Magnet Synchronous Motor based wind-energy experimental setup

2. Coupled Tank System

The Coupled Tanks plant is a "Two-Tank" module consisting of a pump with a water basin and two tanks. The two tanks are mounted on the front plate such that flow from the first (i.e., upper) tank can flow through an outlet orifice located at the bottom of the tank intothe second (i.e., lower) tank. Flow from the second tank flows into the main water reservoir. In the present laboratory, the Coupled-Tank system is used in two different configurations, namely configuration one and configuration 2. In configuration 1, the objective is to control the water levelinthe top tank, i.e., tank 1, using the outflow from the pump. In configuration 2, the challenge is to maintain the water level in the bottom tank, i.e., tank 2, from the water flow coming out of the top tank. Configuration 2 is an example of state coupled system. This experimental setup helps to apply the developed control theory in real-time.



Electrical machines Lab

Electric Derives Lab

High Voltage Lab

Transmission and Distribution Lab

12. Department of Electronics Engineering

Complete Name of Department: Electronics Engineering

Year of Establishment: 1971

Head of the Department: Prof. V. N. Mishra w.e.f. 09.05.2018

Brief Introduction of the Department/School:

The Department of Electronics Engineering came into existence as an offshoot of Electrical Engineering Department in the year 1971 with a great effort from Prof. S.S. Banerjee. In the same year the erstwhile Banaras Engineering College (BENCO), College of Mining and Metallurgy and College of Technology were amalgamated to form the Institute of Technology-Banaras Hindu University (IT-BHU). The Department offers Bachelor, Master and Doctoral programs in Electronics Engineering with the major thrust areas of Microelectronics, Microwave Engineering, Digital Techniques & Instrumentations and Communication Systems. The Department has been actively engaged in research since its inception as evidenced by the research publications. The first major financial support from the Department of Electronics (DoE), Govt. of India in the tune of Rs.1.0 Crore was received by the Department in 1980 to carry out research for development of High Power Microwave Tubes. Subsequently, in recognition of excellent research contribution, the University Grants Commission (UGC) identified the Department to provide financial support under Special Assistance Program (SAP) in 1983 for five years. During this period, the department established three independent research centers e.g., Centre of Research in Microwave Tubes (CRMT), Centre for Research in Microelectronics (CRME) and Centre for Research in Microprocessor Applications (CRMA) supported by UGC/MHRD. The Department was further recognized as a Centre of Advanced Studies (CAS) by the UGC in 1989. The Department successfully completed three phases of CAS in the year 2009. The Department is also one of the DRDO centres for M.Tech. in Electronics Engineering. In addition to this, the Department has been actively pursuing manpower training and collaborative research programs in specialized areas to meet the national manpower requirement in R&D laboratories, academic institutions and industries. The Department has a close interaction with many reputed national R&D laboratories such as DRDO, CSIR, Bharat Electronics Ltd. and leading software companies as well as foreign Universities.

Major areas of Research

- Communication System Engineering
- Digital Techniques & Instrumentation
- Microwave Engineering
- Microelectronics Engineering

Area of the Department/School (in square meters): 77.25 m x 46.10 m = 3561.22 m^2

Infrastructure

Sl. No.	Particulars	Number
1	No. of Classrooms	**08**
2	No. of Lecture Halls	**01**
3	No. of Laboratory	**16**
4	No. of Computers available for students in the Department/School/ School	**45**

Students on Roll

Sl. No.	Programme	I Year	II Year	III Year	IV Year	V Year & above
1.	B. Tech	132	146	124	99	
2.	M. Tech	27	30			
3.	Ph. D (Under Institute Fellowship)	5	4	2	8	11
4.	Ph. D (Under Project Fellowship)	1			1	
5.	Ph. D (Under Sponsored Category)	1	1			
6.	Ph. D (Under QIP)			4		
7.	Ph. D (Others)			2		

Names of students/scholars who attended conferences/ workshops/seminars and symposia abroad or in India

Sl. No.	Name of Student	Roll No.	Conference/Seminar/ Symposia/Workshop	Date & Venue	Financial Assistance From
India					
1	Deep Chandra Upadhyay	17091024	5th International Conference on Electronics, Materials Engineering & Nano-Technology (IEMENTech)	24-26 September, 2021 Kolkata	Self
2	Deep Chandra Upadhyay	17091024	IEEE VLSI DCS 2022: 3rd IEEE Conference on VLSI Device, Circuit and System	19-20 January, 2022 MSIT, Kolkata	Self
3	Rishibrind Kumar Upadhyay	17091005	2021 IEEE 4th International Conference on Computing, Power and Communication Technologies (GUCON)	24-26 September, 2021	Self
4	Ashish Kumar Singh	17091009	2021 IEEE 4th International Conference on Computing, Power and Communication Technologies (GUCON)	24-26 September, 2021	Self
5	KV Mohan Krishna	19092021	18th India Council International Conference (INDICON-2021)	19 – 21 December, 2021, IIT Guwahati	Self
6	Saripalli Maruthi Kumar Varma	19092008	EEE Delhi Section International Conference on Electrical, Electronics and Computer Engineering (DELCON-2022)	11 – 13 February, 2022 NSUT, Dwarka, Delhi	Self
7	Vikram Singh	19092029	8th IEEE Uttar Pradesh Section International Conference on Electrical, Electronics and Computer Engineering (UPCON 2021)	11-13 November, 2021 Dehradun	Self
8	Sambit Kumar Ghosh	17091021	Indian Conference on Antennas and Propagation (InCAP 2021)	13-16 December, 2021; Malaviya National Institute of Technology (MNIT), Jaipur (Online)	RSGF
9	Diptiranjan Samantaray	17091013	Indian Conference on Antennas and Propagation (InCAP 2021)	13- 16 December, 2021; Malaviya National Institute of Technology (MNIT), Jaipur (Online)	RSGF
10	Nilotpal	17091010	Indian Conference on Antennas and Propagation (InCAP 2021)	13- 16 December, 2021; Malaviya National Institute of Technology (MNIT), Jaipur (Online)	RSGF

Sl. No.	Name of Student	Roll No.	Conference/Seminar/ Symposia/Workshop	Date & Venue	Financial Assistance From
11	Madhavi Chandra	20092040	Indian Conference on Antennas and Propagation (InCAP 2021)	13- 16 December, 2021; Malaviya National Institute of Technology (MNIT), Jaipur (Online)	RSGF
12	Sougata Chatterjee	20091505	Indian Conference on Antennas and Propagation (InCAP 2021)	13- 16 December, 2021; Malaviya National Institute of Technology (MNIT), Jaipur (Online)	Self
13	Arun Kumar Saurabh	17091015	IEEE MTT-S International Microwave and RF Conference (IMaRC 2021)	17-19 December 2021 IIT Kanpur	Self
14	Ajitesh	18091505	IEEE MTT-S International Microwave and RF Conference (IMaRC 2021)	17-19 December 2021 IIT Kanpur	Student Initiative Program
15	Praveen Singh Rathore	19091005	IEEE MTT-S International Microwave and RF Conference (IMaRC 2021)	17-19 December 2021 IIT Kanpur	Student Initiative Program
16	V. Veera Babu	17091016	Wireless, Antenna and Microwave Symposium (WAMS 2022)	5-8 June 2022 NIT Rourkela	Self
ABROAD					
1	Sambit Kumar Ghosh	17091021	URSI GASS 2021, Rome	28 August-4th September	Complementary
2	Diptiranjan Samantaray	17091013	URSI GASS 2021, Rome	28 August-4th September	Complementary
3	Shiv Nath Chaudhri	17091014	IEEE IGARSS 2021, Brussels, Belgium	11-16 July, 2021	Faculty CPDA

Names of students/scholars who got prizes and awards outside the Institute

Sl. No.	Name of Student	Roll No.	Name of Prize	Date & Venue	Prize awarded by
1	Vinit Kumar	21091004	Young Researcher Award 2022	Karnataka, India	InSc Institute of Scholars
2	Sambit Kumar Ghosh	17091021	Dr. C. J. Reddy Best Paper Award for Young Professionals	Jaipur, India 16 December, 2021	IEEE Indian Conference on Antennas and Propagation (InCAP)
3	RADS Abhijith	17095052	First Prize in 3 Minute Project Presentation	Jaipur, India 30 June, 2021	IEEE Antenna and Propagation Society Jaipur Chapter

Names of scholars/students who won Convocation/Institute Day prizes

Sl. No.	Name of Student	Roll No.	Name of Prize	Prize awarded by
1	RADS Abhijith	17095052	• I.I.T.(B.H.U.) Varanasi Medal • Lala Balak Ramji Kohinoor Memorial Gold Medal • Late Prof. Nagesh Chandra Vaidya Gold Medal • Dr. (Late) Nandita Saha Roy Memorial Gold Medal • C. Raja Gopal Memorial Gold Medal • Prof. V.V. Chalam Prize • Dr. Ayyagari Sambasiva Rao Prize • Late Prof. Manoranjan Sengupta Platinum Jubilee Merit Award	Institute during 10th Convocation dated 10 April, 2022

2	Pallav Totawat	17095047	Prof. A.K. Ghosh Silver Medal	Institute during 10th Convocation dated 10 April, 2022
3	Krishnendu Maji	17095084	Prof. A.K. Ghosh Silver Medal	
4	Shreya Sharma	17095082	Prof. B.B. Bansal Memorial Gold Medal	
5	Sakshi Agarwal	19092014	I.I.T.(B.H.U.) Varanasi Medal	
6	Valluri Nikhil Chandra	19092007	Sanjeev Memorial Gold Medal	

Names of Students/Scholars who went for foreign Internship

Sl. No.	Name of Student	Roll No.	Name of the Organization	Place of Internship	Country	Duration
1	R Tharun Gowda	19095124	Changwon National University	Remote	South Korea	May - July 2021
2	Rohan N	18095065	University of Minnesota, Twin Cities	Remote	US	May - July 2021
3	Sirusala Niranth Sai	18095074	TU Darmstadt	Darmstadt (remote)	Germany	May-July 2021
4	Sirusala Niranth Sai	18095074	University of Freiburg(DAAD-WISE Scholarship Program)	Freiburg (remote)	Germany	June-September2021

Faculty & their Activity

Faculty and their areas of specialisation

Sl. No.	Name, Qualifications, Employee No.	Date of award of PhD Degree	Major Areas of Specialization (Max. 3 Areas)
PROFESSORS			
1	Prof. P. Chakrabarti (On Deputation) Ph.D, Employee ID: 13803	1988	High Speed Semiconductor Devices, Optoelectronic Devices, Optical Communication
2	Prof. P. K. Jain (On Deputation) Ph.D, Employee ID: 13802	1988	Microwave Engineering
3	Prof. V. N. Mishra Ph.D, Employee ID: 10389	1996	Microelectronics, Semiconductor Devices, Microelectronic Gas Sensors
4	Prof. Satyabrata Jit Ph.D, Employee ID: 13804	2002	Advanced CMOS Devices, Thin Film Based Nanoelectronic Devices for Electronic, Gas Sensing and Optoelectronic Applications
5	Dr. Manoj Kumar Meshram Ph.D, Employee ID: 16628	2001	Microwave antennas, Artificial materials, Microwave passive devices
ASSOCIATE PROFESSORS			
6	Dr. N. S. Rajput Ph.D, Employee ID: 16800	July 2011	Digital Techniques & Instrumentation
7	Dr. Amit Kumar Singh Ph.D, Employee ID: 18299	June 2010	Microwave Engineering
8	Dr. Amritanshu Pandey Ph.D, Employee ID: 18360	2016	Communication System Engineering, Microelectronics
9	Dr. M. Thottappan Ph.D, Employee ID: 18358	15 May, 2014	Microwave Engineering
ASSISTANT PROFESSORS			
10	Mr. M. K. Singh M.Tech., Employee No. 13806	N. A.	Communication System Engineering
11	Kishor P Sarawadekar Ph.D., Employee No. 19847	5 July, 2012	VLSI Architectures, VLSI based Signal and Image Processing, Image Coding and Image Compression

Sl. No.	Name, Qualifications, Employee No.	Date of award of PhD Degree	Major Areas of Specialization (Max. 3 Areas)
12	Dr. Somak Bhattacharyya Ph.D., Employee No. 50074	30 April, 2015	RF & Microwave Engineering, Metasurfaces, Terahertz Modelling
13	Dr. Smrity Dwivedi Ph.D., Employee No. 50101	29 December, 2012	RF & Microwave Engineering
14	Dr. Shivam Verma Ph.D., Employee No. 50231	4 January, 2017	Spintronics, Devices and Circuits for VLSI, Non-volatile memory and logic circuits
15	Dr. Sanjeev Sharma Ph.D., Employee No. 50236	17 November, 2018	Wireless Communication, Signal Processing, Machine Learning-based Wireless Communication Systems Design
16	Dr. Priya Ranjan Muduli Ph.D., Employee No. 50246	23 August, 2019	Sparse Signal Processing, Machine Learning, Image Processing, Inverse Problems, Wireless Communication, VLSI Digital Signal Processing Systems, and Instrumentation
17	Dr. Om Jee Pandey Ph. D, Employee No. 50287	4 January, 2019	Wireless Sensor Networks, Internet of Things, Cyber Physical Systems, UAV-Assisted Edge and Fog Networks, Low-power Wide-area Networks, Social Networks, Signal Processing, Optical and Wireless Communications
18	Dr. Atul, Ph. D Employee No. 50288	19 December, 2018	Joint sensing and communication technology (JSC), Prediction of Quality-of-Service) parameters for automotive and robotics, Ultra-Reliable Low-Latency Communication (URLLC), Massive MIMO, Beamforming, 5G-NR, C-RAN, O-RAN
19	Dr. Sonam Jain, Ph. D Employee No. 50290	4 August, 2020	Wireless Communication, Physical layer security, Coding Theory, NOMA, MIMO, URLLC
SENIOR SCIENTIFIC OFFICER			
20	Dr. Ashok Kumar Sharma M.Sc, Ph.D Employee ID: 17019	4 October, 1989	Microelectronics, Photovoltaics

Technical and Non-Teaching Staff

Sl. No.	Name, Qualifications	Designation, Employee No.	Date of Appointment in the department
	Dr. Vinod Kumar Singh, Ph.D	Senior Technical Superintendent (Gr.-II), 14165	16.01.1990
	Sri. Tarun Kumar Singh, M.Sc. (Electronics)	Sr. Technical Superintendent (Gr.-I), 16564	15.02.1995
	Sri. Lal Bahadur Vishwakarma, B.A.	Sr. Technical Superintendent, 14166	11.03.1988
	Sri. Krishna Kumar Srivastava, Intermediate	Sr. Technical Superintendent, 14167	16.01.1990
	Sri. Lalji Prasad, Intermediate, Diploma	Sr. Technical Superintendent, 18022	18.01.2007
	Sri. Mohan, High School	Technical Superintendent, 14170	11.03.1988
	Sri. Rajesh Kumar Rai, Intermediate, ITI	Technical Superintendent, 16566	11.03.1988
	Sri. Jay Ram, High School	Technical Superintendent, 14014	07.02.1995
	Sri. Sanjiv Kumar Srivastava, B.A., ITI	Jr. Technical Superintendent, 18056	20.02.2007
	Sri. Shyam Narayan, Intermediate, ITI	Jr. Technical Superintendent, 18087	26.02.2007
	Sri. Bahadur Lal, B.A.	Senior Technician, 18660	05.08.2008
	Sri. Vinod Kumar Verma, Intermediate, ITI Diploma	Senior Technician, 18653	05.08.2008
	Sri. Dinesh Kumar, Intermediate, ITI Diploma	Senior Technician, 18673	06.08.2008
	Sri. Gyan Chand Vishwakarma, High School	Senior Technician, 18904	18.01.2010
	Sri. Amit Kumar Srivastava, B.A.	Senior Technician, 18609	05.08.2008
	Sri. Ravindra Nath Ram, Intermediate	Senior Technician, 14016	01.04.1990
	Sri. Ajit Kumar Singh, Intermediate, ITI	Senior Technician, 19270	09.02.2011

Sl. No.	Name, Qualifications	Designation, Employee No.	Date of Appointment in the department
	Sri. Sanjay Kumar Vishwakarma, M.Sc.	Senior Technician, 19594	11.07.2012
	Dr. Sudha Misha, M.Sc., Ph.D.	Junior Superintendent, 17436	08.03.2019
	Sri. Ashish Kumar Vishwakarma, B.Tech. (E&C)	Jr. Assistant, 50081	20.05.2017
	Sri. J. K. Sinha, Diploma in Computer Sc. & Engg., BCA, B.Tech in Electronic & Telecommunications PG & MPA	Jr. Assistant, 50016	25.09.2020
	Sri. Ved Prakash Yadav, M.A.	MTS	16.12.2016
	Sri. Pavan Singh, B.A., ITI	MTS	16.12.2016
	Sri. Ankit Kumar Rai, M.A., B.Ed	MTS	01.11.2019

Short-term courses/workshops/seminars/symposia/conferences organised by faculty members

Sl. No.	Coordinator	Title	Period
1	Dr. Sanjeev Sharma	Architecture and Technologies for 5G and Beyond Wireless Networks	16-20 August, 2021
2	Dr. Kishor Sarawadekar	Sensors and Actuators	4 July, 2021
3	Dr. Kishor Sarawadekar	Cyber Security	18 July 18, 2021
4	Dr. Kishor Sarawadekar	Analog Integrated Circuit Design Using CMOS Technology	24 July, 2021
5	Dr. Kishor Sarawadekar	Computer Aided Diagnosis: Current Status and Future Trends	28 August, 2021
6	Dr. Kishor Sarawadekar	High Throughput Satellites	27 November, 2021
7	Dr. Kishor Sarawadekar	Image and Video Coding: Past, Present and future	10 December, 2021
8	Dr. Kishor Sarawadekar	Non-orthogonal multiple access schemes	23 December, 2021
9	Dr. Kishor Sarawadekar	Spintronic Devices and Non-volatile Logic	28 December, 2021
10	Dr. Somak Bhattacharyya	Webinar on "Opportunity in Chaos" by Dr. Tushar Sharma, Staff RF Engineer, Renesas Electronics, San Diego, California, USA. Visiting Assistant Professor , IIT Bombay , Mumbai	22 June, 2021
11	Dr. Somak Bhattacharyya	Webinar on "Multifunctional Filtering of Antennas for Radiation on Demand" by Dr. Jawad Yaseen Siddiqui, Associate Professor, Institute of Radio Physics and Electronics, University of Calcutta , India. Visiting Faculty , Royal Military College of Canada	14 July, 2021
12	Dr. Somak Bhattacharyya	Webinar on "Radio Frequency Micromachined Devices and Circuits for Microwave to Sub-millimeter Wave Applications" by Dr. Sukomal Dey, Assistant Professor, Department of Electrical Engineering, Indian Institute of Technology, Palakkad, India	7 August, 2021
13	Dr. Somak Bhattacharyya	Webinar on "Microwave-Radiation Safety Standards vis-à-vis Physiological Basis" by Dr. Subrata Kumar Datta, Scientist, Microwave Tube Research and Development Centre (MTRDC), Defence Research and Development Organization (DRDO),Bengaluru, India	25 September, 2021
14	Dr. Somak Bhattacharyya	Webinar on "Aspects of Paper Writing" byDr. Baidyanath Basu, Former Professor, Department of Electronics Engineering, IIT BHU (Varanasi),Varanasi	1 October, 2021
15	Dr. Somak Bhattacharyya	Webinar on "Introduction to LATEX for writing research papers" by Dr. Rajan Agrahari, Assistant Professor, Department of Electronics and Communication Engineering, National Institute of Technology Patna, Bihar	1 October, 2021
16	Dr. Somak Bhattacharyya	Webinar on "Research Pathways and Reporting papers" by Dr. Pankaj Kumar Choudhury, Professor, Institute of Microengineering and Nanoelectronics , Universiti Kebangsaan, Malaysia	2 October, 2021

Sl. No.	Coordinator	Title	Period
17	Dr. Somak Bhattacharyya and Dr. Santanu Das (Ceramic Engineering)	Webinar on "Nanostructured metasurfaces and fiber based devices via controlled fluid Instabilities" byDr. Tapajyoti Das Gupta, Assistant Professor, Department of Instrumentation and Applied Physics, Indian Institute of Science Bangalore	30 October, 2021
18	Dr. Somak Bhattacharyya	Webinar on "Radar Cross Section Analysis of a Finite Parallel-Plate Waveguide with Material Loading: A Rigorous Wiener-Hopf Approach" by Prof. Kazuya Kobayashi, Department of Electrical, Electronic, and Communication Engineering, Chuo University, Japan, URSI Vice President	8 December, 2021
19	Dr. Manoj Kumar Meshram	Webinar on "Emerging Trends in Antenna Design	23 December, 2021
20	Dr. Manoj Kumar Meshram	Webinar on "Antennas for mmWave Technology"	
21	Dr. Manoj Kumar Meshram	IEEE MTT-S International Microwave and RF Conference (IMaRC 2021) jointly with IIT Kanpur	17-19 December, 2021
22	Dr. Manoj Kumar Meshram and Prof. Jan Hesselbarth Stuttgart University, Germany	Webinar on "Millimeter-wave Antenna Concepts and Technologies" organized by IEEE APS Student Branch, IIT(BHU) Varanasi	17 December, 2021
23	Dr. N. S. Rajput	Hands-on Training on the Data Center (Hyper-converged Infrastructure(HCI)) at IDAPT Hub Foundation, IIT(BHU), Varanasi	17 February, 2022

Short-term courses/workshops/seminars/symposia/conferences/training programmes attended by faculty members in academic institutions and public sector undertakings

Sl. No.	Name of Faculty Member	Title	Period and Venue
Seminars/Symposia/Conferences			
1	Dr. Somak Bhattacharyya	URSI General Assembly 2021 (URSI GASS 2021)	28 August - 4 September, 2021; Rome, Italy (Attended Online)
2	Dr. Somak Bhattacharyya	Indian Conference on Antennas and Propagation (InCAP 2021)	13- 16 December, 2021; Malaviya National Institute of Technology (MNIT), Jaipur (Online)
3	Dr. Kishor Sarawadekar	Patent Life Cycle and Management	IEEE UP Section, 20 June, 2021 (Online)
4	Dr. Kishor Sarawadekar	SoC Emulation Overview	NXP Campus Connect webinar, 6 July, 2021 (Online)
5	Dr. Kishor Sarawadekar	Patent Monetization	IEEE UP Section, 11 July, 2021 (Online)
6	Dr. Kishor Sarawadekar	SoC Physical Design Flow	NXP Campus Connect webinar, 2 August, 2021 (Online)
7	Dr. Kishor Sarawadekar	Embedded Systems An Application Driven Approach	ST Microelectronics and ARM Education, 25-27August, 2021 (Online)
8	Dr. Kishor Sarawadekar	Xilinx Adapt 2021 Summit	7-16 September, 2021 (Online)
9	Dr. Kishor Sarawadekar	Overview of Static Time Analysis	NXP Campus Connect webinar, 7 September, 2021 (Online)
10	Dr. Kishor Sarawadekar	High Throughput Satellites	IEEE UP Section, 27 November, 2021 (Online)
11	Dr. Kishor Sarawadekar	Image and Video Coding: Past, Present and future	IEEE UP Section, 10 December, 2021 (Online)
12	Dr. Priya Ranjan Muduli	Workshop on "Applications of MAchine Learning in SiGnal, ImAge and CoMputer vision" AMALGAM- 2021	IEEE UP Section, 27-31 December, 2021 (Online)
Meetings			
1	Dr. Somak Bhattacharyya	Presentation of Core Research Grant to Science and Engineering Research Board	23 November, 2021 (Online)

Sl. No.	Name of Faculty Member	Title	Period and Venue
2	Dr. Somak Bhattacharyya	Student Interaction Program	2 December, 2021; Swami Vivekananda Institute of Technology, Kolkata
3	Dr. Atul Kumar	Mentor: Industry Relations IEEE Uttar Pradesh section	• 10 January, 2022 (Online) • 15 March, 2022 (Online)
4	Dr. Atul Kumar	Presentation of Project Proposal for Erasmus + KA1 – Mobility of higher education students and staff supported by external policy funds (KA171-HED)	12 February, 2022 (Online)
4	Dr. Somak Bhattacharyya	Presentation of Project Proposal to Indian Space Research Organization via RAC-S, IIT (BHU)	11 January, 2022 (Online)
5	Dr. Somak Bhattacharyya	Evaluation of B.Tech project of 7th Semester	16 March, 2022; Heritage Institute of Technology, Kolkata
6	Dr. Kishor Sarawadekar	Executive Committee Meeting Executive Committee Meetings	• 27 May, 2021 • 19 June, 2021 • 18 July, 2021 • 28 August, 2021 • 25 September, 2021 • 14 October, 2021 • 13 November, 2021 • 18 December, 2021 • 16 January, 2022 • 19 February, 2022 (All Online)
7	Dr. Kishor Sarawadekar	Annual General Body Meeting	16 January, 2022 (Online)
8	Dr. N. S. Rajput	PRSG meeting of the project "High Performance Programmable Simulation Framework for Quantum Network/ Internet communication", MeitY, Govt. of India.	27 September, 2021 (Online)
9	Dr. N. S. Rajput	Jury Meeting for the selection of DG C-DAC R&D Award, Pune	9 August, 2021

Special lectures delivered by faculty members in other institutions

Sl. No.	Name of faculty Member	Topic of Lecture	Institution	Date
1	Dr. Satyabrata Jit	Metal Oxide Nanostructures for Sensing Applications	Faculty Development Program on "Nanoscaled Devices and Internet of Things for Engineering Applications," organized by NIT Warangal (Webinar)	18 February, 2022
2	Dr. Satyabrata Jit	Point Contact Diodes to Nanoscale Transistors: An Overview	Faculty Development Program on "Nanoscaled Devices and Internet of Things for Engineering Applications," organized by NIT Warangal (Webinar)	17 February, 2022
3	Dr. Satyabrata Jit	Point Contact Diodes to Nanoscale MOS Transistors: An Overview	AICTE ATAL Faculty Development Program on "Recent Trends of Emerging Research Advances in Design Aspects and Innovative Modeling Techniques with Miniaturization for Electronics Devices and Circuits" organized by IERT Prayagraj (Webinar)	28 January, 2022

Sl. No.	Name of faculty Member	Topic of Lecture	Institution	Date
4	Dr. Satyabrata Jit	Terahertz Technology: An Overview	Short-term Course on "Nano-electronics: Materials, Devices and Circuits" organized by NITTTR, Chandigarh (Webinar)	28 January, 2022
5	Dr. Satyabrata Jit	Organic Thin Film Solar Cell Technology: An Overview	Short-term Course on "Nano-electronics: Materials, Devices and Circuits" organized by NITTTR, Chandigarh (Webinar)	28 January, 2022
6	Dr. Satyabrata Jit	Basic Concepts and Modeling of JFET, MESFET and MOSFET	AICTE ATAL Faculty Development Program on "Recent Advances and Challenges in Nanoelectronics Devices" organized by Department of Electronics and Communication Engineering, Indian Institute of Information Technology (IIIT) Bhagalpur (Webinar)	13 December, 2021
7	Dr. Satyabrata Jit	Point Contact Diodes to Nanoscale MOS Transistors: A Brief Journey	Online International Symposium on History and Future of Transistors jointly organized by the IEEE EDS Delhi Chapter, The National Academy of Sciences India -Delhi Chapter and Deen Dayal Upadhyaya College (University of Delhi) (Webinar)	29 December, 2021
8	Dr. Satyabrata Jit	Nanostructured Materials and Devices for Sensing Applications	National Engineering College, Kovilpatti; IEEE Student Chapter and IEEE EDS Coimbatore Chapter (Webinar)	9 December, 2021
9	Dr. Satyabrata Jit	Nanostructured Metal Oxides for Sensing Applications	Symposium on "Recent Technological Advancement in Wide/Ultra-wide Bandgap Semiconductor Materials, Devices and Applications: A Step Towards Aatm Nirbhar Bharat" organized by the Department of Electrical and Electronics Engineering, BITS Pilani (Webinar)	10 April, 2021
10	Dr. Manoj Kumar Meshram	Recent Trends of Emerging Research Advances in Design Aspects and Innovative Modeling Techniques with Miniaturization for Electronics Devices and Circuits	Faculty Development Program, IERT Allahabad	24-28 January, 2022
11	Dr. Manoj Kumar Meshram	Antenna Design and Microwave Application	FDP organized by HBTU Kanpur	23-27 August, 2021
12	Dr. Manoj Kumar Meshram	Antenna: Design, fabrication and measurement	FDP organized by G B Pant Institute of Engineering & Technology, Pauri Garhwal, Uttarakhand	2-6 August, 2021
13	Dr. Amritanshu Pandey	2D materials as new generation optoelectronic devices	FDP on "Emerging Trends & Materials for Wearable Electronics" @ VIT Chennai	27 January, 2022
14	Dr. Amritanshu Pandey	2D materials as new generation optoelectronic devices	Nanoscaled Devices and Internet of Things for Engineering Applications @ NIT Warangal	19 Feb 2022
15	Dr. N. S. Rajput	Intelligent Sensors and System Design	STTP program on "IOT and its Application in Industry", Sikkim Manipal Institute of Technology, Majitar, Sikkim	19-24 July, 2021
16	Dr. N. S. Rajput	IOT paradigm for Intelligent Cyber-physical Systems development	Indo-South Korea Joint Network Center for Environmental Cyber Physical Systems	29 October, 2021
17	Dr. N. S. Rajput	Embedded Sensor Systems: Imparting Intelligence	Five Days STC on "IoT with AI & Data Science" at IIT, Patna	14-16 March, 2022

Sl. No.	Name of faculty Member	Topic of Lecture	Institution	Date
18	Dr. N. S. Rajput	Intelligence for Smart City Applications: A case study based approach	one-week FDP on "Intelligent Computing and Communications", at Banasthali Vidyapith under the scheme CURIE-AI, DST, Govt. of India	21-26 March, 2022
19	Dr. N. S. Rajput	Designing intelligent IoT Systems: an overview	6-day AICTE-ISTE Refresher course Online Faculty Development Program(FDP) on "Recent Trends in Wireless Communication and IoT"	8 - 14 December, 2021
20	Dr. N. S. Rajput	UAV Data Acquisition and Processing Technologies	3 days course on "Drone threats - strategies to deal with" at Sher-i-Kashmir Police Academy, Udhampur, J&K	29 – 31 March, 2022
21	Dr. N. S. Rajput	Intelligent Agent based UVA Data Analytics for Real time and Off-line knowledge Generation	3 days course on "Drone threats - strategies to deal with" at Sher-i-Kashmir Police Academy, Udhampur, J&K	29 – 31 March, 2022
22	Dr. Kishor Sarawadekar	Introduction to High Efficiency Video Coding Standard	National Conference on Innovation Global trends in Technology, Architecture and Management, MIT ADT University, Pune	5 May, 2021
23	Dr. Kishor Sarawadekar	Low Power Multiplier Architectures	NIT Warangal	12 July, 2021.
24	Dr. Somak Bhattacharyya	Applications for Metasurfaces in High Frequency Regime	IEEE Bombay Section Microwave Theory & Techniques Society (Virtual)	15 April, 2021
25	Dr. Somak Bhattacharyya	Recent Advancements in High Frequency Communication Applications	Nagarjuna College of Engineering and Technology (Virtual)	31 May, 2021
26	Dr. Somak Bhattacharyya	High Frequency Communications	Midnapore City College (Virtual)	28 July, 2021
27	Dr. Somak Bhattacharyya	Sensing at High Frequencies	One week Faculty Development Program on "Sensors Technology" in University Institute of Engineering & Technology (UIET), Kurukshetra (Virtual)	9 September, 2021
28	Dr. Somak Bhattacharyya	Electromagnetic Characterization of Samples at High Frequencies	IEEE Student Branch IIIT Design and Manufacturing, Jabalpur (Virtual)	10 September, 2021
29	Dr. Somak Bhattacharyya	Metasurfaces: From Basic to Advanced Applications	Technical Lecture Series organized by IEEE Amity University Uttar Pradesh Lucknow Campus Student Branch Chapter and IEEE Young Professionals Committee UP Section (Webinar)	19 September, 2021
30	Dr. Somak Bhattacharyya	Recent Trends in Communication	"Recent Trends in Engineering and Technology" organized by Swami Vivekananda Institute of Technology (SVIST), Kolkata (Webinar)	17 November, 2021
31	Dr. Somak Bhattacharyya	Recent Trends in Communications	"2nd Industrial Electronics, Mechatronics, Electrical and Mechanical Power (IEMPOWER 2021)" organized by Institute of Engineering and Management, Kolkata (Plenary Talk, Webinar)	27 November, 2021
32	Dr. Somak Bhattacharyya	Characterization of Samples at High Frequencies	Short Term Training Program on "Recent Trends in Microwave and Wireless Technologies" organized by Department of Electronics and Telecommunication Engineering of the Ramrao Adik Institute of Technology (RAIT), Dr. D. Y. Patil Deemed to be University, Navi Mumbai (Webinar)	8 December, 2021

Sl. No.	Name of faculty Member	Topic of Lecture	Institution	Date
33	Dr. Somak Bhattacharyya	Electromagnetic Characterization of Samples	Short Term course on "Recent Trends and Applications of RF and Microwave Engineering" organized by Department of Electronics and Communication Engineering, IIIT Bhagalpur (Webinar)	9 December, 2021
33	Dr. Somak Bhattacharyya	Communication as Interdisciplinary Tool	National Education Day organized by Swami Vivekananda Institute of Technology (SVIST), Kolkata	22 December, 2021
34	Dr. Somak Bhattacharyya	Applications of Metasurfaces at High Frequencies	5th Workshop on Optics and Photonics: Theory and Computational Techniques (OPTCT) organized by IIT Delhi (Webinar)	27 December, 2021
35	Dr. Somak Bhattacharyya	Advances in Communication	Department of Electronics & Communication Engineering, Kalyani Govt. Engineering College and IEEE KGEC Student Branch Chapter (Webinar)	3 January, 2022
36	Dr. Somak Bhattacharyya	Trends on High Frequency Communications	Asansol Engineering College (Webinar)	25 February, 2022
37	Dr. Somak Bhattacharyya	Recent and Future Trends in High Frequency Communication	"AICTE QIP Short Term Course titled Electromagnetics: Recent Trends and Future Applications" organized by IIT Indore (Webinar)	1 March, 2022
38	Dr. Somak Bhattacharyya	High Frequency Communication: Recent Trends	IEEE IEM Antenna and Propagation Society (AP-S) Student Branch Chapter in Department of Electronics and Communication Engineering	15 March, 2022
39	Dr. Somak Bhattacharyya	Trends in High Frequency Communications	Annant Gyan Knowledge and Skills Private Limited (Webinar)	27 March, 2022
40	Dr. Shivam Verma	Spintronic Devices for Next Generation Computing	ATAL academy sponsored one-week online faculty development program on "Devices and Circuits For Next-Generation Computing Architectures" scheduled on 25-29 Oct 2021	26 October, 2021
41	Dr. Shivam Verma	Spintronic Devices	Introduction to low power VLSI design and applications (23 December 2021 – 3 January 2022)	3 January, 2022
42	Dr. Shivam Verma	Spintronic Memory and Non-volatile Logic	Introduction to low power VLSI design and applications (23 December 2021 – 3 January 2022)	3 January, 2022
43	Dr. Shivam Verma	Spintronic devices and non-volatile logic	Online Webinar for Technical Workshop/ Seminar/Webinar Sub Committee IEEE UP Section	28 December, 2021
44	Dr. Shivam Verma	Spintronic devices and non-volatile logic	FDP on Advances in Electronic Devices, Modelling and Simulation Studies scheduled during 07th JUNE2021 to 12th JUNE2021 at Matrusri Engg College Hyderabad	12 June, 2021
45	Dr. Priya Ranjan Muduli	Compressive Sampling in Biomedical and Communication Systems	AICTE Training and Learning (ATAL) Academy Sponsored One Week Online Faculty Development Program (FDP) on Signal Processing and Machine Learning towards Engineering Applications, NERIST, Arunachal Pradesh	25 August, 2021
46	Dr. Priya Ranjan Muduli	Convex Optimization-based Sparse Signal Processing Approaches for Biomedical Signals	Signal Processing and Machine Learning Approaches For Biomedical Signals (SPMLB 2021), Department of Electrical Engineering, NIT Rourkela	26 October, 2021
47	Dr. Priya Ranjan Muduli	Convex Optimization for Sparse Sensing and Machine Learning	Expert lecture on "Applications of MachineLearning in Signal, Image and Computer vision (AMALGAM-2021)", IEEE Young Professionals, U.P. Section	30 December, 2021

Sl. No.	Name of faculty Member	Topic of Lecture	Institution	Date
48	Dr. Priya Ranjan Muduli	Sparsity-driven Convex Optimization for Biosignal Processing	online faculty development programme (FDP) on "Signal and Image Processing Techniques for Next Generation Applications", NIT Warangal, India	6 March, 2022
49	Dr. Priya Ranjan Muduli	Biomedical Signal Processing	E & ICT FDP on Applications of Artificial Intelligence in Communication and Signal Processing (AICSP), NIT Warangal, Telangana.	19 March, 2022
50	Dr. Sanjeev Sharma	Nonorthogonal Multiple Access Schemes	REC Sonbhadra	12 February, 2022
51	Dr. Om Jee Pandey	Small World Based Wireless Sensor Networks for Smart City Development	One Week FDP on "Advanced Sensor Technology for Efficient Biomedical and Energy Management in Smart Cities" organized Jaipur Engineering College and Research Center Jaipur (ATAL FDP) (Webinar)	7 January, 2022

Honours and awards

Sl. No.	Name of Faculty Member	Details of Award
1	Dr. Somak Bhattacharyya	Innovation Award in Microwave Field-2021 from *IEEE AP/MTT Joint Chapter Gujrat Section*.
2	Dr. Somak Bhattacharyya	IEEE Uttar Pradesh Section Young Professional Star for the Month of February 2021 from *IEEE UP Section (Declared in June 2021)*
3	Dr. Somak Bhattacharyya	Associate Fellow from *West Bengal Academy of Science and Technology* since 2020 (Conferred on 7 May, 2021)
4	Dr. Priya Ranjan Muduli	IEEE Uttar Pradesh Section Young Professional Star for the Month of August 2021 from *IEEE UP Section (Declared in June 2021)*
5	Dr. Kishor Sarawadekar	IEEE Senior Member, *the highest professional grade of IEEE*, recognized as a professional accomplishment as less than 10% of IEEE Members have achieved this recognition
7	Dr. Sanjeev Sharma	IEEE Senior Member, *the highest professional grade of IEEE*, recognized as a professional accomplishment as less than 10% of IEEE Members have achieved this recognition

Fellowships of academic and professional societies

Sl. No.	Name of Faculty Member	Details of Fellowship
1	Dr. Somak Bhattacharyya	Associate Fellow from *West Bengal Academy of Science and Technology* since 2020

Books, monographs authored/co-authored

Sl. No.	Name of Author/Co-Author	Title	Publisher
1	Sambit Kumar Ghosh, Anirban Chaudhury, Parama Pal, and Somak Bhattacharyya	Graphene-metasurface-based biosensor for SARS-CoV-2 detection	*Proceedings of SPIE, High Contrast Metastructures XI;* Vol. 12011, Article No. 1201109, San Francisco, California, USA, 25-27 January, 2022.
2	Somak Bhattacharyya	Report on 2020-2021 Activities from IEEE Chapters and Student Branches in India [MTT-S Society News]	*IEEE Microwave Magazine*, vol. 23, issue 2, pp. 23-32, Feb. 2022. (https://ieeexplore.ieee.org/document/9676506)
3	Somak Bhattacharyya	Microwave Education by the IEEE MTT-S Student Branch Chapter IIT BHU Varanasi, India, During COVID-19 [MTT-S Society News]	*IEEE Microwave Magazine*, vol. 22, issue 10, pp. 74-76, Oct. 2021. (https://ieeexplore.ieee.org/document/9529119)

Editorial boards of journals

Sl. No.	Name of Faculty Member	Position (Editor/ member)	Name of Journal
1	Dr. Satyabrata Jit	Associate Editor	IETE Journal of Research
2	Dr. Satyabrata Jit	Associate Editor	IET Micro & Nano Letters
3	Dr. Satyabrata Jit	Associate Editor	Journal of Electronics Materials (SCI) of the Springer publications
4	Dr. Manoj Kumar Meshram	Managing Editor	International Journal of Advances in Microwave Technology (ISSN : 2456-4346)
5	Dr. Sanjeev Sharma	Review Editor	Frontiers in Communications and Networks
6	Dr. Priya Ranjan Muduli	Associate Editor	IEEE Transactions on Instrumentation and Measurements
7	Amritanshu Pandey	Associate Editor	Journal of The Institution of Engineers (India) : Series B

Design and Development Activities New facilities added

Sl. No.	Details (Infrastructure, Equipments, etc.)	Value (in Lakhs of INR)
1	ZynQ UltraScale + MPSoC ZCU 104 Evaluation Kit	1.59
2	Xilinx Kintex UltraScale FPGA KCU105 Evaluation Kit	4.5

Patents filed

Sl. No.	Name of Faculty Member	Title of Patent
1	Dr. Kishor Sarawadekar	A Smart Wearable System for Contactless Goniometric Measurements
2	Dr. Shivam Verma	An Asymmetric Transistor and Method of Fabrication Thereof (Filed; Application No. 202111052391)

Research and Consultancy Sponsored research projects (Ongoing only)

Sl. No.	Title	Period	Funding Agency	Amount (in lakhs of INR)	Co- ordinator
1	Design and Development of Composition Engineered Toxic-Free Organic-Inorganic Perovskite Quantum Dots Based Flexible Spectrum-Tunable Photodetectors	2022-25	SERB	42.90	Prof. Satyabrata Jit
2	Development of Non-Invasive Saliva Based Glucometer for Diabetes Management	2022-25	SERB	23.48	Prof. Satyabrata Jit (Co-PI)
3	Design and Development of High Gain, Wide Bandwidth Beam Steered Reconfigurable Reflectarray Antennas for 5G mmWave Applications	5 March, 2022 - 4 March, 2025	SERB	51.26	Dr. Manoj Kumar Meshram
4	Development of a scalable volatile organic compound (VOC) sensing based intelligent cyber-physical system for near real-time vehicle pollution monitoring and recommendation for reduced emissions	22 August, 2021 – 21 September, 2022	IDAPT Hub Foundation, IIT(BHU), Varanasi	19.80	Dr. N. S. Rajput
5	Integrative Environment View (IEV) for Sustainable HyperLocal Temporal & Spatial Environmental Pollution Monitoring: Case of Air Quality in Varanasi City **(Project Code - R&D/SA/ Google /Humanistic/20-21/01 FY 2020-2021)**	One Year (Pilot Phase)	Google USA	$30,000 (~INR 21 Lacs)	Dr. N. S. Rajput P.I. (Sensors & IOT) (Interdisciplinary Project with Three Departments – ECE, CIV, MIN)

Sl. No.	Title	Period	Funding Agency	Amount (in lakhs of INR)	Co- ordinator
6	Analysis and Design of Sub-Millimetre Wave Tuneable Gyrotron for DNP-NMR Spectroscopy Application	April 2021 - April 2024	SERB, DST, India under Core Research Grant	50.16	Dr. M. Thottappan
7	Electromagnetic Analysis, Design and Simulation of Dual-frequency (S- and C-band) Relativistic Backward Wave Oscillator – A HPM Source	September, 2019 - September 2022	Defense Research and Development Centre (DRDO), Ministry of Defense, GoI, New Delhi.	46.85	Dr. M. Thottappan
8	Development of Hand Telerehabilitation Platform for Diagnostic and Therapeutic Purposes in Physiotherapy	January, 2022 - January, 2025	SERB, DST, India under Core Research Grant	21.28	Dr. Kishor Sarawadekar
9	Design, Development and Characterization of Low-Loss, Frequency-Selective Metamaterial Waveguide, Coupler and Antenna for 5G Applications	January, 2020 – January, 2023	SERB, DST, India	6.60	Dr. Smrity Dwivedi
10	Metasurface-based Sensor Devices for mm-wave and sub-terahertz Applications	January, 2022 - January, 2025	SERB, DST, India under **Core Research Grant**	56.21	Dr. Somak Bhattacharyya
11	Development of Simulation Software for Spintronic Device and Circuit Simulation	Dec. 2019 (2.5 yrs)	SERB, DST, India under **Start-up Research Grant**	16.13	Dr. Shivam Verma
12	Implementation of Terahertz Band Communication for Next-generation Wireless Networks	2021-2023	SERB, DST, India under **Start-up Research Grant**	23.67	Dr. Sanjeev Sharma
13	Design and Development of Cognitive Small-World LPWANs for Internet of Things towards Health Monitoring	2021-2023	SERB, DST, India under **Start-up Research Grant**	30.11	Dr. Om Jee Pandey

Research Publications

Sl. No.		No.
1	Total Number of Papers Published in Refereed International Journals	73
2	Total Number of Papers Published in Refereed National Journals	0
3	Total Number of Papers Presented in International Conferences	28
4	Total Number of Papers Presented in National Conferences	0

Refereed International Journals

1. A. K. Dikshit, Gourav Das, N Mukherjee and **P Chakrabarti**, "SHJ solar cells on an adequately thin c-Si wafer with domelike front and double-layer ITO nanoparticles as rear light trapping arrangements," ***IEEE Trans. Electron Devices***, vol.69, pp216-222, 2022.

2. Abhishek Kumar Kumar Singh, Arun Dev Dhar Dwivedi, **A Pandey**, **P Chakrabarti**, "Design and implementation of an inverter and its application in ring oscillator circuits using an organic-thin-film-transistor based on an FTM-derived channel," ***Semiconductor Science and Technology***, 37, 125006, 2021.

3. A. K. Dikshit, S Maity, N Mukherjee, **P Chakrabarti**, "Hybrid Inorganic–Organic Inverted Solar Cells with ZnO/ZnMgO Barrier Layer and Effective Organic Active Layer for Low Leakage Current, Enhanced Efficiency, and Reliability," ***IEEE Journal of Photovoltaics***, vol.11, pp983-990, 2021.

4. Vijayakumar Devarakonda, **Amritanshu Pandey**, **P. Chakrabarti**, "Enhanced optoelectronic properties of a mercury cadmium telluride based double heterojunction photodetector for terahertz applications," ***Optik-International Journal of Light and Electron Optics***, vol.247, 167947, 2021.

5. A. K. Dikshit, P Banerjee, N Mukherjee, **P Chakrabarti**, "Theoretical optimization of double dielectric back reflector layer for thin c-Si based advanced solar cells with notable enhancement in MAPD," ***Superlattices and Microstructures***, vol.149, 106747, 2021.

6. D. K. Jarwal, A. K. Mishra, K. Baral, A. Kumar, C. Kumar, G. Rawat, B. Mukherjee, and **S. Jit**, "Performance Optimization of ZnO Nanorods ETL Based Hybrid Perovskite Solar Cells with Different Seed Layers," accepted for publication in ***IEEE Trans. Electron Devices***.

7. A. Srivastava, **S. Jit** and S. Tripathi, "Er-Doped ZnO, CuO and Pentacene Based Broadband Photodetector with High External Quantum Efficiency," ***IEEE Electron Device Letters***, vol. 42, no. 12, pp. 1802-1805, Dec. 2021

8. A. Malekpoor, S. A. Hashemi and **S. Jit**, "Memoryless Logic Circuit Design Based on the Quantum Phase Slip Junctions for Superconducting Digital Applications," ***IEEE Trans. Applied Superconductivity***, Vol. 31(9), pp.1-9, December 2021

9. A. K. Mishra, D. K. Jarwal, B. Mukharjee and **S. Jit**, "CuO Nanoparticles Decorated ZnO Nanorods based Extended-Gate Field-Effect-Transistor (EGFET) for Enzyme-Free Glucose Sensing Application," ***IEEE Trans. NanoBioscience***, Vol. 21, no. 1, pp. 3-9, Jan. 2022

10. D. C. Upadhyay and **S. Jit**, "High Responsivity ZnO Nanorods/ PTB7 Polymer Heterojunction Based UV - Visible Photodetector," ***IEEE Photonics Technology Letters***, Vol. 33(21), pp.1197-1200, November 2021

11. A. Srivastava, **S. Jit** and S. Tripathi, "Pentacene and Er-doped ZnO Nanocomposite Based UV-Visible-NIR Wideband Photodetector," ***IEEE Photonics Technology Letters***, Vol. 33 (21), pp.1193-1196, November 2021

12. M. R. Tripathy and **S. Jit**, "Lateral and Vertical Gate Oxide Stacking Impact on Noise Margins and Delays for the 8T SRAM Designed with Source Pocket Engineered GaSb/Si Heterojunction Vertical TFET: A Reliability Study," ***IEEE Transactions on Device and Materials Reliability***, Vol. 21 (3), 372-378, September 2021

13. D. C. Upadhyay, R. K. Upadhyaya, and **S. Jit**, "PCDTBT:PCBM:CdSe Tetrapod Shaped Nanocrystals Hybrid Nanocomposites based UV-Visible Photodetectors," ***IEEE Photonics Technology Letters***, Vol. 33(14), pp. 691-694, July 2021

14. A. Srivastava, **S. Jit** and S. Tripathi, "High-Performance Pentacene/ZnO UV-Visible Photodetector Using Solution Method," ***IEEE Transactions on Electron Devices***, Vol. 68(7), pp. 3439-3445, July 2021

15. A. Srivastava, R. Singh, **S. Jit**, and S. Tripathi, "Pentacene and CuO Nanocomposite Based Self-Powered Broadband Photodetector," ***IEEE Electron Device Letters***, Vol.42 (6), pp. 875-878, June 2021

16. U. Kasiviswanathan, C. Kumar, S. Poddar, **S. Jit**, N. Sharma, and S. K. Mahto, "Extended Large Area Si/ZnO Heterojunction Biosensor for Assessing Functional Behaviour of Primary Cortical Neuronal Cells," ***IEEE Sensors Journal***, Vol.21(13), pp. 14619-14626, July 2021.

17. U. Kasiviswanathan, C. K. Balavigneswaran, C. Kumar, S. Poddar, **S. Jit**, N. Sharma and S. K. Mahto, "Aluminium Oxide Thin Film based in vitro Cell-Substrate Sensing Device for Monitoring Proliferation of Myoblast Cells," ***IEEE Transactions on NanoBioscience***, Vol. 20(3), pp. 331-337, July 2021

18. U. Kasiviswanathan, C. Kumar, S. Poddar, **S. Jit**, N. Sharma and S. K. Mahto, "Functional Behaviour of the Primary Cortical Neuronal Cells on the Large Surface of TiO2 and SnO2 based Biosensing Device," ***IEEE Transactions on Nanobioscience***, Vol. 20(2), pp. 138-145, April 2021.

19. A. Singh, S. Maurya, P. Kumar, D. K. Jarwal, **S. Jit**, S. Bysakh, Md. I. Ahmad, R. K. Mandal and J. Basu, "Homogeneous and polymorphic transformations to ordered intermetallics in nanostructured Au-Cu multilayer thin films," ***Journal of Materials Science***, Vol. 56, pp.16113–16133, October 2021.

20. K. Baral, P. K. Singh, G. Kumar, A. K. Singh, M. R. Tripathy, S. Kumar and **S. Jit**, "Impact of Ion Implantation on Stacked Oxide Cylindrical Gate Junctionless Accumulation Mode MOSFET: An Electrical and Circuit Level Analysis," ***Materials Science in Semiconductor Processing***, Vol. 133, pp. 105966:1-8, October 2021.

21. H. Bisht, A. P. Singh, **S. Jit**, S. Pokharia, and H. Mishra, "Effect of Diffusion on Photo-Induced Excited-State Energy Transfer between Fluorescent Semiconducting Molecules: Tris-(8- hydroxyquinoline) Aluminum and 6,13-Bis (Triisopropylsilylethynyl) Pentacene," ***The Journal of Physical Chemistry C***, Vol. 125(42), pp. 23011–23020, October 2021.

22. Dhirendra Kumar, **S. Jit**, S. Sinha, R. Sharma, R. Mukhiya, "Titanium Nitride Sensing Film-based Extended-Gate Field-Effect Transistor for Chemical/Biochemical Sensing Applications," ***Journal of The Electrochemical Society***, Vol. 168, Article No. 107510, November 2021.

23. P. K. Yadav, R. K. Upadhyay, D. Kumar, S. Chandra, D. Bano, **S. Jit** and S. H. Hasan, "Synthesis of green fluorescent carbon quantum dots via latex of ficus benghalensis for the detection of tyrosine and fabrication of Schottky barrier diode," ***New Journal of Chemistry***, Vol. 45, pp. 12549-12556, June 2021.

24. K. Baral, P. K. Singh, S. Kumar, A. K. Singh, D. K. Jarwal and **S. Jit**, "A Unified 2-D Model for Nanowire Junctionless Accumulation and Inversion Mode MOSFET in Quasi-ballistic Regime," accepted for publication in ***Solid State Electronics***.

25. M. R. Tripathy, A Samad, A. K. Singh, P. K. Singh, K. Baral, A. K. Mishra, and **S. Jit**, "Impact of Interface Trap Charges on Electrical Performance Characteristics of a Source Pocket Engineered Ge/Si Heterojunction Vertical TFET with HfO2/Al2O3 Laterally Stacked Gate Oxide," ***Microelectronics Reliability***, Vol. 119, pp. 114073:1-11, April 2021.

26. A. K. Singh, M. R. Tripathy, P. K. Singh, K. Baral, S. Chander, **S. Jit**, "Deep Insight into DC/RF and Linearity Parameters of a Novel Back Gated Ferroelectric TFET on SELBOX Substrate for Ultra Low Power Applications," ***Silicon***, Vol.13, pp.3853–3863, November 2021

27. P. K. Singh, K. Baral, S. Kumar, M. R. Tripathy, A. K. Singh, R. K. Upadhyay, S. Chander, **S. Jit**, "Analytical Drain Current Model for Source Pocket Engineered Stacked Oxide SiO2/HfO2 Cylindrical Gate TFETs," ***Silicon*** 13(6), pp.1731-1739, June 2021.

28. Arun Kumar Saurabh, **Manoj Kumar Meshram**, "Wideband 20-Elements 3D-MIMO Antenna for Localization System," ***IEEE Transactions on Circuits and Systems II: Express Briefs***, Volume: 69, Issue: 2, Feb. 2022.

29. Akanksha Singh, Rahul Dubey, Rajkumar Jatav, **Manoj Kumar Meshram**, "Electronically reconfigurable microstrip antenna with steerable beams," ***AEU- International Journal of Electronics and Communications***, vol.149,2022.

30. Almalki, Faris, Saeed H. Alsamhi, Radhya Sahal, Jahan Hassan, Ammar Hawbani, **N. S. Rajput**, Abdu Saif, Jeff Morgan, and John Breslin. "Green IoT for eco-friendly and sustainable smart cities: future directions and opportunities." ***Mobile Networks and Applications*** (2021): 1-25.

31. Chaudhri, Shiv Nath, **Navin Singh Rajput**, Saeed Hamood Alsamhi, Alexey V. Shvetsov, and Faris A. Almalki. "Zero-padding and spatial augmentation-based gas sensor node optimization approach in resource-constrained 6G-IoT paradigm." ***Sensors*** 22, no. 8 (2022): 3039.

32. S. N. Chaudhri and **N. S. Rajput**, "Multidimensional Multiconvolution-Based Feature Extraction Approach for Drift Tolerant Robust Classifier for Gases/Odors," ***IEEE Sensors Letters***, vol. 6, no. 4, pp. 1-4, April 2022.

33. Chaudhri, Shiv Nath, **Rajput, Navin Singh** and Mishra, Ashutosh. "A novel principal component-based virtual sensor approach for efficient classification of gases/odors" ***Journal of Electrical Engineering***, vol.73, no.2, 2022, pp.108-115.

34. Sudhir Bhaskar and **Amit Kumar Singh**, "A compact meander line UHF RFID antenna for passive tag applications," ***Progress In Electromagnetics Research M***, Vol. 99, 57-67, 2021.

35. Amit Kumar and **A. K. Singh**, "Design of Dual-Band and Low-Profile SIW Cavity-Backed Slot Antenna for 5G Applications," ***Journal of Mobile Multimedia***, Vol 17, Iss 1-3, 2021.

36. Amit Kumar, M. Kumar and **A. K. Singh**, "Substrate Integrated Waveguide Cavity Backed Wideband Slot Antenna for 5G Applications," ***Radioengineering***, VOL. 30, NO. 3, September 2021.

37. Shyam Gopal Yadav, Akash and **M. Thottappan**, "Design and Simulation Investigations of Stagger Tuned W-Band Gyro-Twystron," ***IEEE Transactions on Electron Devices***, vol. 69, no. 2, pp. 777-784, Feb. 2022.

38. V. Venkata Reddy, Mumtaz Ali Ansari and **M.Thottappan**, "Modeling of RF Pulse Shortening Causes and Their Effects on an Overmoded RBWO under Low Guiding Magnetic Field," ***IEEE Transactions on Electron Devices***, vol. 69, no. 1, pp. 333-339, Jan. 2022.

39. Akash and **M. Thottappan**, "Design and Simulation Investigations of W-Band Second Harmonic Periodically Dielectric Loaded Gyro-TWT," ***IETE Technical Review***, vol. 38, no. 4, pp. 1-9, Oct. 2021.

40. M. Hemanta Kumar, **Sanjeev Sharma**, **M. Thottappan**, and Kuntal Deka, " Precoded Spatial Modulation-Aided Cooperative NOMA," ***IEEE Communications Letters***, vol. 25, no. 6, pp. 2053-2057, June 2021.

41. V. Venkata Reddy, Mumtaz Ali Ansari and **M.Thottappan**, "Simulation Investigations of High Power Overmoded Relativistic Backward Wave Oscillator with Trapezoidal Resonant Reflector," ***Defence Science Journal***, vol. 71, no. 3, pp. 346-350, May 2021.

42. SM Yadav, AK Chaurasia, G Rawat, **A Pandey**, "CTS Quantum Dots–ZnO Nanocomposites for Broadband Photodetection," ***ACS Applied Electronic Materials*** 3 (9) 4018- 4026 2021

43. Sanjeev Mani Yadav, and **Amritanshu Pandey**, "Low Cost Solvothermal Processed CTS QDs (0D)-Based Visible-NIR Photoconductor," ***IEEE Sensors Journal*** 21 (18) 19978- 19983 2021.

44. Dubey, S.K., Kumar, A., **Pandey, A.** et al., "A Study of Sensitivity Improved Probe Using Hyperbolic Metamaterial for Optical Fiber SPR (OFSPR)-based Refractive Index Sensor," ***Plasmonics,*** 2022

45. Gupta, Prashant; Pandey, Utkarsh; Pal, Bhola; **Pandey, Amritanshu**, "Low Cost Solution-Processed MoS2 Quantum Dots-based DeepUV Photodetector for Monitoring Disinfection," ***IEEE Trans Electron Devices***, 69(5), 2474- 2480, 2022

46. Sanjeev Mani Yadav, and **Amritanshu Pandey**, "An Efficient White-Light Photodetector Based on 2D-SnS2 Nanosheets," ***IEEE Trans Electron Devices***, 69(4), 1889- 1893, 2022.

47. Akhilendra P. Singh, **Smrity Dwivedi**, and **Pradip K. Jain**, "A Novel Technique for Contrast Target Detection in Through-the-Wall Radar Images" accepted for publication in ***Journal of Electromagnetic Engineering and Science***.

48. Nisheeth Upadhyay and **Smrity Dwivedi**, "Design, Analysis and simulation study of dielectric filled S- band Tapered Magnetically insulated line oscillator (MILO)," ***International journal of microwave and optical technology (IJMOT)***, Vol. 17, No. 3, May 2022.

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50. Prabhakar Tripathi, Arjun Kumar, **Smrity Dwivedi**, **P. K. Jain**, "Study of the Beam–Wave Interaction Behavior of the Side-Coupled Cavity Structure," ***IEEE Transactions on Plasma Science***, pp. 1-10, November 2021.

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52. Sambit Kumar Ghosh, Santanu Das, and **Somak Bhattacharyya**, "Graphene-Based Metasurface for Tunable Absorption and Transmission Characteristics in the Near Mid-Infrared Region," accepted for publication in ***IEEE Transactions on Antennas and Propagation***.

53. Rajan Agrahari, Akhlesh Lakhtakia, **P. K. Jain**, and **Somak Bhattacharyya**, "Pixelated Metasurfaces for Linear-Polarization Conversion and Absorption," ***Journal of Electromagnetic Waves and Applications***, vol. 36, issue 7, pp. 1008-1019, 2022.

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58. Lavesh Nama, Nilotpal, **Somak Bhattacharyya**, and **Pradip K. Jain**, "A Metasurface-based Ultra-thin Dual-band Linear to Circular Reflective Polarization Converter," ***IEEE Antennas and Propagation Magazine (Feature Article)***, vol. 63, no. 4, pp. 100-110, Aug. 2021.

59. Shivam Verma, Ravneet Paul, and Mayank Shukla, "Non-volatile Latch Compatible with Static and Dynamic CMOS for Logic in Memory Applications," ***IEEE Trans. on Magnetics***, vol.58, no. 4, pp. 1-8, 2022.

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65. Dayal, A., Yeduri, S.R., Koduru, B.H., Jaiswal, R.K., Soumya, J., Srinivas, M.B., **Pandey, O.J.** and Cenkeramaddi, L.R., "Lightweight deep convolutional neural network for background sound classification in speech signals," ***The Journal of the Acoustical Society of America***, 151(4), pp.2773-2786, 2022.

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72. N. Sharma, **Atul Kumar**, et al., "Aerial Base Station Assisted Cellular Communication: Performance and Trade-Off," ***IEEE Transactions on Network Science and Engineering***, vol. 8, no. 4, pp. 2765-2779, 1 Oct.-Dec. 2021, doi: 10.1109/TNSE.2021.3052984.

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Proceedings of International Conferences

1. D. C. Upadhyay, R. K. Upadhyay, A. P. Singh and **S. Jit**, "Low Band Gap Polymer: Fullerene based Photodetector with Spectral Response from 350 nm to 850 nm," ***2021 5th International Conference on Electronics, Materials Engineering & Nano-Technology (IEMENTech)***, 2021, pp. 1-4, doi: 10.1109/IEMENTech53263.2021.9614849.

2. 2. D. C. Upadhyay, R. K. Upadhyay, A. P. Singh and **S. Jit**, " White Light Photosensitivity and Stable Photoresponse Properties of Tetrapod Shaped CdSe Nanocrystals: Polymer: Fullerene Blend " ***3rd IEEE Conference on VLSI Device, Circuit and System 2022***, MSIT, Kolkata, India

3. 3. Sambit Kumar Ghosh, Santanu Das, and **Somak Bhattacharyya**, "Graphene-Metal Hybrid Metasurface for Tunable Bandpass Filter in Terahertz Region," in ***IEEE Indian Conference on Antennas and Propagation (InCAP 2021)***, pp. 812-815, Jaipur, India, 13-16 December, 2021. (Dr. C. J. Reddy award for best paper for young professionals (Male))

4. Sougata Chatterjee, Sambit Kumar Ghosh, S. Sureshkumar, Yashwant Gupta, and **Somak Bhattacharyya**, "Design of Metasurface-Loaded Filtenna for Applications in Radio Astronomy," in ***IEEE Indian Conference on Antennas and Propagation (InCAP 2021)***, pp. 556-559, Jaipur, India, 13-16 December, 2021.

5. Meghna Mishra, Sambit Kumar Ghosh, and **Somak Bhattacharyya**, "A Multiband Transmittive-Type Linear-To-Circular Polarization Converter," ***IEEE Indian Conference on Antennas and Propagation (InCAP 2021)***, pp. 702-705, Jaipur, India, 13-16 December, 2021.

6. Diptiranjan Samantaray, and **Somak Bhattacharyya**, "An AMC Based Metasurface Patch Antenna for C-Band and X-Band Applications," in ***IEEE Indian Conference on Antennas and Propagation (InCAP 2021)***, pp. 548-551, Jaipur, India, 13-16 December, 2021.

7. Madhavi Chandra, Nilotpal, **M Thottappan**, and **Somak Bhattacharyya**, "A Transmissive Type Dual Band Cross Polarization Converter Metasurface for IoT Applications," in ***IEEE Indian Conference on Antennas and Propagation (InCAP 2021)***, pp. 587-590, Jaipur, India, 13-16 December, 2021.

8. Nilotpal, **P. Chakrabarti**, and **Somak Bhattacharyya**, "Methodology of Designing a Bidirectional Metamaterial Absorber," in ***IEEE Indian Conference on Antennas and Propagation (InCAP 2021)***, pp. 706-709, Jaipur, India, 13-16 December, 2021.

9. Ananga Paul, Nilotpal, **Somak Bhattacharyya**, and **Smrity Dwivedi**, "A Tunable Coding Metasurface Absorber Using VO2 for THz Detection," in ***IEEE Indian Conference on Antennas and Propagation (InCAP 2021)***, pp. 602-605, Jaipur, India, 13-16 December, 2021.

10. R A D S Abhijith, Nilotpal, and **Somak Bhattacharyya**, "A metamaterial based tunable terahertz bandpass filter and an algorithm to tune the resonant peak frequency," ***2021 XXXIVth General Assembly and Scientific Symposium of the International Union of Radio Science (URSI GASS)***, pp. 1-4, Rome, Italy, 28 August-4 September, 2021.

11. Diptiranjan Samantaray, and **Somak Bhattacharyya**, "A Gain Enhanced Metasurface based Monopole Antenna for WLAN Application," ***2021 XXXIVth General Assembly and Scientific Symposium of the International Union of Radio Science (URSI GASS)***, pp. 1-4, Rome, Italy, 28 August-4 September, 2021.

12. Sambit Kumar Ghosh, Santanu Das, and **Somak Bhattacharyya**, "A Graphene Based Metasurface for Transmittive-type Linear to Circular Polarization Converter with Tunable Characteristics," ***2021 XXXIVth General Assembly and Scientific Symposium of the International Union of Radio Science (URSI GASS)***, pp. 1-4, Rome, Italy, 28 August-4 September, 2021.

13. S. Tripathi, **O.J. Pandey**, L. Reddy, R. Hegde, "Optimal Active Elements Selection in RIS-Assisted Edge Networks for Improved QoS ", 2022 , ***Twelfth IEEE Sensor Array and Multichannel Signal Processing Workshop (IEEE SAM-2022)***, Norway.

14. Pandey, O.J., Chilamkurthy, N.S. and Hegde, R.M., "Optimal Link Scheduling for Low Latency Data Transfer over Small World WSNs," ***2021 IEEE National Conference on Communications (NCC)*** (pp. 1-6), 2021, July.

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16. Atul Kumar, I. B. Franco de Almeida, N. Franchi and G. Fettweis, "A Deep Neural Network Based Environment Sensing in the Presence of Jammers," ***2021 IEEE International Conference on Communications Workshops (ICC Workshops)***, 2021, pp. 1-7, doi: 10.1109/ICCWorkshops50388.2021.9473622.

17. A. Palaios, **Atul Kumar** et al., "Network under Control: Multi-Vehicle E2E Measurements for AI-based QoS Prediction," ***2021 IEEE 32nd Annual International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC), 2021***, pp. 1432-1438, doi: 10.1109/PIMRC50174.2021.9569490.

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19. K. V. Mohan Krishna and **Kishor Sarawadekar**, "Design of Concurrent Error Detection Techniques for FFT implemented on FPGA platform," in the ***18th India Council International Conference (INDICON-2021)***, Guwahati, December 19-21, 2021.

20. Vikram Singh and **Kishor Sarawadekar**, "Chaos based pseudo random number generator," in the ***8th IEEE Uttar Pradesh Section International Conference on Electrical, Electronics and Computer Engineering (UPCON 2021)***, Dehradun, pp. 1-6, November 11-13, 2021.

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24. Chaudhri, S. N., and **N. S. Rajput**, "Mirror Mosaicking: A Novel Approach to Achieve High-performance Classification of Gases Leveraging Convolutional Neural Network." In ***SENSORNETS***, pp. 86-91. 2021.

25. Shivani Chandra and **Smrity Dwivedi**, "Graphene based Radiation Pattern reconfigurable antenna," ***IEEE International Conference for convergence in Technology***, April 2-4, 2021.

26. Shivani Chandra and **Smrity Dwivedi**, "Design and Simulation of Graphene Based Antenna for Frequency and polarization Reconfigurations, 15-17 September 2021, ***ICECCT, Tamilnadu***.

27. Smrity Dwivedi, "'Design and PCR calculation of Triangular Ring Resonator (TRR) metamaterial for wide range of applications', ***2021 IEEE Second International Conference on Technology, Engineering, Management for Societal***

impact using Marketing, Entrepreneurship and Talent (TEMSMET), 1-3 December, 2021.

28. Utkarsh Gupta and **Smrity Dwivedi**, "Frequency Reconfigurable Antenna Using Metamaterial Split Ring Resonators for Smart Applications," ***3rd International conference on electrical, communication and computer engineering***, 12-13June 2021, Malaysia.

Kindly Provide Brief Details of 5 Articles from the Department/School with maximum no. of Citations in last 5 years Since 2017:

1. S. Kumar, E. Goel, K. Singh, B. Singh, P. K. Singh, K. Baral, and **S. Jit**, "2-D Analytical Modeling of the Electrical Characteristics of Dual-Material Double-Gate TFETs With a SiO2/HfO2 Stacked Gate-Oxide Structure," ***IEEE Transactions on Electron Devices***, vol. 64, no. 3, pp. 960-968, March 2017. **(Citations: 133)**

2. A. Tripathi, H. P. Gupta, T. Dutta, R. Mishra, K. K. Shukla and **S. Jit**, "Coverage and Connectivity in WSNs: A Survey, Research Issues and Challenges," ***IEEE Access***, vol. 6, pp. 26971-26992, 2018. (**Citations: 125**)

3. Vinit Singh Yadav, Sambit Kumar Ghosh, **Somak Bhattacharyya**, and Santanu Das, "Graphene Based Metasurface for Tunable Broadband Terahertz Cross Polarization Converter over Wide Angle of Incidence," ***Applied Optics***, Vol. 57, Issue 29, pp. 8720-8726, October 2018. **(Citations: 58)**

4. S. Kumar, K. Singh, S. Chander, E. Goel, P. K. Singh, K. Baral, B. Singh, and **S. Jit**, "2-D Analytical Drain Current Model of Double-Gate Heterojunction TFETs With a SiO2/HfO2 Stacked Gate-Oxide Structure," ***IEEE Transactions on Electron Devices***, vol. 65, no. 1, pp. 331-338, Jan. 2018. **(Citations: 53)**

5. **Somak Bhattacharyya**, Saptarshi Ghosh, and Kumar Vaibhav Srivastava, "A Wideband Cross Polarization Conversion using Metasurface," ***Radio Science***, vol. 52, issue 11, pp. 1395-1404, November 2017. **(Citations: 53)**

6. Sambit Kumar Ghosh, Vinit Singh Yadav, Santanu Das, and **Somak Bhattacharyya**, "Tunable Graphene Based Metasurface for Polarization-Independent Broadband Absorption in Lower Mid Infrared (MIR) Range," ***IEEE Transactions on Electromagnetic Compatibility***, vol. 62, issue 2, pp. 346-354, April 2020. **(Citations: 52)**

Any other Information

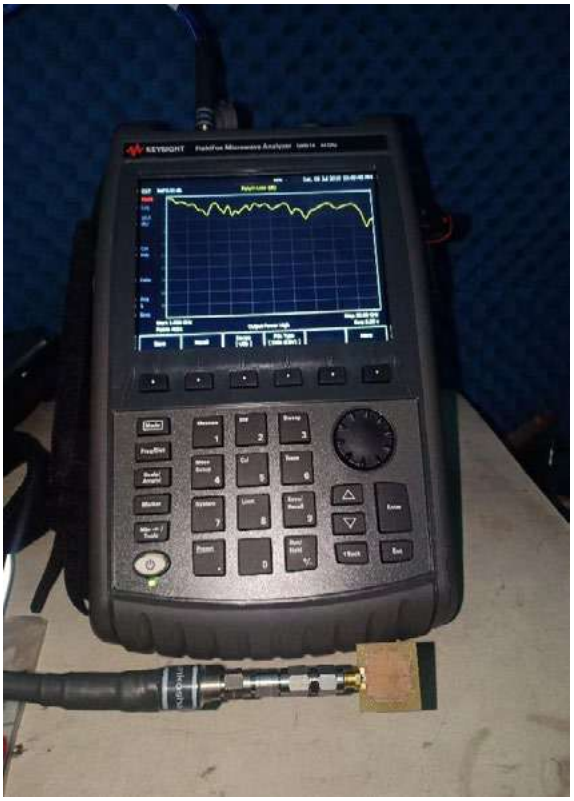
- **Prof. M. K. Meshram** has been serving as Secretary of ***IEEE UP Section Antennas and Propagation Society***.
- **Dr. Amritanshu Pandey** has been serving as Treasurer of ***IETE Varanasi Sub-section***.
- **Prof. M. K. Meshram** and **Dr. Somak Bhattacharyya** have been serving as Executive Committee Member of ***IETE Varanasi Sub-section***.
- **Dr. Kishor Sarawadekar** has been serving as Executive Committee Member of ***IEEE UP Section***.
- **Dr. Somak Bhattacharyya** has been serving as the co-ordinator of ***IEEE Region 10 Microwave Theory & Techniques Society (MTT-S) Young Professional Committee***.
- **Dr. Somak Bhattacharyya** has been serving as Executive Committee Member of ***IEEE Photonics Society UP Section***.
- The paper "Graphene based metasurface with near unity broadband absorption in the terahertz gap" by **Mr. Sambit Kumar Ghosh, Dr. Santanu Das,** and **Dr. Somak Bhattacharyya** has been awarded as Top Cited Article 2020-21 in ***International Journal of RF and Microwave Computer-Aided Engineering***.

Key Instruments:

1. **Photoluminescence (PL) measurement setup** (F980) from Edinburgh Photonics, UK. This setup can provide PL from 200-800 nm.

2. **Vaccum evaporation and deposition systems** (FL 300 and BC 300) from Hind High vac, Bangalore, India. These setup works with e-beam evaporation (FL 300) and thermal evaporation (FL 300 and BC 300) for depositing thin films.

3. An **''anechoic chamber"** («an-echoic» meaning non-reflective, non-echoing or echo-free) is a room designed to completely absorb reflections of either sound or electromagnetic waves. They are also often isolated from waves entering from their surroundings. **(Anechoic Chamber with 6 axis position for RF Characterization (up to 20GHz)**



4. **Handheld Vector Network Analyzer** with measurement facility up to 44 GHz. The microwave characterization of the device under test can be performed at any location as the instrument is portable in nature.

13. Department of Mechanical Engineering

Full Name of Department: Mechanical Engineering

Year of Establishment: 1919

Head of the Department: Prof Santosh Kumar w.e.f. 02-08-2021

Brief introduction of the Department/School:

The Department of Mechanical Engineering came into existence in 1919 under the leadership of Professor Charles A. King, the first Head of the Department and Principal of the erstwhile Banaras Engineering College. Over the last hundred years, the department has grown fourfold to become the largest department in IIT (BHU), Varanasi. The post-graduate and doctoral program in the department is well-established and infrastructural facilities exist for studies and research for a range of specialisations such as Machine Design, Thermal & Fluid Engineering, Production Engineering and Industrial Management. The ME curriculum emphasizes on developing industry-based engineers who contribute to the nation's growth and command respect in society. A dedicated pool of faculty members helps students to learn in a technological and multidisciplinary environment. Advance computational facility and well-equipped laboratories aid in the motto of department. The department encourages students to participate in various competitions related to technology and innovation.

Major areas of Research

Fracture mechanics, Vibrations and Dynamic Analysis, Machine Design, Tribology, Composite Materials, High-Temperature Wear and Lubrication, Surface Engineering, Computational Mechanics, FEM, MEMS, Smart Materials and Structures including Nanostructures, Structural Health Monitoring, Optical Fibre Sensing, Shape Memory Alloys, Heat Transfer, Multiphase Flow, Droplet Atomisation, Bio-Fluid Dynamics, Fluid Machines, CFD, Porous-Media Flow, Microgravity Fluid Physics, Refrigeration, Air-conditioning, Alternate Fuels and Renewable Energy, Wind & Solar Energy, Climate Modelling, Microfluidics, Metal Forming/Joining, Machining, Micro-Machining, Welding engineering & Technology, 3D-4D-5D Printing & Additive Manufacturing, CAD-CAM, Robotics, Manufacturing Automation, Unconventional Manufacturing, Powder Metallurgy, Rapid Tooling, Metal Foams, Next-Generation Bio-Implants, Reverse Engineering, Design of Production Systems, Operations Research, Optimization, DOE, Logistics & Supply Chain Management, Agriculture 4.0, Location Science.

Area of the Department/School (in square meters): 11,728

Infrastructure

Sl. No.	Particulars	Number
1	No. of classrooms	04
2	No. of lecture halls	04
3	No. of laboratory	20
4	No. of computers available for students in the Department/School	273

Unique Achievement / Preposition of the Department/School

IIT (BHU) has developed a measurement test kit for Hb along with complete blood count at a cost of Rs. 10 only, which can easily be deployed among underserved population in resource constrained settings. The Department has also started working for Defence, Aerospace and Medical device development research.

Academic programmes offered.New Courses Introduced

S. No.	Course code	Course name	Course credits
1	ME 643	Wind Engineering & Industrial Aerodynamics	9

Students on Roll

S. No.	Programme	I Year	II Year	III Year	IV Year	V Year & above
1.	B. Tech/B. Arch	146	162	136	122	-
2.	Dual Degree	31	35	30	25	22
3.	M. Tech/ M. Pharm	37	50	-	-	-
4.	Ph. D (Under Institute Fellowship)	25	11	7	9	30
5.	Ph. D (Under Project Fellowship)	-	3	2	-	2
6.	Ph. D (Under Sponsored Category)	3	2	4	2	-

Names of students/scholars who attended conferences/ workshops/seminars and symposia abroad or in India

Sl. No.	Name of student	Roll no.	Conference/Seminar/Symposia/Workshop	Date & venue	Financial assistance from
India					
1	Anshuman Rajput	20131501	Workshop on Numerical Methods in Engineering: Advances and Applications	5-8 July, 2021, IIT Ropar	Self
2	A. Singh	16131502	ISHMT-ASTFE Heat and Mass Transfer Conference	December 17-20, 2021, IIT Madras	Institute
3	M. Sahu	17131012	ISHMT-ASTFE Heat and Mass Transfer Conference	December 17-20, 2021, IIT Madras	Institute
4	J. P. Bijarniya	19131501	ISHMT-ASTFE Heat and Mass Transfer Conference	December 17-20, 2021, IIT Madras	Project
5	Ajeet Kumar Yadav	17101001	International Conference on Industrial Engineering and Management, Jaipur, India (Conference)	Dec., 17-19, 2021 Jaipur (Virtual mode)	Institute
6	Ajeet Kumar Yadav	17101001	POMS India International Conference, Mumbai, India (Conference)	Dec. 22-24, 2021 Mumbai (Virtual)	Institute
7	Ajeet Kumar Yadav	17101001	POMS India International Conference, Mumbai, India (Doctoral Colloquium)	Dec. 22-24, 2021 Mumbai (Virtual)	Self
8	Ajeet Kumar Yadav	17101001	4th International conference on Open cast mining Technology and Sustainability (ICOMS 2021)	Dec. 13-14, 2021 Singrauli, Madhya Pradesh (Virtual)	Self
9	Ajeet Kumar Yadav	17101001	International Conference on Industrial Engineering and Operations Management Bangalore, India	Aug. 16-18, 2021 Bangalore (Virtual)	Self
10	Ajeet Kumar Yadav	17101001	Global Online Certification Course on Supply Chain Operations and Disruptions Management: A Way Forward (Workshop)	Sept., 29- Oct., 27, 2021 NITIE Mumbai (Virtual)	Institute
11	Ajeet Kumar Yadav	17101001	Applied Machine Learning, AI & Its Application using Python (Workshop)	Aug 25- Sept 7, 2021 IIT Hyderabad (Virtual)	Institute
12	Ajeet Kumar Yadav	17101001	Interdisciplinary Data Analytics and Predictive Technology (IDAPT) (Workshop)	Nov. 10-14, 2021 IIT (BHU), Varanasi (Virtual)	Self
13	Abhishek Raj	17101501	CIMS 2021	11-13 NOV 2021 ONLINE	Applied for Institute assistance
14	Abhishek Raj	17101501	MMLT 2021	1-5 DEC 2021 ONLINE	Applied for Institute assistance
15	Abhishek Raj	17101501	AEOTIT 2021	18- 22 OCT 2021 ONLINE	Applied for Institute assistance

Sl. No.	Name of student	Roll no.	Conference/Seminar/Symposia/Workshop	Date & venue	Financial assistance from
16	Abhishek Raj	17101501	SOM 2021	12-15 NOV 2021 ONLINE	Applied for Institute assistance
17	Abhishek Raj	17101501	FTS 2021	10-14 NOV 2021 ONLINE	Self
18	Abhishek Raj	17101501	POMS 2021	22-24 DEC 2021 ONLINE	Self
19	Basudeb Rajak	17131007	Development of Ti alloy-based composites by mechanical alloying and stirrer casting route for dental applications	February 12, 2022, ME Dept., IIT (BHU), Varanasi.	Institute
20	Deepak Kumar Singh	19131004	4th International Conference on Opencast Mining Technology & Sustainability (ICOMS-2021)	13-14 Dec 2021, at NCL Singrauli M.P.	NCL
21	Reetu Raj	20131515	4th International Conference on Opencast Mining Technology & Sustainability (ICOMS-2021)	13-14 Dec 2021, at NCL Singrauli M.P.	NCL
22	Ritesh Sonkar	20132036	4th International Conference on Opencast Mining Technology & Sustainability (ICOMS-2021)	13-14 Dec 2021, at NCL Singrauli M.P.	NCL
23	Hemant Kumar	20132030	4th International Conference on Opencast Mining Technology & Sustainability (ICOMS-2021)	13-14 Dec 2021, at NCL Singrauli M.P.	NCL
24	Satish Upadhyay	Research Scholar	26th National and 4th International ISHMT-ASTFE Heat and Mass Transfer Conference	December 17-20, 2021, IIT Madras, Chennai-600036, Tamil Nadu, India	MHRD- IIT (BHU) Varanasi
25	Mayaram Sahu	Research Scholar	26th National and 4th International ISHMT-ASTFE Heat and Mass Transfer Conference	December 17-20, 2021, IIT Madras, Chennai-600036	MHRD- IIT (BHU) Varanasi
26	Narendra Kumar Jha	15131503	Conference ICFMMP	17-18 Sept. 2021 Lovely Professional University Punjab	Self

Names of scholars/students who won convocation/Institute-day prizes

Sl. No.	Name of Student	Roll No.	Name of prize	Prize awarded by
1	Alankrit Goel	19102001	I.I.T. (B.H.U.) Varanasi Medal for standing First at the MTech Exam in Industrial Management, 2021	Institute
2	Ananthakrishnan K	19132023	I.I.T. (B.H.U.) Varanasi Medal for standing First at MTech Exam in Mechanical Engineering, 2021	Institute
3	Ananthakrishnan K	19132023	Prof. (Dr.) Mahendra Kumar Jain Nyayacharya Gold Medal for securing highest CPI at MTech Exam in Mechanical Engineering, 2021	Institute
4	Shubham Gupta	19132017	S.K. Memorial Gold Medal for standing First position at MTech in Mechanical Engineering (Machine Design) Examination, 2021	Institute
5	Shashwat Sharad Agarwal	16134022	I.I.T.(B.H.U.) Varanasi Medal for standing First at 5-YearI.D.D. (BTech+MTech) in Mechanical Engineering Examination, 2021	Institute
6	Samarth Chaudhry	17135102	I.I.T.(B.H.U.) Varanasi Medal for standing First at BTech in Mechanical Engineering Examination, 2021	Institute
7	Samarth Chaudhry	17135102	The Prince of Wales Medal for standing First at BTech in Mechanical Engineering Examination, 2021	Institute

Sl. No.	Name of Student	Roll No.	Name of prize	Prize awarded by
8	Samarth Chaudhry	17135102	Sudhir Kumar Sharma Memorial Gold Medal for securing highest marks in BTech Mechanical Engineering Examination, 2021	Institute
9	Samarth Chaudhry	17135102	CRS Iyengar Memorial Gold Medal for securing highest marks in BTech Mechanical Engineering Examination, 2021	Institute
10	Samarth Chaudhry	17135102	Late Prof. Manoranjan Sengupta Platinum Jubilee Merit Award Rs. 1000/- cash for securing highest marks in BTech in Mechanical Engineering Examination, 2021	Institute
11	Shreyasi Airi	17135081	Indira Tripathi Gold Medal for securing highest CPI among the girl students at BTech in Mechanical Engineering Examination, 2021	Institute

Faculty & their activities Faculty and their areas of specialisation

Sl. No.	Name, Qualifications, Employee No.	Date of award of PhD degree	Major areas of specialization
Professors			
1	Prof. A. K. Agrawal PhD, 13819	1990	Quality Control, Six Sigma, Optimization, Industrial Engineering, Operation Management, Supply Chain Management
2	Prof. Santosh Kumar PhD, 13831	2000	Metal forming, Additive manufacturing,3D printing, Unconventional manufacturing, Manufacturing Automation, product Design & Development
3	Prof. A. P. Harsha PhD, 16722	2004	Tribology, Material Tribology and Design
4	Prof. Sandeep Kumar PhD, 17343	1999	Computational Mechanics (Wavelets, FEM, Meshless)
5	Prof. K. S. Tripathi PhD, 13821	1992	Mechanisms, Vibrations
6	Prof. S. K. Sinha PhD, 17364	1993	CNC
7	Prof. Rajesh Kumar PhD, 17318	2002	Tribology, MEMS Reliability, Optimization
8	Prof. Prasant Shukla PhD, 16723	2000	Fluid mechanics, Heat transfer
9	Prof. Pradyumna Ghosh, PhD, 16801	2007	Microgravity fluid physics, heat transfer, CFD
10	Prof. S. K. Shukla PhD, 18130	2005	Thermal Engineering, Renewable Energy, Alternate Fuels
11	Prof. Rajnesh Tyagi PhD, 17341	2001	Solid Lubricating Composites and Tribology, Surface Modification for Wear reduction, High Temperature Wear of Composites and Coatings
12	Prof. S. K. Panda PhD, 17390	2005	Failure Analysis and Reliability Design, Finite Element Analysis, Impact Dynamics and Ballistics, Advanced Composite Structures, Rolling Element Bearings
13	Prof. P. Bhardwaj PhD, 16720	2008	Production System, SCM, TQM
14	Prof. Rakesh Kumar Gautam, PhD,18239	2009	Composite Materials, Tribological properties of composite materials and alloys, Bio-Tribology
Associate Professors			
1	Dr. Mohd Zaheer Khan Yusufzai, PhD, 16657	2012	Welding, Materials Engineering, Grinding
2	Dr. Meghanshu Vashista, PhD, 16721	2010	Machining, Grinding, Welding

Sl. No.	Name, Qualifications, Employee No.	Date of award of PhD degree	Major areas of specialization
3	Dr. S. S. Mondal PhD, 17339	2005	Thermal and Fluid Sciences
4	Dr. Jahar Sarkar PhD, 17388	2006	Heat transfer, Thermodynamics, Airconditioning
5	Dr. Arnab Sarkar PhD, 17252	2012	Wind Climatology, Renewable Energy, Microfluidics
6	Dr. Debashis Khan PhD, 18139	2007	Solid Mechanics, Fracture Mechanics, Finite Element Method
7	Dr. Om Prakash Singh PhD, 50061	2006	CFD, Heat and mass transfer, Renewable energy, solar energy, IPR
8	Dr. J. V. Tirkey PhD, 16724	2008	SI and CI Engine, Design simulation, Alternate fuel
9	Dr. Cherian Samuel PhD, 16798	2005	Industrial Management, Operations and Supply Chain Management,
10	Dr. N. Mallik PhD, 17253	2005	Smart Materials and Structures, Structural Health Monitoring, Energy Harvesting
11	Dr. Amit Tyagi PhD, 17268	2011	Machine Design
12	Dr. U. S. Rao PhD, 17269	2013	Modelling and Simulation, Micro-machining, Machining,
13	Dr. R. R. Sahoo PhD, 17335	2017	IC Engine, Alternate fuels, nanofluid & hybrid nanofluid applications
14	Dr. Laltu Chandra PhD, 50223	2005	Fluid Flow and Heat Transfer; Solar Energy; Nuclear Reactor Thermal-hydraulics
Assistant Professors			
1	Shri P. C. Mani MTech, 18214		Tribology and Maintenance Engineering
2	Dr. Amitesh Kumar PhD, 50073	2010	Cryotherapy, Fluid Flow and Heat Transfer, Computational Fluid Dynamics
3	Dr. Ajinkya Nandkumar Tanksale PhD, 50225	2018	Operations Research, Facility Location, Supply Chain Management
4	Dr. Anubhav Sinha PhD, 50239	2016	Atomization and Spray, Gas Turbine, Combustion, Hydrogen Safety
5	Dr. Binita Pathak PhD, 50238	2018	Fluid instabilities, Biofluid dynamics
6	Dr. Amit Subhash Shedbale, PhD, 50241	2017	Solid Mechanics, Damage Mechanics, Finite Element Analysis
7	Dr. Saurabh Pratap PhD, 50255	2016	Maritime Logistics, E-commerce platform, Blockchain, IoT
8	Dr. Joy Prakash Misra PhD, 50256	2014	Machining Science, Advanced & Hybrid Machining Processes, Advanced Joining Techniques
9	Dr. Akhilendra Pratap Singh, PhD, 50260	2017	Advanced low temperature combustion; Optical diagnostics with special reference to engine endoscopy and PIV; Combustion diagnostics; Engine emission measurement; Particulate characterization and their control; Alternative fuels
10	Lakshay, PhD, 50270	2018	Applied Mathematical modelling, Operations research, Simulation.
11	Srihari Dodla, PhD 50271	2015	Multiscale material modelling, Crystal Plasticity, Texture Evolution, and Micromechanical formulation
12	R Santhosh, PhD 50274	2016	Combustion, Laser diagnostics, CFD, Atomization and Sprays

Sl. No.	Name, Qualifications, Employee No.	Date of award of PhD degree	Major areas of specialization
13	Pawan Sharma PhD	2019	Additive Manufacturing, Powder Metallurgy, 3D printing, Rapid tooling, 4D Printing, Metal Foams, Next generation bioimplants, Reverse Engineering, Corrosion of bio-materials.

Technical and Non-Teaching Staff

Sl. No.	Name, Qualifications	Designation, Employee No.	Date of appointment in the department
1	Sri Akash Mishra, M.Com. & B.Com.	Junior Assistant,50079	08/05/2017
2	Sri Rajeev Ratan Sahaya, MBA	Junior Assistant,50186	06/03/2018
3	Sri Satya Prakash, Diploma in Mechanical Engineering	Sr. Tech. Superintendent, 18017	20/01/2007
4	Sri Ram Adhar Yadav, Intermediate, Diploma in Mechanical Engineering	Technical Superintendent, 13981	05/05/1988
5	Sri Barmeshwar Rai, Graduation	Technical Superintendent, 13975	12/10/1988
6	Sri Dhaniram Shankar Singh, Intermediate (Science)	Technical Superintendent, 13967	04/06/1991
7	Sri Hari Shankar, 12th, Diploma in Computer in Office Management	Technical Superintendent, 13982	08/01/1997
8	Sri D.P. Sharma, Intermediate (Science)	Technical Superintendent, 13984	15/10/1998
9	Sri V.P. Srivastava, Graduation (B.Sc.)	Technical Superintendent, 13983	15/10/1998
10	Sri Ranjeet Sharma, High School	Jr. Tech. Superintendent, 13986	12/10/1998
11	Sri Rajendra Kumar, Intermediate (Science)	Jr. Tech. Superintendent, 18062	22/02/2007
12	Sri Nand Lal, Intermediate, ITI	Jr. Tech. Superintendent, 18055	21/02/2007
13	Sri Anil Kr. Singh, Graduation (B.A.), ITI	Jr. Tech. Superintendent, 18060	20/02/2007
14	Sri Surendra Pratap Yadav, Intermediate (Sci.)	Sr. Technician, 18610	05/08/2008
15	Sri Dinesh Kumar, Graduation (B.Sc.)	Sr. Technician, 18614	11/08/2008
16	Sri Sunil Kr. Bardhan, 12th, ITI, Diploma in Mechanical Engg.	Sr. Technician, 18613	05/08/2008
17	Sri Shambhu Prasad, Post-Graduation (M.P.Ed.)	Sr. Technician, 18611	05/08/2008
18	Sri Ravi Prakash Singh, Intermediate, ITI (Draftsman)	Sr. Technician, 18612	06/08/2008
19	Ms. Saroj K. Patel, M.A. (Sociology), ITI	Sr. Technician, 19271	09/02/2011
20	Sri Mool Chand, Intermediate (Science)	Sr. Technician, 13974	16/09/1987
21	Sri Barmeshwar Prasad, Intermediate	Sr. Technician, 19597	11/07/2012
22	Sri Anupam Mishra, Graduation (B.Sc.), ADCA	Sr. Technician, 19600	11/07/2012
23	Shambhu Prasad Singh, Highschool, ITI (Diesel Mechanic)	Junior Technical Superintendent 13985	12/10/1998
24	Dr Santosh Kumar Mandal PhD	Senior Technical Officer,18838	01/11/2009

Short-term courses/workshops/seminars/symposia/conferences organised by faculty members

Sl. No.	Coordinator	Title	Period
1	Prof. S. K. Shukla Dr. R. Santhosh	International webinar on COP26	December 10, 2021
2	Dr. Ajinkya N. Tanksale	ATAL FDP on "Transforming Supply Chains with Analytics"	6-10 December 2021
3	Prof. R. K. Gautam	One Day Research Facility training program (Hybrid Mode) On "Development of Ti alloy based composites by mechanical alloying and stirrer casting route for dental applications"	February12, 2022

Sl. No.	Coordinator	Title	Period
4	Prof. R. K. Gautam	One Day National Workshop (Online-Mode) on "Development of Ti alloy based composites by mechanical alloying and stirrer casting route for dental applications"	February 23, 2022
5	Dr Saurabh Pratap Dr Lakshay	Data Analytics and Predictive Techniques for Urban Freight Transportation System	11-11-2021 to 14-11-2021
6	Dr. Joy Prakash Misra	ATAL FDP on Processing of Novel Materials (Elementary Level)	20.09.2021-24.09.2021
7	Dr. Joy Prakash Misra	ATAL FDP on Processing of Novel Materials (Advanced Level)	22.11.2021-26.11.2021
8	Dr. Joy Prakash Misra	STC on Development of Autonomous Electric Wheel Chairs for Dis-abilities	01.12.2021-05.12.2021
9	Dr. Santosh Kumar	AICTE-ATAL program on Design Thinking in 3D Printing	June 07-11, 2021
10	Dr. Santosh Kumar Dr. Shyam Kamal	IDAPT- Development of Autonomous Electric Wheel Chairs for Dis-abilities	December 01-05, 2021

Short-term courses/workshops/seminars/symposia/conferences/training programmes attended by faculty members in academic institutions and public sector undertakings

Sl. No.	Name of faculty member	Title	Period and venue
Seminars/Symposia/Conferences			
1	Dr. Anubhav Sinha	ASME GT India Conference 2021	2-3 Dec, 2021 (online)
2	Dr. Anubhav Sinha	48th National Conference on Fluid Mechanics and Fluid Power (FMFP)	27-29 Dec, 2021 (online)
3	Dr. Amit Subhash Shedbale	Workshop on Numerical Methods in Engineering: Advances and Applications	5-8 July, 2021, IIT Ropar
4	Prof. S. K. Shukla	4th India-Japan Workshop on Hydrogen and Fuel Cell 2022	Online on March 4, 2022
5	Prof. S.K. Shukla	IH2A-SDI Hydrogen Economy Stakeholder Workshop	Fri Aug 27, 2021 4pm – 5:30pm
6	Dr. Ajinkya N. Tanksale	International Conference on Applications of Operational Research in Business and Industries (AORBI)	17-19 December 2021
7	Dr. Ajinkya N. Tanksale	POMS India International Conference 2021	22-24 December 2021
8	Dr. Cherian Samuel	Bio start-ups webinar	Sept. 4, 2021
9	Dr. Cherian Samuel	Author workshop	Sept. 25, 2021
10	Dr. UPPU SRINIVAS RAO	Online Lecture Series on Evaluation of Classical Mechanics and Symposium on Engineering Pedagogy in the Honour of Professor Amitabha Ghosh	March 5, 6, 12, 13, 19 and 20, 2022, IIT Guwahati in online mode
11	Dr. Lakshay	Workshop on AI/ML techniques for the Weather and Climate applications	12-03-2022 to 14-03-2022, IIT Kanpur (online)
12	Dr. J. V. Tirkey	4th International Conference on Opencast Mining Technology & Sustainability (ICOMS-2021)	13th -14th December 2021, at NCL Singrauli, M.P.
13	Prof. Santosh Kumar	Online Lecture Series on Evaluation of Classical Mechanics and Symposium on Engineering Pedagogy in the Honour of Professor Amitabha Ghosh	March 5, 6, 12, 13, 19 and 20, 2022
14	Prof. Santosh Kumar	Half-day online workshop on Additive Manufacturing for Competitiveness, organised by National Institute of Industrial Engineering (NITIE), an Autonomous Body under the Ministry of Education, GOI	20 May, 2021
15	Dr. Saurabh Pratap	ICIEM 2021 Industrial Engineering and Management	17-19 December 2021
16	Dr. Akhilendra Pratap Singh	VI International Conference on Sustainable Energy and Environmental Challenges (VI SEEC)	27-29 December 2021, Lucknow

Sl. No.	Name of faculty member	Title	Period and venue
Meetings			
1	Prof. S. K. Shukla	22nd meeting of Renewable Energy Sources Sectional Committee, MED 04 in joint session with 15th meeting of Solar Thermal Energy	October 8, 2021
2	Dr. Arnab Sarkar	22nd meeting of Cyclones Resistant Structures Sectional Committee, CED 57 in joint session with 4th panel meeting for R&D work, CED 57/P1	March 2, 2022
3	Dr. Arnab Sarkar	3rd meeting on R&D work, CED 57/P1 under Cyclone Resistant Structure Sectional Committee, CED 57	February 4, 2022
4	Dr. Arnab Sarkar	20th meeting of Cyclones Resistant Structures Sectional Committee, CED 57 in joint session with 1st panel meeting for R&D work, CED 57/P1	September 27, 2021

Special lectures delivered by faculty members in other institutions

Sl. No.	Name of faculty member	Topic of lecture	Institution	Date
1	Dr. Amit Subhash Shedbale	Advanced Finite Element Analysis	IIT Jammu	23-28 June, 2021
2	Dr. Meghanshu Vashista	Macro to micro characterization	BIET Jhansi (Online Mode)	21st Sept, 2021
3	Dr. Meghanshu Vashista	Health monitoring of material using green technology	NIT Patna (Online Mode)	24th Sept, 2021
4	Dr. Meghanshu Vashista	Material Characterization	VSSUT Burla (Online Mode)	23rd Sept, 2021
5	Dr. Jahar Sarkar	Exposure on Preparation & Characterization of Nanofluids & Nanomaterials	NIT Jamshedpur	October 25-29, 2021
6	Dr. Jahar Sarkar	Emerging Aspects in Refrigeration, HVAC and Liquefaction Technologie	NIT Hamirpur	January 3-7, 2022
7	Dr. Ajinkya N. Tanksale	Green Supply Chains for Materials	Mechanical Engineering Department, St. Francis Institute of Technology, Mumbai	5 January 2022
8	Dr. Mohd Zaheer Khan Yusufzai	Welding, Joining and Cladding for Preventive, Predictive & Corrective Maintenance of HEMMS for mining Industries	NCL Singrauli	14th December 2021
9	Dr. Mohd Zaheer Khan Yusufzai	Advances in Friction Stir Processing	B.I.T. Sindri, Dhanbad	7th July 2021
10	Prof. R. K. Gautam	Advancement in Engineering Materials	PKG Group of Institutions, Panipat, Haryana	December 21, 2021
11	Prof. R. K. Gautam	Sustainable Tribbology	Ajay Kumar Garg Engineering College, Ghaziabad	October 4-8, 2021
12	Prof. R. K. Gautam	Various Tribological Issues and Challenges in Manufacturing Processes	IPEC-Ghaziabad	July 26, 2021 to August 06, 2021
13	Dr. Pradyumna Ghosh	Key note lecture in 48th Fluid Mechanics & Fluid Power Conference, 2021 "Boiling behaviour of nanofluids"	BITS, Pilani, India	28th Dec 2021
14	Dr. Lakshay	Capacity Building for Effective Online Teaching & E-Content	Maharishi University of Information Technology, Lucknow	02-09-2021 to 07-09-2021
15	Dr. Joy Prakash Misra	Hybrid Machining Processes	NITTTR Chandigarh	13.05.2021

Sl. No.	Name of faculty member	Topic of lecture	Institution	Date
16	Dr. Joy Prakash Misra	Hybrid Machining Processes	BIT Sindri	18.06.2021
17	Dr. Joy Prakash Misra	Machining Processes: Conventional, Advanced & Hybrid	KHIT, Guntur	30.06.2021
18	Dr. Joy Prakash Misra	Advancements in Electro Spark Erosion Machining	KHIT, Guntur	30.06.2021
19	Dr. Joy Prakash Misra	Application of Design of Experiment Technique	Guru Nanak Institutions Technical Campus, Ibrahimpatnam	07.07.2021
20	Dr. Joy Prakash Misra	Advancement in Machining Process	G H Raisoni College of Engineering, Nagpur.	09.08.2021
21	Dr. Joy Prakash Misra	Evolution of Machining Processes	NITTTR Chandigarh	15.09.2021
22	Dr. Joy Prakash Misra	Processing of Green Composites	NIT Patna	21.09.2021
23	Dr. Joy Prakash Misra	Processing of Micro-filler Reinforced Green Composite	BIET, Jhansi	25.09.2021
24	Dr. Jeewan V. Tirkey	Renewable Energy and Biomass Gasification	Faculty of Engineering & Technology, Rama University Uttar Pradesh, Kanpur	28.05.2021
25	Prof. P. Bhardwaj	Ant Colony Optimization for Grouping Problems	HCST, SGI Agra	05.08.2021
26	Dr. Om Prakash Singh	Reforms in Indian Education System through NEP-2020	G L Bajaj Institute of Technology & Management	16th -18th Dec 2021
27	Dr. Arnab Sarkar	Development of Solar Wind based Hybrid Energy System for Zero Energy Building	NIT, Meghalaya	8.3.2022
28	Dr. Arnab Sarkar	Weibull Statistics for Wind Turbine Selection in a Particular Site	NIT, Meghalaya	9.3.2022
29	Prof. S. K. Panda	Perception of Failure Theories: Damage Tolerance Analysis	KIIT Deemed University, Bhubaneswar	05-07 Oct 2021
30	Prof. S. K. Panda	Learn to Teach PIM Fisherman Style	AICTE-ISTE sponsored Program, GIFT, Bhubaneswar	04 Jan 2022

Honours and awards

Sl. No.	Name of faculty member	Details of award
1	Dr. Jahar Sarkar	Recognized in Top 2% World Scientists, 2021 (Overall World rank = 5120 and Indian rank = 24)
2	Dr. R. R. Sahoo	Smt. Sheela Baya National Award Winner in 2021 from Institution of Engineers, Udaipur
3	Dr. Joy Prakash Misra	Guest of Honour in Valedictory Function of STTP on "Trending Trends in Advance Material, Manufacturing and Design, BCET, Durgapur, 8 Jan 2022
4	Dr Saurabh Pratap	Appointed as an Honorary Secretary, Institute of Engineers, Varanasi Local Centre
5	Dr. Arnab Sarkar	Best Teacher Award, IIT (BHU), Varanasi, 5 September 2021
6	Dr. Arnab Sarkar	Gandhian Young Technological Innovation Award has been conferred by Biotechnology Industry Research Assistance Council (BIRAC) for developing a portable spinning disc used for complete blood count.
7	Dr. R. R. Sahoo	Listed in the TOP 2% WORLD SCIENTISTS in 2021.

Fellowships of academic and professional societies

Sl. No.	Name of faculty member	Details of fellowship
1	Prof. S. K. Shukla	FRSC, Royal Society UK
2	Dr. UPPU SRINIVAS RAO	Fellow, Institute of Engineers
3	Dr. UPPU SRINIVAS RAO	Life member, ISTE
4	Dr. Lakshay	Informs Membership
5	Prof. P. Bhardwaj	Fellow, Institution of Engineers (India)
6	Dr. Saurabh Pratap	IEEE Membership
7	Dr. Saurabh Pratap	Informs Membership
8	Dr. Saurabh Pratap	IEEE Intelligent Transportation System

Books, monographs authored/co-authored

Sl. No.	Name of author/co-author	Title	Publisher
1	S. K. Shukla	Comparison of different feedstock for biodiesel production, (Book Chapter)	Elsevier
2	Meghanshu Vashista Gaurav Manik Omprakash Verma Bhuvnesh Bhardwaj	Recent Innovations in Mechanical Engineering	Springer
3	Manvandra Kumar Singh Rakesh Kumar Gautam (Book Editors)	Recent Trends in Design, Materials and Manufacturing	Springer Nature Singapore Pte Ltd
4	C. S. Ramesh Pradyumna Ghosh Elango Natarajan	Recent Trends in Mechanical Engineering: Lecture Notes in Mechanical Engineering	Springer
5	Yadav, S. Agrawal, A. K. Vora, M. K.	Modelling a Supply Chain with Price-Dependent Stochastic Demand and Discrete Transportation Lead Time. Book chapter in Emerging Frontiers in Operations and Supply Chain Management. Asset Analytics, Edited by Vipin, B., Rajendran, C., Janakiraman, G., Philip, D.	Springer, Singapore
6	Kumar V. D. Surolia Y. Mukhopadhyahy S. Chandra L	Experimental Investigation of a Sensible Thermal Energy Storage System. Book chapter in New Research Directions in Solar Energy Technologies. Energy, Environment, and Sustainability	Springer, Singapore
7	Pankaj Kumar Singh Santosh Kumar Pramod Kumar Jain	Additive Manufacturing Technologies and Post-processing, design optimization, and material considerations for Reliable Printing Book chapter in Nanotechnology Based Additive Manufacturing: Product Design, Properties and Applications	Wiley International Publications
8	Santosh Kumar	Monogram: Annual Progress Report for Development of Complex Aluminium Shell Part Using High Pressure Die Casting	Published at ME Dept. IIT(BHU).
9	S. K. Sinha	Flexible Manufacturing Systems (FMS)	Amazon platform
10	S. K. Sinha	CNC Programming Skills (Vol. 1-6)	Amazon platform

Editorial boards of journals

Sl. No.	Name of faculty member	Position (editor/ member)	Name of journal
1	Prof. Rajnesh Tyagi	Associate Editor	FRICTION
2	Prof. S. K. Shukla	Editor	AS Agriculture, acta scientific, ISSN 2581-365X
3	Dr. Jahar Sarkar	Editor	Energy Engineering
4	Dr Saurabh Pratap	Associate Editor	OPSEARCH Journal, Springer
5	Dr Saurabh Pratap	Managing Guest Editor	Computers & Industrial Engineering, Elsevier
6	Dr. Arnab Sarkar	Editor	Frontiers in Built Environment

Design and Development Activities New facilities added

Sl. No.	Details (Infrastructure, equipment, etc.)	Value (in lakhs of rupees)
1	Fuel Cell Test Rig	3.0
2	NI DAS with PT100 sensors	4.0
3	Design & Develop WHR System using Engine Waste heat through TEG.	2.5
4	Design & Develop WHR System using Engine Waste heat through PCM thermal energy storage.	1.4
5	Spin Stand and Stroboscope	3.0
6	Vinyl Cutter	1.5
7	Potentiostat	9.2
8	Inverted Fluorescence Microscope (Axio Vert)	16.0
9	Ceramic 3D Printer	4.0

Patents filed

Sl. No.	Name of faculty member	Title of patent
1	Dr. Jahar Sarkar	A dual-mode evaporator for composite climate
2	Dr. Arnab Sarkar	A portable rotating disc for blood cell counting
3	Dr. Arnab Sarkar	A point of care system comprising reagent -free haemoglobin estimation kit
4	Prof. S. K. Panda	A low-cost facile fabrication route to highly porous ceramic foam
5	Prof. S. K. Panda	Development of Waste derived low-cost Phosphorus fertilizer and a method thereof
6	Dr. Amitesh Kumar	Development of highly efficient multi-hole nozzle for the cryospray process

Research and Consultancy Sponsored research projects (Ongoing only)

Sl. No.	Title	Period	Funding agency	Amount (in lakhs of Rs.)	Project P.I.
1	Localized Electricity Generation through Modular Low Temperature ORC Units	2021-2023	CPRI Bangalore	48.4	Prof. S. K. Shukla
2	Development of advanced nanocrystalline coatings and LASER cladding system for repair work related to HEMMs and other structural components	2021-2023	NCL, Singrauli	85.8	Dr. Meghanshu Vashista
3	Photonic radiative cooler for passive sub-ambient cooling	2019-2022	IMPRINT, SERB, New Delhi	42.0	Dr. J. Sarkar
4	Development of ORC technology for waste heat utilization for the generation of electricity	2020-2023	BRNS, Mumbai	29.0	Dr. J. Sarkar
5	Development of Friction Stir Welding for repair work of high-temperature materials like EN-24 steel	2021-2023	NCL, Singrauli	53.9	Dr. Mohd Zaheer Khan Yusufzai

Sl. No.	Title	Period	Funding agency	Amount (in lakhs of Rs.)	Project P.I.
6	Development of Ti-alloy-based composites by mechanical alloying and stirrer casting route for dental applications	2019-2022	SERB, (DST) India	50.2	Prof. R. K. Gautam
7	Technology Intervention for creative economy	1 year	Mindshare	9.4	Dr. Lakshay
8	Development of Optical Fibre Cable Colouring Machine	2021- 2023	DST, New Delhi	24.0	Dr. Debashis Khan
9	3D Computational and Experimental Study on Layer Dynamics and Prediction of Critical Power Law Scales in Double-Diffusive Finger Convection	3 years	SERB (DST) India	50.0	Dr. Om Prakash Singh
10	Manufacturing of Complex Titanium Assembly Part for Missiles using Fabrication, Simulation, Testing & Prototyping studies	2022-2025	DRDL Hyderabad	47.5	Prof. Santosh Kumar
11	Assessment of Structural Vulnerability through Characterisation of Tornado for a NPP Site	3 years	BRNS, Mumbai	32.4	Dr. Arnab Sarkar
12	Pathology on a Spinning Disc	3 years	MHRD	94.1	Dr. Arnab Sarkar
13	Assessment of Vulnerability of Structures in Regard to Cyclonic Wind Loads	2 years	BIS	16.8	Dr. Arnab Sarkar
14	Prediction of Dose-Volume Histograms of Organs-at-Risk in Prostate Cancer Radiation Therapy using Machine Learning	2 years	I-DAPT-HUB Foundation, IIT (BHU), Varanasi	3.5	Dr. Arnab Sarkar
15	Development of a Multiplex Portable Spinning Disc for Effective Monitoring of Women's Health during Different Stages of Pregnancy	3 years	DST	72.9	Dr. Arnab Sarkar
16	Customized cutaneous cryotherapy using numerical technique	Sep 2021 - Oct 2024	WOS-B, DST	31.1	Dr. Amitesh Kumar
17	Development of Connected Vehicle Technology for an Urban concept Autonomous Vehicle.	March 2022- February 2024	IDAPT Hub Foundation	30.0	Dr. Amitesh Kumar
18	Impact of a micro-spray on bio mimicking substrate	2020-2022	SERB, INDIA	31.0	Dr. Binita Pathak
19	Reactivity Controlled Compression Ignition (RCCI) Combustion Engine for Methanol Utilization and Its Feasibility Analysis to be Adopted in Hybrid Electric Vehicles	January 2022 to January 2024	SERB	27.8	Dr. Akhilendra Pratap Singh

Industrial consultancy projects (Ongoing only)

Sl. No.	Name of faculty member	Title	Industry	Amount (in lakhs of Rs.)
1	Dr. Amit Subhash Shedbale	Ultrasonic Tests of Welded Joints in Stop Log Gates	Kanhar Nirman Khand–2	2.1
2	Dr. Amit Subhash Shedbale	Ultrasonic Tests of Trunnion Hub Steel Castings	Kanhar Nirman Khand–2	1.8
3	Prof. Rajnesh Tyagi	Tribological studies of Metal impregnated Carbo-graphite material under varying conditions in dry & lubricating media	Defence Materials & Stores Research & Development Establishment, Kanpur	4.0
4	Dr. Ajinkya N. Tanksale	Optimization of suburban (EMU) Trains crew link	Western Railways Mumbai	8.3
5	Prof. Santosh Kumar	Ultrasound testing of welds in Longitudinal steel welded structure Girder	Kanhar Nirman Khand-3 (Sonbhadra)	7.8

Faculty members' participation with other universities under MoUs (Ongoing only)

Research publications

Total number of papers published in refereed National journals	0
Total number of papers published in refereed International journals	184
Total number of papers presented in National conferences	2
Total number of papers presented in International conferences	28

Refereed International journals

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Proceedings of National conferences

1. Kumar A., Mahto M. K., Vashista M., Yusufzai M. Z. K. (2021) Effect of current pulsing on gas tungsten arc (GTA) welding of Ti-6Al-4V,118-126, National Welding Meet, 7-8 October 2021, organized by The Indian Institute of Welding, Tiruchirapalli Branch

2. Yadav L. K., Kumar A., Vashista M., Yusufzai M. Z. K. (2021) Effect of activated flux on bead profile during GTAW of stainless steel 304L, 109-117, National Welding Meet-2021 organized by The Indian Institute of Welding Kolkata, Hoisted by The Indian Institute of Welding Tiruchirapalli Branch.

Any other Information

Technology Developed by Dr RR Sahoo

- Developed new waste heat recovery system with PCM thermal energy storage.
- Developed new WHR system with TEG with new modifications in TE leg geometry.

- Investigated new heat pump drier for food and vegetables with new modifications i.e., solar energy, engine exhaust heat recovery, air conditioning.
- Developed new correlation for the viscosity for ternary hybrid nanofluids.
- Implementation of nano additives in diesel and biodiesel for low emission achievements.

Outreach Activities of Dr Arnab Sarkar

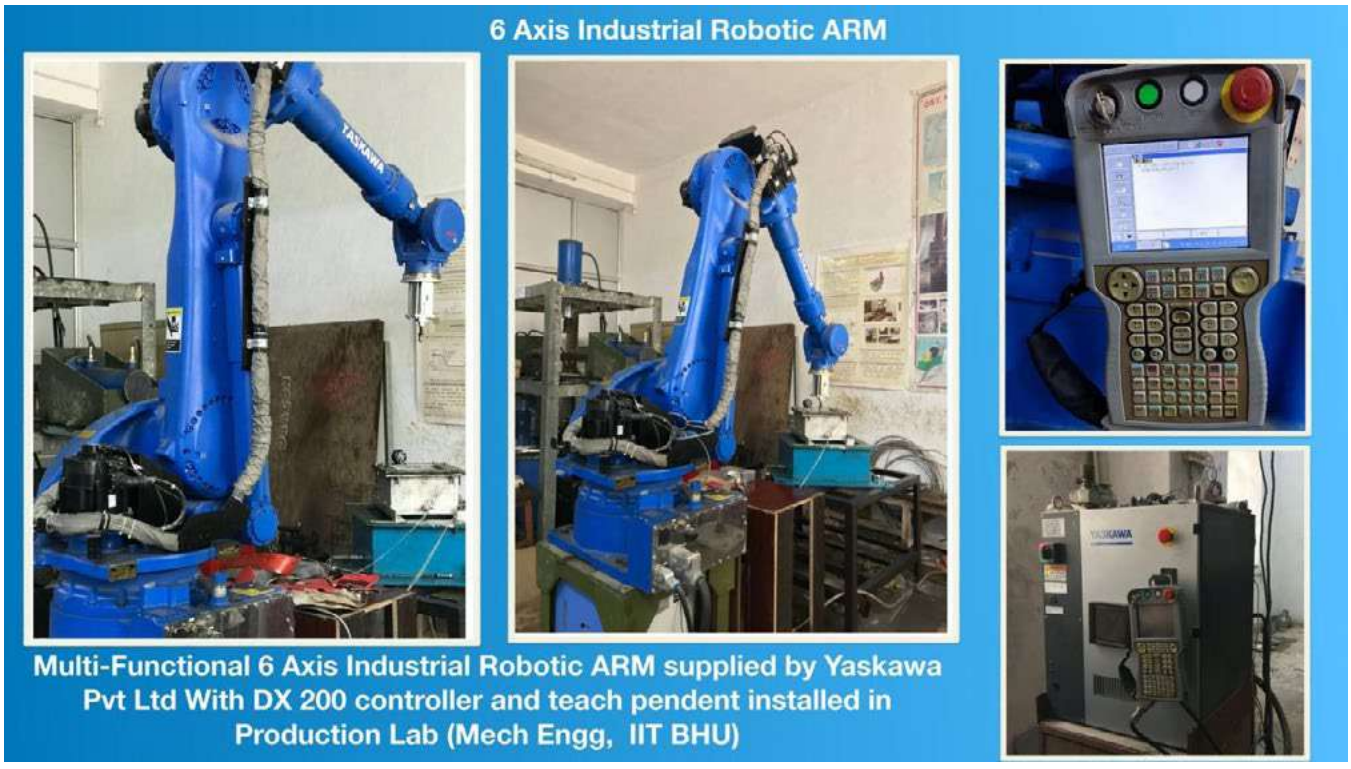
- Developed and transferred technology regarding cyclonic factor to Bureau of Indian Standard (BIS) for the revision of IS 15498 (Guidelines for improving the cyclonic resistance of low-rise houses and other buildings). Dr. Arnab Sarkar has been nominated as the Convener of IS 15498 of CED 57 for implementing the revision of the code.
- Reviewer in Applied Energy (Elsevier), Energy Conversion and Management (Elsevier), Energy (Elsevier), Wind Energy (Wiley), Quarterly Journal of Royal Meteorological Society, Journal of King Saudi Arabia (Elsevier), International Journal of Sediment Research (Elsevier), Internal Journal of Civil Engineering (Springer), International Journal of Advanced Structural Engineering (Springer), International Journal of Green Energy (Taylor & Francis), International Journal of Ambient Research (Taylor & Francis), Defence Science Journal, International Journal of Energy Research (Wiley), International Journal of Energy and Water Resources (Springer), International Journal of Exergy (Inderscience), Scientific Reports (Nature), Results in Engineering (Elsevier), Physics of Fluid (AIP)

Prof Pradyumna Ghosh

- Serving as member of "Thermal Conductivity of Biological Tissue", Standard Development, formed by ASME, Jan 2022.
- Member of Expert Advisory group, DST, Govt of India.

Key Instruments:

6-Axis Industrial Robot



The 6 Axis Robot can be used for forming, machining and welding & 3D printing operations. The photo seen is being used for Incremental Sheet Hydroforming operations.

High-energy ball mill

High-energy ball milling is a ball milling process in which a powder mixture placed in a ball mill is subjected to high-energy collisions from the balls. This machine Synthano 2s is designed for the purpose of High energy grinding, mechanical alloying, mixing, homogenizing and colloidal grinding of soft, hard, medium hard, extremely hard, brittle, ductile and fibrous materials. It also has a unique feature of controlled atmosphere high energy grinding to avoid the oxidation or reaction with surrounding environment either in dry or wet condition.

14. Department of Metallurgical Engineering

Complete Name of Department: Metallurgical Engineering

Year of Establishment: 1923

Head of the Department: Prof. Sunil Mohan (w.e.f: January 01, 2021)

Brief Introduction of the Department/School:

The Department of Metallurgical Engineering, established in the year 1923 has pioneered metallurgical education and research in the country. The far-sighted vision of Mahamana Pandit Madan Mohan Malaviyaji has helped this Department to attain such a distinction. This is now a part of IIT (BHU). The UG programme began in the year 1923 itself and the first ever undergraduate and doctoral degrees in metallurgy in the country were awarded by this Department in the years 1927 and 1955 respectively. This is also one of the first two Departments in the country to confer a postgraduate degree in metallurgy in the year 1959. The undergraduate programme was set on a firm foundation by the first Head of the Department, Professor Nagardas Purushottam Gandhi. The postgraduate programme was nurtured by the second Head of the Department, Professor Daya Swarup. Professor Tanjore Ramachandra Anantharaman, the third Head of the Department, established a fine research school of metallurgy, firmly rooted in exemplary traditions and ensured all-round growth and high profile image of the Department. Subsequently, illustrious successive Heads of the Department have continued to do their utmost to enhance the levels of excellence that the Department is known for. The Department celebrated its Golden Jubilee in the year 1973, Diamond Jubilee in 1983 and Platinum Jubilee in the year 1998 in a befitting manner. The current faculty strength consists of 6 Professors, 9 Associate Professors and 9 Assistant Professors.

Major areas of Research of the department

1. Microstructural, Structural and Chemical Characterization
2. Mechanical Behavior, Deformation Processing and Failure Analysis
3. Phase Equilibria and Phase Transformation
4. Non-Equilibrium Processing of Advanced Materials
5. Ultra-Fine Grained and Nano-Structured Material
6. Recycling of Metallurgical and E-Waste
7. Design and Development of Advanced Steels
8. Tribology and Surface Engineering
9. Thermodynamics and Kinetics of Metallurgical Processes
10. Advanced Structural and Functional Materials
11. Corrosion fatigue and hot corrosion

Area of the Department/School (in square meters): Not Known

Infrastructure

Sl. No.	Particulars	Number
1	No. of Classrooms	04
2	No. of Lecture Halls	03

Sl. No.	Particulars	Number
3	No. of Laboratory	10 labs + 1 workshop + 1 Centre
4	No. of Computers available for students in the Department/School/ School	40
5	Conference Hall	01

Unique Achievement / Preposition of the Department/School

The Department of Metallurgical Engineering has so far produced 2794 graduates, 692 postgraduates (including M.Tech dual degree) and 197 Ph.D. degree holders. The first one is a record for any Metallurgy Department in the country. The outstanding research contributions of the Department culminated in its recognition as a Centre of Advanced Study (CAS) in Metallurgy by the UGC in 1980, the first-ever Engineering Department to be so recognized in the country and the first one in our University. The Department is also recognized as a Centre for Quality Improvement Programme of MHRD/AICTE from the year 1981. The Department has received special assistance under the COSIST programmes of UGC and also as a National Electron Microscopy Facility (NELMIF) from DST in 1982. The Department has a unique distinction of receiving special assistance under CAS for four consecutive phases. The Ministry of Steel, Govt. of India approved setting up Advanced Research Centre for Iron and Steel, in the Department in project mode (2016-2021). Ministry of Railways, Govt. of India has also sanctioned Rs. 5 Crore for setting up Malaviya Chair for Railways Technology with Department as its nodal centre.

Members of the staff, research scholars and students have won a very large number of awards and distinctions in recognition of their outstanding contributions. These include Medals, Prizes, Awards and Fellowships from many prestigious national and international professional societies and other organizations. Some of the above recognitions include to John Taylor Gold Medal, Henry C. Sorby Award, Henry Marion Howe Medal, Alexander von Humboldt Fellowships, Al Kharazmi Award, S.S. Bhatnagar Prizes of CSIR, S.S. Bhatnagar Medal of INSA, Platinum Medal, Tata Gold Medal and Prizes, G.D. Birla Award, National Metallurgists' Day Awards of IIM, MRSI Medals, Young Metallurgists' Awards, INSA Medals for Young Scientists, ISCA Young Scientist Awards, Young Engineer Award of IE(I), Dr. R.H. Kulkarni Memorial Fellowships, Prof C.N.R. Rao Award, ASM-IIM visiting lectureship award, besides several best paper Awards. The faculty members have the distinction of receiving Fellowships of various professional societies such as Indian National Science Academy (INSA), International Academy of Sciences (IASc), The National Academy of Sciences, India (NASI), The Indian National Academy of Engineering (INAE), Asia Pacific Academy of Materials (APAM), The Indian Institute of Metals (IIM), The Institution of Engineers India-IE(I), The Electron Microscope Society of India (EMSI), West Bengal Academy of Science and Technology (AScT).

Students on Roll

Sl. No.	Programme	I Year	II Year	III Year	IV Year	V Year & above
1.	B. Tech/B.Arch	99	89	79	56	--
2.	Dual Degree	24	28	22	16	18
3.	M. Tech/ M. Pharm	10	21	--	--	--
4.	Ph. D (Under Institute Fellowship)	08	07	06	13	20
5.	Ph. D (Under Project Fellowship)	01	01	--	--	--
6.	Ph. D (Under Sponsored Category)	01	02	01	--	--

Names of students/scholars who attended conferences/workshops/seminars and symposia abroad or in India

Sl. No.	Name of Student	Roll No.	Conference/ Seminar/ Symposia/Workshop	Date & Venue	Financial Assistance From
INDIA					
1	Soham Mukherjee	18141009	Workshop on Pulsed Power Technology and Applications (WSPPTA-2021)	25-27 November, 2021 Bhabha Atomic Research Centre Facility, Visakhapatnam, India.	IIT (BHU), Varanasi

Sl. No.	Name of Student	Roll No.	Conference/ Seminar/ Symposia/Workshop	Date & Venue	Financial Assistance From
2	Mudila Dhanunjaya Rao	17141006	25th international conference on non-ferrous metals (ICNFM-2021)	3-4 September, 2021 New Delhi, India	NPGMM Trust, Department of Metallurgical Engineering, IIT (BHU), Varanasi.
3	Dileep Pathote	20141504	**International Conference** on Recent Trends in Energy Science and Engineering (ICRTESE-2021)	October 26-28, 2021 ONLINE	--
4	Dileep Pathote	20141504	**International Symposium** on Materials of the Millennium: Emerging Trends and Future Prospects (MMEFP-2021)	November 19-21, 2021 ONLINE	SERB
5	Dileep Pathote	20141504	**International Conference** on Advanced Materials and Mechanical Characterization (ICAMMC-2021)	December 02-03, 2021 ONLINE	SERB
6	Dileep Pathote	20141504	**Workshop** SERB Sponsored One Day Research Facility Training Programme (Hybrid Mode)	February 12, 2022 Dept. of Mechanical Engg. IIT(BHU), Varanasi-221005	--
7	Dileep Pathote	20141504	**Workshop** SERB Sponsored One Day Research Facility Training Programme (Hybrid Mode)	February 23, 2022 Dept. of Mechanical Engg. IIT(BHU), Varanasi-221005	--
8	Dheeraj Jaiswal	17141003	International Conference On Advanced Materials And Mechanical Characterization (ICAMMC-2021)	December 02-03 2021, Online	IIT (BHU), Varanasi
9	Dheeraj Jaiswal	17141003	International conference on International Symposium on materials of the Millennium: Emerging Trends and Future Prospects (MMETEP-2021)	November 19-21 2021, Online	IIT (BHU), Varanasi
10	Dheeraj Jaiswal	17141003	International conference on Recent Trends in Energy Science and Engineering (ICRTESE-2021)	October 26-28 2021, Online	

Names of students/scholars who got prizes and awards outside the Institute

S. No.	Name of Student	Roll No.	Name of Prize	Date & Venue	Prize awarded by
1	Mr. Aatishya Sood	19144001	PRODUSCOPE'21 (runners up)	28/07/22 ONLINE	IIT GUWAHATI
2	Mr. Aneesh Amarendra Namjoshi	17145009	IIM Vidyabharti Award -2021	14-15 November 2021	Indian Institute of Metals (IIM), Kolkata
3	Mr. Kumar Sundaram	20144015	Prof. T R Anantharaman Merit Scholarship	2021-22 IIT (BHU)	T R Anantharaman Education and Research Foundation

Names of scholars/students who won Convocation/Institute Day prizes

Sl. No.	Name of Student	Roll No.	Name of Prize	Prize awarded by
1	Shri Paila Suresh	19142018	I.I.T.(B.H.U.) Varanasi Medal	I.I.T.(B.H.U.) Varanasi
2	Ms. Sakshi Sharma	16144016	I.I.T.(B.H.U.) Varanasi Medal	I.I.T.(B.H.U.) Varanasi
3	Shri Aneesh Amarendra Namjoshi	17145009	I.I.T.(B.H.U.) Varanasi Medal	I.I.T.(B.H.U.) Varanasi
4	Shri Aneesh Amarendra Namjoshi	17145009	The Bishan Das Basil Medal	I.I.T.(B.H.U.) Varanasi
5	Shri Aneesh Amarendra Namjoshi	17145009	Swarnamma Memorial Gold Medal	I.I.T.(B.H.U.) Varanasi
6	Shri Aneesh Amarendra Namjoshi	17145009	Shri Aditya Kumar Awasthi Endowment Award Rs. 1.0 lakh	I.I.T.(B.H.U.) Varanasi
7	Shri Pulkit Gupta	17145046	Director's Gold Medal	I.I.T.(B.H.U.) Varanasi
8	Ms. Shristi Singh	17145055	Smt. Indira Tripathi Gold Medal	I.I.T.(B.H.U.) Varanasi
9	Shri Suraj Birendra Nath Hazra	17145060	Ms. Indira Ananthachari Endowment Fund Prize	I.I.T.(B.H.U.) Varanasi
10	Shri Birendra Yadav	17145018	Ms. Indira Ananthachari Endowment Fund Prize	I.I.T.(B.H.U.) Varanasi
11	Shri Abhishek Kumar	17145003	Ms. Indira Ananthachari Endowment Fund Prize	I.I.T.(B.H.U.) Varanasi

Faculty & their Activity

Faculty and their areas of specialisation

Sl. No.	Name, Qualifications, Employee No.	Date of award of PhD Degree	Major Areas of Specialization (Max. 3 Areas)
Professors			
1	Prof. R.K. Mandal (Ph.D.) (13849)	1990	Quasicrystals, Nanostructured Materials, Phase Transformations, Microstructural Evolution
2	Prof. N.K. Mukhopadhyay (Ph.D.) (13853)	1990	Physical Metallurgy of Complex Metallic Alloys, Nanomaterials, Mechanical Alloying, Electron Microscopy, Nanoindentation.
3	Prof. Sunil Mohan (Ph.D.) (13857)	1990	Metal-Matrix Composites, Tribology of composites, Erosion in steels, Transport processes
4	Prof. (Smt.) N.C. Santhi Srinivas (Ph.D.) (13851)	1999	Deformation and Fracture; Phase Transformations; Fatigue of Advanced Structural Materials; Failure Analysis; Advanced Steels; Additive Manufacturing, Mechanical Metallurgy
5	Prof. B.N. Sarma (Ph.D.) (13852)	2001	Computational Thermodynamics, Integrated Computational Materials Engineering
6	Prof. K.K. Singh (Ph.D.) (18188)	2010	Extractive Metallurgy, Recycling of electronic waste, aluminium dross
Associate Professors			
1	Dr. C.K. Behera (Ph.D.) (16732)	2007	Extractive Metallurgy, Experimental Thermo-lead free solder, nitrogen steel
2	Dr. R. Manna (Ph.D.) (16805)	2008	Heat Treatments of Metals, Ultra Fine Grained Metals, Severe Plastic Deformation, Phase Transformation, Design and Development of Advanced Steels, and Crystallographic Texture
3	Dr. Kausik Chattopadhyay (Ph.D.) (18241)	2008	Mechanical Metallurgy, Structure-Property Relationship of Materials, Oxidation of Metals and Alloys, Powder Metallurgy, Fatigue & Fracture, Severe Plastic deformation, Biomaterials
4	Dr. G.S. Mahobia (Ph.D.) (18287)	2013	Corrosion-Fatigue, Hot corrosion, Iron and Steel making, Welding Metallurgy, Metallurgical failure analysis

Sl. No.	Name, Qualifications, Employee No.	Date of award of PhD Degree	Major Areas of Specialization (Max. 3 Areas)
5	Dr. Joysurya Basu (Ph.D.) (50054)	2005	Electron Microscopy, Energy and Electronic Materials, Complex Structures and Phase Transformation in Metals and Ceramics
6	Dr. Vikas Jindal (Ph.D.) (18229)	2014	Computational Thermodynamics, Advanced Materials
7	Dr. J.K. Singh (Ph.D.) (18194)	2015	Foundry Metallurgy, Transport Phenomena
8	Dr. Nand Kishore Prasad (Ph.D.) (18221)	2007	Physical Metallurgy, Magnetic Materials, Nanomaterials and Biomaterials
9	Dr. Ashok Kumar Mondal (Ph.D.) (50218)	2009	Mechanical behaviour of materials, Light metals, alloys (mostly magnesium alloys) and composites - Processing, microstructural characterization and evaluation of mechanical behaviour, High temperature deformation behaviour (Creep)
Assistant Professors			
1.	Dr. Bratindranath Mukherjee (Ph.D.) (50180)	2010	Nanomaterials for Energy Applications
2.	Dr. Randhir Singh (Ph.D.) (50214)	2009	Extractive/Electro-Metallurgy, Fuel Cells and Batteries, Hydrogen Production
3.	Dr. Surya Deo Yadav (Ph.D.) (50230)	2016	Development of new steels. Modelling the microstructural evolution during creep and hot deformation, Flow stress and Creep strain modelling
4.	Dr. Subhasis Sinha (Ph.D.) (50232)	2017	Microstructure, crystallographic texture, mechanical behaviour and thermo-mechanical processing of metals and alloys
5.	Dr. Sudipta Patra (Ph.D.) (50251)	2019	Stainless Steel, Industrial processing of metals, Alloy steel development, Structure-Property correlation, Thermomechanical Processing, Microstructure & texture, Industrial failure analysis, Steel making, Waste utilization
6.	Dr. Sree Harsha Nandam (PhD) (50282)	2019	Metallic glasses, Mechanical Behaviour, Aluminum metal foams, Precipitation Kinetics
7.	Dr. Deepak Kamble (PhD) (50291)	2019	Magnetic and magnetocaloric alloys, Thermomagnetic materials & devices, Functional materials for energy applications, multiferroics
8.	Dr. Lakhindra Marandi (PhD) (50292)	2021	Mechanical Behavior of Materials, Shape memory alloys, Additive Manufacturing, Nanoindentation
9.	Dr. Praveen Sathiyamoorthi (PhD) (50295)	2016	Plastic deformation behavior, Superplasticity, Development of high performance alloys, Materials for extreme environments

Technical and Non-Teaching Staff

Sl. No.	Name, Qualifications	Designation, Employee No.	Date of Appointment in the department
1	Dr. Sankara Rao L. (Ph.D.)	Senior Technical Officer (18828)	21/01/2021
2	Shri Lalit Kr. Singh (B.E.)	Sr. Technical Superintendent (19262)	14/02/2011
3	Shri Arun Prakash (M.A.)	Sr. Technical Superintendent (14047)	18/02/1995
4	Shri A.K. Vishwakarma (B.A.)	Sr. Technical Superintendent (14099)	27/05/1987
5	Dr. Ashutosh Dubey (M.Sc., Ph.D.)	Technical Superintendent (18754)	22/12/2008
6	Shri J.P. Minz (Intermediate)	Technical Superintendent (14109)	26/05/1990
7	Shri Kamala Prasad (Intermediate)	Technical Superintendent (14116)	15/10/1998
8	Shri Rana Pratap Yadav (Intermediate)	Technical Superintendent (14117)	16/10/1998
9	Shri Chhote Lal (ITI)	Jr. Technical Superintendent (18053)	21/02/2007
10	Shri Setu Prasad (High School)	Jr. Technical Superintendent (14222)	16/05/2007
11	Shri Ashok Kr. Mishra (B.A.)	Jr. Technical Superintendent (10227)	16/05/2007

Sl. No.	Name, Qualifications	Designation, Employee No.	Date of Appointment in the department
12	Shri Binod Kr. Pathak (ITI)	Jr. Technical Superintendent (12492)	18/05/2015
13	Shri Rajendra Prasad Yadav (B.A.)	Jr. Technical Superintendent (18618)	05/08/2008
14	Shri Shashi Kant Pandey (M.Sc.)	Jr. Technical Superintendent (18619)	05/08/2008
15	Shri Samish Kr. Singh (M.A.)	Jr. Technical Superintendent (18620)	05/08/2008
16	Shri Sunil Kumar (Intermediate)	Jr. Technical Superintendent (18616)	06/08/2008
17	Shri Anjani Kr. Singh (B.A.)	Jr. Technical Superintendent (18638)	06/08/2008
18	Shri Mahendra Narain Mishra (ITI)	Jr. Technical Superintendent (18639)	05/08/2008
19	Shri Kamlesh Mishra (Intermediate)	Jr. Technical Superintendent (18617)	12/08/2008
20	Shri Balwant Singh (ITI)	Sr. Technician (19273)	10/02/2011
21	Shri Ram Ashre (Intermediate)	Sr. Technician (14109)	10/09/1996
22	Shri Sushil Kumar (B.Sc.)	Sr. Technician (19604)	13/07/2012
23	Shri Rishabh Tiwari (B.Tech, MBA)	Junior Assistant (50092)	08/05/2017

Special lectures delivered by faculty members in other institutions

Sl. No.	Name of faculty Member	Topic of Lecture	Institution	Date
1	Prof. (Smt.) N.C. Santhi Srinivas	Delivered an invited lecture on `Importance of micro-destructive testing in Archaeometallurgy; during the online short-term course on the "Archaeometallurgy and Scientific Analysis of Ancient Metal Objects".	National Research Laboratory for Conservation of Cultural Property, Lucknow	9-13th August, 2021
2	Prof. (Smt.) N.C. Santhi Srinivas	Delivered an invited lecture on `Effect of build orientation on microstructure and tensile properties of selectively laser melted M300 maraging steel, One-Day National Seminar on Additive Manufacturing: Trends and Opportunities",	Department of Mechanical Engineering, Punjab Engineering College (Deemed to be University), Chandigarh, INDIA.	December 16th 2021
3	Prof. (Smt.) N.C. Santhi Srinivas	Delivered an invited lecture on 'Metal Additive Manufacturing'	NIT, Durgapur organized by IIM Durgapur Chapter in association with IIM Students' Chapter, NIT Durgapur	27 th March, 2022
4	Prof. Kamalesh K. Singh	"Waste Management and Valorization for a Sustainable world and Environment" at International Symposium of Biotechnology and Biochemical Engineering (ISBBE-2021)	Amity University, Noida	26-27 October 2021
5	Dr G.S. Mahobia	Fatigue Testing of Materials	ATAL FDP on 'Metallurgical Testing and Failure analysis' organised by GIDC Degree Engineering College Abrama, Navsari, 13-17 September, 2021	14.09.2021
6	Dr G.S. Mahobia	Ancient Iron and Steel Making	Short-Term Course on Archaeometallurgy and Scientific Analysis of Ancient Metal Objects" scheduled from 09.08.2021 to 13.08.2021 organized by NRLC, India	12.08.2021

Honours and awards

Sl. No.	Name of Faculty Member	Details of Award
1	Prof. Sunil Mohan	Senate Nominee, Board of Governors IIT (BHU)

Sl. No.	Name of Faculty Member	Details of Award
2	Prof. (Smt.) N.C. Santhi Srinivas	Member, Programme Advisory Committee (PAC) on Materials, Minerals and Mining, Science and Engineering Research Board, Department of Science and Technology (SERB-DST), New Delhi, India.
3	Prof. Kamalesh K. Singh	Member for State Center Committee for Metallurgical Engineering" for 2021-23, The Institution of Engineers (INDIA), UP state Center.
4	Dr GS Mahobia	Outstanding Faculty in Metallurgical Engineering', 7th Venus International Science and Technology Awards – VISTA 2021. Chennai 6th November 2021.
5	Dr. Nand Kishore Prasad	Member of selection committees at IIT Goa

Editorial boards of journals

Sl. No.	Name of Faculty Member	Position (Editor/ member)	Name of Journal
1	Prof. R.K. Mandal	Member	CMC-Transtech.
2	Prof. N.K. Mukhopadhyay	Key-Reader	Metallurgical and Materials Transactions A (USA)
3	Prof. N.K. Mukhopadhyay	Editor	Journal of Institution of Engineers, Metallurgical and Materials: Series D: (Springer)
4	Prof. N.K. Mukhopadhyay	Guest Editor	Special Issue of Journal of Alloys and Compounds (Elsevier).
5	Prof. Sunil Mohan	Member	International Journal of Metals
6	Prof. (Smt.) N.C. Santhi Srinivas	Reviewer	Materials Letters, Elsevier.

Design and Development Activities

New facilities added

Sl. No.	Details (Infrastructure, Equipments, etc.)	Value (in Lakhs of Rupees)
1	EDM	7.8 Lakh
2	Renovation of Industrial Metallurgy laboratory	~ 26Lakh

Patents filed

Sl. No.	Name of Faculty Member	Title of Patent
1	Dr GS Mahobia	A COMPOSITION OF AUSTENITIC STAINLESS STEEL FOR MEDICAL IMPLANTS published on 15.10.2021 Application No.: 202011015355

Research and Consultancy Sponsored research projects (Ongoing only)

Sl. No.	Title	Period	Funding Agency	Amount (in lakhs of Rs.)	Co- ordinator
1	Setting up of Advanced Research Center for Iron and Steel at IIT(BHU), Steel Development Fund	2016-2021	Ministry of Steel, Govt. of India	3098.00	Dr. R. Manna (Coordinator) & all teachers of the Dept.
2	Malaviya Chair For Railways Technology	2015-2020	Ministry of Railways, Govt. of India	500.00 (Corpus Fund)	Prof. R.K. Mandal (Coordinator)
3	Mechanical behaviour of advanced high strength steel processed by additive manufacturing	2019-2022	SERB, DST, Govt. of India	39.84	Prof. N.C. Santhi Srinivas (PI), Dr. K. Chattopadhyay

Sl. No.	Title	Period	Funding Agency	Amount (in lakhs of Rs.)	Co- ordinator
4	Development of Ni-Free Austenitic Stainless Steel for Biomedical Application	2017-2021	Ministry of Steel, Govt. of India	284.00	Dr. G.S. Mahobia (PI), Prof. N.C. Santhi Srinivas, Prof OP Sinha, Dr. K. Chattopadhyay, Prof. Vakil Singh
5	Role of short-range ordering in designing High Entropy Alloys	2019-2022	SERB, DST, DST, Govt. of India	34.00	Dr. Vikas Jindal (PI), Prof. N. K. Mulhopdhyay (Co-PI)
6	Development of Functionally Graded Armour Composites (FGACs) Materials	2020-2023	ARMREB, DRDO	91.66	Dr. Vikas Jindal (PI), Dr. Kausik Chattopadhyay
7	Cyclic Thermochemical fuel generation	2019-2022	SERB, DST, DST, Govt. of India	51.00	Dr. Randhir Singh (PI)
8	High Performance Rare Earth Free Nanocomposite Permanent Magnets for Advanced Motors and Alternative Energy Applications	2020-2023	SERB, DST, DST, Govt. of India	56.90	Dr. Nand Kishore Prasad (PI), Dr. C. Upadhyay (SMST, IIT-BHU)
9	Development of drug-eluting thermogenic coronary stents for management of in-stent restenosis and thrombosis	2022-25	SERB, DST, DST, Govt. of India	78.54	Prof. D. Dash (IMS-BHU), Dr P. P. Kulkarni (IMS-BHU) and Dr. Nand Kishore Prasad (Co-PI)
10	In-situ microscopy study of age hardening in dispersion strengthened cast magnesium alloys and its ex-situ correlation with mechanical properties.	2020-2023	SERB, DST, DST, Govt. of India	37. 36	Dr. A.K. Mondal (PI), Prof. N.K. Mukhopadhyay, Dr. Joysurya Basu
11	Creep and corrosion behaviour of novel MRI230D magnesium alloy with nanoparticles additions	2020-2023	CSIR, New Delhi, India	18.08	Dr. Ashok Kumar Mondal (PI), Dr. Kausik Chattopadhyay
12	Atomic Scale Electron Microscopy, FIST Engineering Sciences (Level III)	2020-2025	SERB, DST, DST, Govt. of India	990	Dr. J. Basu (PI), Prof. R.K. Mandal, Prof. N.K. Mukhopadhyay, Dr. R. Manna, Dr. A.K. Mondal and Dr. B. Mukherjee
13	Development of low-modulus β-Ti alloys for biomedical applications	2019-2022	SERB, DST, DST, Govt. of India	41.08	Dr. Kausik Chattopadhyay (PI), Dr. Vikas Jindal
14	Development of a unified physical model for hot deformation and creep to support the development of high temperature materials	2019-2024	DST (Inspire)	35.00	Dr. Surya Deo Yadav (PI)
15	Development of Mesoscale models to describe hot deformation and creep of low SFE materials	2020-2022	Indo-Austrian project	21.66	Dr. Surya Deo Yadav (PI)
16	Tunable Surface Plasmon Optical Sensing Behaviour of M-MoS2 (M= Cu,Ag,Au) Alloy Nanostructures	2020-2022	SERB, DST	44.65	Dr. B Mukherjee (PI) and Prof. R.K. Mandal
17	Stability of nanostructure and residual stress developed through ultrasonic shot peening in superalloy IN718 at elevated temperatures	2020-2022	NRB, DRDO	28.868	Dr. Kausik Chattopadhyay (PI), Prof. N C Shanti Srinivas (Co-PI) & Dr. G S Mahobia (Co-PI)
18	Additive Manufactured Aerospace Alloys	2021	Raytheon Intelligence & Space, USA	$25000	Prof N. K. Mukhopadhyay (PI), Prof. N.C. Santhi Srinivas, Prof. R.K. Mandal, Dr. R. Manna, Dr. K. Chattopadhyay, Dr. J. Basu
19	Chemical recycling of electronic waste for sustainable livelihoods and material consumption in India	2021-23	GCRF-EPSRC UK	GBP 47529.88	Prof. Kamalesh, K. Singh (PI), Prof. Jason and Dr Carole of Edinburgh University

Sl. No.	Title	Period	Funding Agency	Amount (in lakhs of Rs.)	Co- ordinator
20	Art, Science and Technology of Koftgari Metal works in India	2021-22	INSA	2.40	Prof. Kamalesh K. Singh (PI)
21	Effect of composition and microstructure on mechanical properties of 7-9%Ni steel for LNG tanker and Naval application.	2021-2023	DST SERB	32.00	Dr. Sudipta Patra (PI)
22	Development of high strength Vanadium added steel for heavy gauge plate.	2022-2025	Vanitec UK limited	USD 112307	Dr. Sudipta Patra (PI) Dr. J.Basu (Co-PI)
23	Microstructural tailoring to develop biocompatible Cr-FeMo-Nb-Ti based high entropy alloys for medical applications.	2022-2024	DST SERB	30.62	Dr. Subhasis Sinha (PI)
24	Study on effect of temperature and mean stress on fatigue strength of turbine aero foil alloy	2021-2025	Gas Turbine Research Establishment (GTRE) – Bangalore	281.90	Dr. G.S. Mahobia (PI)

Industrial consultancy projects (Ongoing only)

The Department maintains a close interaction with major private sector industries of the region, with public sector undertakings and national R&D laboratories. Major beneficiaries of consultancy, testing services as well as Refresher Courses for executives, include DMRL, DRDL, VSSC, BHEL, HINDALCO, Tata Steel, JAMIPOL, Northern Coalfields Ltd, NTPC, Railways etc. and the small scale industries of Varanasi region.

Sl. No.	Name of Faculty Member	Title	Industry	Amount (in lakhs of Rs.)
1	Prof. O.P. Sinha & Dr. J.K. Singh	Assisting NCL in short listing of vendors under – Make in India, for import substitution and establishing an indigenous supply chain for replacement of HEMM spares and reduce the reliance on overseas sources for supply of high value HEMM spares	NCL, Singrauli	20.40

Research Publications

Sl. No.		No.
1	Total Number of Papers Published in Refereed National Journals	--
2	Total Number of Papers Published in Refereed International Journals	60
3	Total Number of Papers Presented in National Conferences	--
4	Total Number of Papers Presented in International Conferences	--

Refereed International Journals

1. Agrawal, M; R Singh, M Ranitović, Z Kamberovic, C Ekberg, Singh, Kamalesh K. (2021) Global market trends of tantalum and recycling methods from Waste Tantalum Capacitors: A review, Sustainable Materials and Technologies 29, e00323

2. Rao, Dhanunjaya; Singh, Kamalesh; Morrison, Carole; and Love, Jason; (2021) Optimization of process parameters for the selective leaching of copper, nickel and isolation of gold from obsolete mobile phone PCBs; Cleaner Engineering and Technology;4 100180.

3. Rao, Dhanunjaya; Singh, Kamalesh; Morrison, Carole; and Love, Jason; (2021), Recycling copper and gold from e-waste by a two-stage leaching and solvent extraction process; Separation and Purification Technology 263118400.

4. Mishra, G, Jha, R; Rao, MD; Meshram, A; Singh, Kamalesh; (2021) Recovery of Silver from Waste Printed Circuit Boards (WPCBs) through Hydrometallurgical Route: A Review Environmental Challenges, 100073.

5. Behera S, Gautam RK, Mohan S, Chattopadhyay A (2021), Hemp fiber surface modification: Its effect on mechanical and tribological properties of hemp fiber reinforced epoxy composites, Polymer Composites 42 (10), 5223-5236

6. Mishra Prerna, Santhi Srinivas NC, and Singh.Vakil; (2022): Ratcheting fatigue of modified 9Cr-1Mo steel and Inconel alloy 617 at ambient temperature: Effect of uniform plastic strain; Materials Letters 131916.

7. Mishra Prerna, Santhi Srinivas N. C., Sastry G. V. S., and Singh Vakil.; (2022)Effect of Mean Stress on Ratcheting Fatigue Behavior of Modified 9 Cr–1 Mo Steel at RT and 600° C.; Transactions of the Indian National Academy of Engineering : 1-8

8. Santhi Srinivas, N.C., Visweswara Rao, C., Sastry, G.V.S., Singh, V. (2021). Deformation Behavior of Inconel 617 Alloy Under Monotonic and Cyclic Loading. In: Ghosal, P., Carter, C.B., Vinothkumar, K.R., Sarkar, R. (eds) Applications of Microscopy in Materials and Life Sciences. Springer Proceedings in Materials, vol 11. P87-95, Springer, Singapore.

9. Mishra P., Santhi Srinivas**, N.C**., Singh, V. (2022). Response of Modified 9Cr-1Mo Steel Under Asymmetrical Stress Loading at 600 °C. In: Singh, M.K., Gautam, R.K. (eds) Recent Trends in Design, Materials and Manufacturing. Lecture Notes in Mechanical Engineering. P163-172, Springer

10. Singh MK, Verma A, Basu J, Sinha I, Chettri P, Tripathi A, Tiwari A, et. al. (2022), Rice extract assisted green synthesis of Au nanoparticles: Catalytic and SERS activities, Surface Review and Letters

11. Singh A, Bijalwan PK, Banerjee A, Dutta M, Mandal RK, Basu J (2022), Structures, interfaces and thermodynamic stability of nanocrystalline phases in rapidly solidified Fe-based amorphous nanocomposite ribbon, powder and coating, Materials Characterization 186, 111815

12. Singh A, Yasui S, Pal AS, Bendersky LA, Takeuchi I, Mandal RK, Basu J (2022), Structure and interfaces of compositionally graded Li(Ni, Mn)xOy cathodes on (111) Nb-doped SrTiO3 Philosophical Magazine, 1-33

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of Rare Multimetallic Magnetite Ore and Binder, Transactions of the Indian Institute of Metals 74 (8), 2049-2055

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alloy with calcium and bismuth additions, Journal of Alloys and Compounds 873, 159600

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Other activities

International collaboration/achievements by the Department/School:

Prof. N.K. Mukhopadhyay (as PI) with Prof. N.C. Santhi Srinivas, Prof. R.K. Mandal, Dr. R. Manna, Dr. K. Chattopadhyay and Dr. J. Basu was awarded a prestigious International Project from Raytheon Intelligence & Space, USA to work on additive manufactured aerospace alloys. ($25000/-) (2021).

Indian Faculty visits in the Department/School/School

Sl. No.	Name of Faculty Member	Purpose of Visit	Date and Venue
1.	Dr. Amit Arora Associate Professor of Materials Engineering Advanced Materials Processing Research Group, Indian Institute of Technology Gandhinagar, Palaj, Gandhinagar	To deliver lecture on "Friction Stir Processing - Applications in Surface Modification and Heat Sinks"	December 10, 2021 Department of Metallurgical Engineering, Indian Institute of Technology (BHU) Varanasi

Foreign Faculty Visits in the Department/School/School

Sl. No.	Name of Faculty Member	Purpose of Visit	Date and Venue
1.	Dr. Deep Jariwala Assistant Professor Department of Electrical and Systems Engineering, University of Pennsylvania, Philadelphia	To deliver centenary lecture "Two-Dimensional Materials and Heterostructures for Next Generation Electronics and Photonics"	March 09, 2022 Department of Metallurgical Engineering, Indian Institute of Technology (BHU) Varanasi

15. Department of Mining Engineering

Complete Name of Department: Mining Engineering

Year of Establishment: 1923

Head of the Department: Prof. Piyush Rai w.e.f.: 23.04.0219

Brief introduction of the Department/School:

The Department of Mining Engineering a well-conceived dream of the founder of this university **PANDIT MADAN MOHAN MALVIYAJI** and the oldest Mining Engineering Department in the country, came into existence as early as 1923, as a section of the Department of Geology, Mining and Metallurgy. Later, in the year 1944, separate departments of Mining and Metallurgy were constituted under the College of Mining and Metallurgy.

The first Ph.D. degree in Mining Engineering in the country was awarded from this department in the year 1964. This lead was further strengthened by introducing the First Post- Graduate course in 1966 leading to M.Sc. degree in Mining Engineering n Metal Mining and Coal Mining, respectively and later the M.Sc. degree in Mine Planning was introduced in 1972. Since 1995-96 the department offers M.Tech. degree in Mine Environment, Mine Planning and Rock Mechanics.

The Department of Mining Engineering, BHU was one of the first in the country to receive UGC Assistance under COSIST and SAP Programme in 1984. Subsequently, the Department was upgraded as a Centre of Advanced Study in the area of Rock Mechanics and Ground Control in 1984.

The Department of Mining Engineering, IIT (BHU) occupies a pioneering position in the field of mining education and research. It has many firsts to its credit. The first Bachelor, Postgraduate and Doctoral degrees in mining engineering in India have been awarded by this department. Today's Mineral Industry is being run by many of its illustrious alumni who are holding key positions within the country and abroad. Senior faculty members have been recognized by the mining and allied industries as experts in the respective fields and are members of the important decision making bodies associated with CIMFR, NIRM, UGC, ISMU, NCL, CCL, SCCL, CIL, HZL, UCIL etc. The Department received generous grants to accelerate its research and developmental activities.

The Department is divided into six divisions with laboratories that are well equipped with the conventional and modern facilities. Facilities have also been developed for research in collaboration with the mining industry to deal with their practical problems, these laboratories are also equipped to undertake fundamental research in the field of mining.

The above divisions consist of 19 laboratories. The Department is also provided with an Underground Experimental Model Mine well equipped for demonstration, experimental and research purposes particularly in the field of underground mechanised transport systems, mine ventilation and mine surveying experiments.

Major areas of Research

- Rock Mechanics & Ground Control and numerical modelling
- Mine Environment, Mine Ventilation, Mine Safety, Water Soluble Polymer
- Mining Geology, Mine Water Management & Environmental Pollution
- Mining Methods, Production and Productivity analysis of Mining Machines
- Design of Structure in Rock, Mine Planning, Mine Environment
- Reliability Analysis and and Slope stability
- Environmental Economic, GIS and Remote Sensing, Operations Research
- Mine Surveying, Mine economics, Mine legislation and Computer Applications in Mining

- Mine Safety, Risk Analysis, Reliability and Rock Cutting Technology
- Rock Fragmentation Engineering, Rock Mechanics, Surveying
- Coal Analysis, Mineral Beneficiation

Area of the Department/School (in square meters):

- Ground floor (including Model Experimental of Underground Mine) = 5815.0826 m^2
- Ground Floor Open Space & Workshop & Laboratories = 1829.179 m^2
- First Floor = 3219.4264 m^2
- Second Floor = 505.3867 m^2

Infrastructure

Sl. No.	Particulars	Number
1	No. of Classrooms	03
2	No. of Lecture Halls	01
3	No. of Laboratory	07
4	No. of Computers available for students in the Department/School	32

Unique Achievement / Preposition of the Department/School

- Special Assistance Programme
- COSIST
- FIST Assistance
- MODROB
- Centre of Advanced Study in the area of Rock Mechanics & Ground Control and Geo-Environment

Academic programmes offered

Students on Roll

Sl. No.	Programme	I Year	II Year	III Year	IV Year	V Year & above
1.	B. Tech/B. Arch	128	80	98	80	
2.	Dual Degree	28	16	21	15	19
3.	M. Tech/ M. Pharm	30	30			
4.	Ph. D (Under Institute Fellowship)	04	02	07	04	04
5.	Ph. D (Under Project Fellowship)	01				01
6.	Ph. D (Under Sponsored Category)		02			

Faculty & their activities Faculty and their areas of specialisation

Sl. No.	Name, Qualifications, Employee No.	Date of award of PhD degree	Major areas of specialization
Professors			
1	Dr. Piyush Rai, B.E., M.Tech., Ph.D. (all in Mining Engineering), Professor & Head 13868	2002	Mining methods; Rock fragmentation by blasting; Performance assessment and planning for enhanced production & productivity aspects of equipment

Sl. No.	Name, Qualifications, Employee No.	Date of award of PhD degree	Major areas of specialization
2	Dr. B.K. Shrivastava	1986	Mining Machinery, Rock Mechanics & Ground Control
3	Dr. N.C. Karmakar	2000	Mine Environment, Mine Ventilation, Mine Safety, Water Soluble Polymer
4	Dr. A. Jamal	1989	Mining Geology, Mine Water Management & Environmental Pollution
5	Dr. S.K. Sharma	2009	Design of Structure in Rock, Mine Planning, Mine Environment
6	Dr. S. Gupta	2004	Reliability Analysis, Mine Ventilation
Associate Professors			
1	Dr. R. P. Singh	-	Mine fire, Mine mechanization & Planning
2	Dr. Ashok Jaiswal	2007	Strata Control, Stability analysis, Numerical Simulation
3	Dr. Rajesh Rai	2009	Rock Mechanics, Slope stability, Machine learning
4	Dr. A Kumar	2014	Environmental Economics, Mine Optimisation
5	Dr. G.S.P. Singh	2008	Rock Mechanics and Ground Control
6	Dr. S. K. Palei	2007	Mine Safety Engineering, Reliability Analysis of HEMM, Occupational Health & Safety
7	Dr. Amit Kumar Verma	2012	Slope stability, Landslide, Rock Mechanics, Numerical Modelling, AI
Assistant Professors			
1	Dr. Tarun Verma	2016	Mine Environment, Mine Ventilation, Mine Surveying, Mine economics
2	Dr. Suresh Kumar	2015	Rock Fragmentation Engineering, Rock Mechanics, Surveying
3	Dr. Nawal Kishore	2004	Mine Planning, Surface Mining Operations
Emeritus Professors			
1	Prof D P Singh		Rock mechanics

Research Staff:

Sl. No.	Name & Qualification	Major Areas of Specialization (Max. 3 Areas)
1	Dr. A.K. Singh	Mine Environment
2.	Dr. C.S. Singh	Rock Mechanics

Technical and Non-Teaching Staff

Sl. No.	Name, Qualifications	Designation, Employee No.	Date of Appointment in the department
1	Shri Mithilesh Kumar Gupta, B.A. & Polytechnic in Mechanical Automobile Engineering	Senior Technical Superintendent, 18023	29.01.2007
2.	Shri Lalmani, Intermediate and Diploma in Mechanical Engineering	Technical Superintendent, 18650	12.08.2008
4.	Shri Anupam Kumar Debey, M.Sc. (Biochemistry), PG (Envi. Science.) & M.A. (Social Science)	Technical Superintendent, 18751	16.12.2008
5.	Shri A.K.Pandey, M.A. (Hindi)	Technical Superintendent, 14085	13.04.1989
6.	Shri Rajendra Prasad, B.A.	Technical Superintendent, 14086	20.04.1989
7.	Shri Bindresh Yadav, High School Science	Technical Superintendent, 14088	22.12.1990
8.	Shri Indu Bhusan Pal, Intermediate (Science)	Technical Superintendent, 14089	01.02.1991
9.	Shri Ramdhani Prasad, Intermediate (Science)	Technical Superintendent, 14090	01.06.1994
10.	Shri Ram Sewak Singh, Intermediate (Science)	Technical Superintendent, 14091	07.01.1997
11.	Shri Mahendra Yadav, Intermediate (Science)	Senior Technician, 18644	05.08.2008

Sl. No.	Name, Qualifications	Designation, Employee No.	Date of Appointment in the department
12.	Shri Vijay Prakash Shrivastava, Intermediate (Science)	Senior Technician, 18642	05.08.2008
13.	Shri Ajay Kumar Patel, M.Sc. (Geology)	Senior Technician, 18641	06.08.2008
14.	Shri Sunil Kumar Mishra, B.A. & ITI Degree	Senior Technician, 18643	05.08.2008
15.	Shri Bansh Narayan Pal, Intermediate (Science)	Junior Technician, 10111	02.06.1980
16.	Shri Rajkumar Singh, Intermediate (Science)	Junior Technician, 16963	23.04.2004
17.	Shri Pyarelal, Intermediate & ITI Degree	Junior Technician, 19601	11.07.2012
Non-Teaching Staff			
1	Shri Ashish Shankar Gupta, M.A. in Sociology from IGNOU	Junior Assistant, 50082	08.05.2017
2	Ms. Neha Gautam, Master in Mass Communication & Journalism	Junior Assistant, 50120	27.07.2017

Short-term courses/workshops/seminars/symposia/conferences organised by faculty members

Sl. No.	Coordinator	Title	Period
1	Prof. Piyush Rai as Conference Convenor from IIT (BHU) side	International Conference on Opencast Mining Technology & Sustainability (ICOMS-2020) organized by the Northern Coalfields Limited, Singrauli in association with IIT (BHU) Varanasi, under the existing MoU between the IIT (BHU) and NCL.	Dec., - 13-14, 2021, NCL, Singrauli

Short-term courses/workshops/seminars/symposia/conferences/training programmes attended by faculty members in academic institutions and public sector undertakings

Sl. No.	Name of faculty member	Title	Period and venue
Seminars/Symposia/Conferences			
1	Prof. Piyush Rai	International Conference on Sustainable Mining Options...Way Forward (ICMSO-2022), being Org jointly by IMMA, MOIL, WCL and VNIT, Nagpur	3-5 June, 2022 (To be attended in on-line mode and deliver a Keynote)
2	Prof. Piyush Rai	Seminar on "Future of Coal" NTPC in collaboration with World Coal Association (WCA), 25 April, 2022, Ranchi	25 April, Radisson Blu, Ranchi
3.	Prof. Piyush Rai	"GEOMINETECH" Annual Symp., New Equipment Technology Management and Safety in Mines and Mineral Based Industries, ENTMS,	11-12 May, 2022,Swosti Premium, Bhubaneswar
Meetings			
1.	Prof. Piyush Rai	8th Academic Council meeting of Bikaner Technical University, Rajasthan	17 May, 2022 (Virtual mode)
2.	Prof. Piyush Rai	7th Academic Council meeting of Bikaner Technical University, Rajasthan.	01 Nov., 2021 (Virtual mode)
3.	Prof. Piyush Rai	2nd Board of Studies meeting, of Bikaner Technical University, Rajasthan.	21-22 December, 2021, Jodhpur (Physical mode)
4.	Prof. Piyush Rai	24th meeting of Technical sub-committee of the Standing Scientific Research Committee of the MoC, New Delhi	25 Feb., 2022 (Virtual mode)
5.	Prof. Piyush Rai	58th meeting of the Standing Scientific Research Committee of the MoC, New Delhi	15 Sept, 2021 (virtual Mode)
6	Dr S K Palei	Research Visit	IIT Delhi [7-10 March 2022]

Special lectures delivered by faculty members in other institutions

Sl. No.	Name of faculty member	Topic of lecture	Institution	Date
1	Prof. Piyush Rai	**Keynote Lecture** entitled Sustainability in Indian Surface Coal Mining Industry – A Brief Techno-Environmental Overview	International Conference on Sustainable Mining Options…Way Forward (ICMSO-2022), being Org jointly by IMMA, MOIL, WCL and VNIT, Nagpur	3-5 June, 2022 (Hybrid mode)
2	Prof. Piyush Rai	**Keynote Lecture** entitled "Indian Coal Industry: Where Do We Go From Here...???"	Seminar on "Future of Coal" NTPC in collaboration with World Coal Association (WCA), 25 April, 2022, Ranchi	25 April, 2022 (Physical mode)
3	Prof. Piyush Rai	**Keynote Lecture entitled** "Coal Mining in India: The Dilemma and Way Forward"	"GEOMINETECH" Annual Symp., New Equipment Technology Management and Safety in Mines and Mineral Based Industries, ENTMS, May, 11-12, 2022, Bhubaneswar.	May 11-12, 2022 (Physical mode)
4	Prof Suprakash Gupta	Quantification and prediction of human errors in industry jobs – Issues, challenges and future directions	Centre of Excellence in Safety Engineering and Analytics (CoE-SEA), IIT Kharagpur	October 29, 2021

Honours and awards

Sl. No.	Name of faculty member	Details of award
1.	Prof. Piyush Rai	Continues as **Member, Board of Governors,** Valliamai Engineering College, Anna University, Chennai, as **UGC Nominee** for 5-years
2.	Prof. Piyush Rai	Continues as **Member,** Apex Standing Scientific Research Committee, Ministry of Coal, New Delhi.
3.	Prof. Piyush Rai	Was the Member, Star Rating Inspection Committee, the (MoC), Office of the Coal Controller, Kolkata.
4.	Prof. Piyush Rai	Nominated as Chairman, Board of Studies (BoS), Dept. of Mining Engineering, Bikaner Technical University, Bikaner.
5.	Prof. Piyush Rai	Nominated as Member, Academic Council, Bikaner Technical University, Bikaner.
6.	Prof. Piyush Rai	Continues as Member, Academic and Research Audit Committee, NIT, Raipur, Raipur
7.	Prof. Piyush Rai	Chaired a Technical Session, 22nd.GEOMINETECH Annual Symp., New Equipment Technology Management and Safety in Mines and Mineral Based Industries, ENTMS, May, 11-12, 2022, Bhubaneswar

Editorial boards of journals

Sl. No.	Name of faculty member	Position (editor/ member)	Name of journal
1	Dr. Piyush Rai	Member, panel of reviewers in **SCI/SCI-E and SCOPUS** Journals	i) Int. Jl. Measurement ii) Engineering with Computers iii) International Journal of Rock Mechanics and Mining Sciences iv) Int. Jl.Rock Mechanics and Rock Engineering v) Acta Montanistiska vi) Int. Jl. Neural Computing and applications vii) Journal of Scientific & Industrial **Research (CSIR publication),** viii) Int.Journal of Sustainable Mining ix) Int. Journal of Mining Science and Technology x) Int. Journal of Geomechanics for Energy and Environment

Sl. No.	Name of faculty member	Position (editor/ member)	Name of journal
			xi) Powder Technology Jl., xii) Mining, Metallurgy and Exploration Jl. xiii) Jl. of Institution of Engineers (India) xiv) Int. Jl. Geo-technical and Geological Engg. etc. xv) Sustainability xvi) Jl. of Applied Sciences
2	Dr Rajesh Rai	reviewers in **SCI/SCI-E and SCOPUS** Journals	i) Institute of engineers , Series D ii) Scientific reports iii) Indian Geotechnical journal iv) Arabian journal of geosciences v) Geotechncial and geological engineering

Design and Development Activities

New facilities added

Sl. No.	Details (Infrastructure, equipment, etc.)	Value (in lakhs of rupees)
1	Creep testing equipment	0.9
2	Thermal conductivity equipment	1.2

Research and Consultancy Sponsored research projects (Ongoing only)

Sl. No.	Title	Period	Funding agency	Rs (in lakhs)	Project P.I
1	Developing Slope Stability Models for Design of Long Term Stable Dump Slopes through proper benching and vegetation- Part A	3 years	NCL, Coal India	68	Dr Rajesh Rai Dr Ashok Jaiswal
2	Developing Slope Stability Models for Design of Long Term Stable Dump Slopes through proper benching and vegetation- Part B	3 years	NCL, Coal India	141	Dr G S P Singh Prof S K Sharma
3	Whole Body Vibration Exposure on HEMM Operators in Surface Coal Mines – An Assessment of Various Contributing Factors	3 years	SERB, New Delhi	40.03	Dr. S K Palei
4	Optimization of capacity Utilization of Draglines deployed in NCL through Big data Analytics	3 years	NCL	84	Prof Suprakash Gupta
5	Development and Adoption of Software for 3D Balancing Diagram for Effective Operation of Draglines in Mines of NCL Singrauli	2 Years	NCL, Singrauli, CIL	28.5	Dr.N.Kishore
6	Design and Development of Micro Seismic based technique for monitoring and prediction of slope failure in Pandoh, Himachal Pradesh, India	3 years	SERB	49.77	Dr A K Verma
7	Contribution of Neighboring Industries over the Air Quality of the Mining Area	3 years	NCL	134	Prof A Jamal
8	Study of Impact Assessment of Back filling of Fly Ash in Abandoned Gorbi Mine and Treatment to Avoid Contamination of Ground water and soil	3 years	NCL	124	Prof A Jamal
9	Forewarning System for Landslide Prediction along Mangan and Chungthang road, Sikkim, India	3 years	DST	45.65	Dr A K Verma

Sl. No.	Title	Period	Funding agency	Rs (in lakhs)	Project P.I
10	Design and Development of Drone Mounted Optical Sensor for Continuous Monitoring of PM 2.5 and PM 10 at Railway Siding Before, during and After Loading Operation	1 year 6 months	S&T, Ministry of Coal	36.84	Prof. Piyush Rai and Dr. Rakesh Kumar Singh
11	Development of prototype of early warning systems on impending goaf for underground coal mining	2022-2025	SERB, DST	36.916	Dr Ashok Jaiswal

Industrial consultancy projects (Ongoing only)

Sl. No.	Name of faculty member	Title	Industry	Amount (lakhs Rs.)
1.	Dr. A.K. Verma (PI)	Designing and Vetting of Treatment of Landslide & Slope Failure	Spar Geo Infra Pvt. Ltd.	5.31
2.	Dr. Suresh Kr. Sharma (PI) Prof. Piyush Rai (Co-PI)	Scientific Study for blasting in danger zone at proposed Patch A-3 (Revised) of Ghutway section of Damoda Colliery under Barora Area of BCCL as per the provisions of Clause 3 of Regulation 196 of Coal Mine Regulation 2017	BCCL	5.31
3.	Dr. Rajesh Rai Dr. Ashok Jaiswal	Design of Shoring system by for four projects of Indigo Infra	Indigo Infra Project Pvt. Ltd, New Delhi	7.08
4.	Dr. Rajesh Rai Prof. B.K. Shrivastava Prof. A. Jamal Dr. Ashok Jaiswal	Scientific study of fly ash utilization/dumping/ Mixing in the OB of the running/active mines of NCL along with its viablity and safety aspect of man and machinery	NCL Singrauli,	80.05
5.	Dr. A.K. Verma (PI)	Scientific study including its method of working determination, planning and designing of ultimate pit slope, dump slope and monitoring of slope-stability of mechanized opencast.	BCCL, Kusunda	4.98
6.	Dr. A.K. Verma (PI)	Site Scientific Investigation and Routine Audit (RA) at JMS HQ Project	JMS Mining Pvt. Ltd., Kolkata	2.20
7.	Dr. G.S.P Singh (PI) Prof. S.K. Sharma Dr. Nawal Kishore	Scientific study to extract the property of seam IV and V stranding on pillars in the northern (zone 1) and middle (zone 2) parts of Kurasia colliery, SECL	SECL, Kurasia mine, Shirmiri Area, SECL	13.57
8.	Dr. A.K. Verma (PI) Prof. P. Rai (Co.P.I.)	Hill Slope Stablisation for 91 RCC/14 BRTF of Project Vartak	Commander 14 BRTF	29.50
9.	Dr. G.S.P Singh (PI) Prof. S.K. Sharma Dr. Nawal Kishore	Scientific study to determine the stability of ground over depillared area for establishing surface coal gasification plant at Bhatgaon colliery of Bhatgoan Area	SECL, Bhatgaon Area	33.63
10.	Dr. Nawal Kishore (P.I.) Prof. S.K.Sharma, Dr.G.S.P.Singh	Scientific Study in Manikpur Opencast mine of Korba Area SECL as per the guidelines issued by DGMS (Tech.) Circular No. 03 of 2020 dated 16.01.2020	SECL, Korba Area	32.48
11.	Dr. Tarun Verma (PI)	Scientific study of the air pollution associated with operationalization of Wharfwall and Pollution Control/ Mitigational Measures to minimize pollution load	NCL, Khadia Project, Sonebhadra	5.31
12.	Dr.C.S. Singh (PI) Prof. S.K. Sharma Dr.G.S.P Singh Dr. N Kishore	Appointment of safety consultant for mining project of HSIIDC over an area 258.3 hectare at village Khanak, Teshsil Tosham, Dist. Bhiwani, Haryana	Khanak Mine, HSIIDC	11.92
13.	Dr. Ashok Jaiswal (PI) Prof. B.K. Shrivatva Dr. Rajesh Rai	Design of roof support and propose instrumentation plan	Sripur Area, ECL	5.31

Sl. No.	Name of faculty member	Title	Industry	Amount (lakhs Rs.)
14.	Dr. A.K. Verma (PI)	Slope Stabilization works, Rockfall Protection System at identified Slide prone areas above Dam Spilway System and powerhouse Area of 1200 MW Teesta Stage-III HEP Sikkim Consultancy works for approval of designs & drawings.	Maccaferri Environment Solutions Pvt. Ltd.	3.54
15.	Dr. Suresh Kr. Sharma (PI) Prof. Piyush Rai (Co-PI)	To conduct Scientific study for controlled deep hole blasting at Parej East Open Cast Project, M/s CCL within 500m but beyond 100 m as per Regulation 196 (2), 196(3) & 196 (4) CMR 2017	Parej East Open Cast Project, CCL	5.80
16.	Prof. B.K. Shrivastva (PI) Dr. Rajesh Rai Dr. Ashok Jaiswal	Review of Geotechnical study for slope stability to increase the present internal dump height 90m (above OGL) to 120m (above OGL) for maximising the waster dumping in future	M/s Jaiprakash Power Ventures Limited, Amelia North Coal Mines	6.00
17.	Dr. C.S. Singh	Determination of Physical properties of Rock Core samples of Highway Tunnel at Rabangal, South Sikkim of M/s Nagyan Constructions Pvt. Ltd.	M/s CM Engineering & Solution	1.54
18.	Prof. B.K. Shrivastva (PI)	3D Subsidence study at Dhirauli Coal Block	M/s Stratatech Mineral Resources Private Limited	12.98
19.	Dr. A.K.Verma (P.I.) Prof. P. Rai (Co.P.I.)	(DPR)/ Carrying out survey, Ground test, design test and submission of reports for hill slope stabilization works, under 761 BRTF of project Brahmank in Arunanchal Pradesh	HQ 761 BRTF, C/o 99 APO Headquarters, Chief Engineer, Project Brahmank	70.75
20.	Dr. Rajesh Rai (PI) Prof. B.K.Shrivastva (CoPI) Dr. Ashok Jaiswal (CoPI)	Scientific study of fly ash utilization/dumping/ Mixing in the OB of the running/active mines of NCL along with its viablity and safety aspect of man and machinery Block-B Project	NCL, Singrauli, M.P.	9.22
21.	Prof. Piyush Rai (P.I.) Dr. A.K.Singh (Co-P.I.)	(53) nos. of samples for determination of Proximate Analysis at 60% Rh & 40 Degree C and GCV	Coal Controller's Organization, Ranchi	3.42
22.	Dr. A.K.Singh (P.I.) Dr. R.P.Singh (Co-P.I.)	Work order to do sampling and analysis report for provisional grade declaration for one exposed seam at Suliyari coal mine, M.P.	APMDC Ltd, Suliyari coal mine, M.P.	0.45
23.	Prof. B.K. Shrivastva (P.I .) Dr. Rajesh Rai (Co.P.I.) Dr. Ashok Jaiswal (Co.P.I.)	Scientific study for slope stability	Ambuja Cement Ltd, Nagpur	8.10
24.	Prof. B.K. Shrivastva (P.I.) upto 30.06.2022 Dr. Ashok Jaiswal (Co.P.I.)	Scientific study on Stability of underground working of GDK No. 2 & 2A Incline due to the proposed 120 m height external dump of GDK Coal Mine no. 2 & 2A and 5 RG-1 Area SCCL	Kothagudem Colloeries, Singareni Collieries Company Limited	12.00
25.	Prof. B.K. Shrivastva (P.I.) upto 30.06.2022 Dr. Ashok Jaiswal (Co.P.I.)	Scinetific study for depillaring of Panel No. C-1 in No. 1 seam by caving method with Continous Miner technology at GDK No 11 Inline, RG 1 Area, SCCL	Kothagudem Colloeries, Singareni Collieries Company Limited	14.80
26.	Prof. A. Jamal and Er. R P Singh	To carry out study of pollution load bearing capacity of the area around the Jagannathpur OCP of Bhatgaon area	SECL, Bhatgaon area	30.21272

Research publications

Total number of papers published in refereed National journals	2
Total number of papers published in refereed International journals	10
Total number of papers presented in National conferences	0
Total number of papers presented in International conferences	5

Refereed International journals

1. Balakrishnan, V. and Rai, Piyush. "An Overview of Flyrock and its Prediction in Surface Mine Blasting Using Soft Computing Techniques, Recep, Tayyip Erdogan University Journal of Science and Engineering, 2(2), pp: 105-19, 2021. DOI: 10.53501/rteufemud.986903.

2. Paurush, Punit and Rai, Piyush (2022) "Comprehensive Evaluation of Ground Vibrations Induced by Blasting in a Limestone Quarry", Current Science Jl., (SCI), In-press.

3. Kumar V., Palei S. K., Karmakar N.C. and Chaudhary D. K. (2022). Whole-body vibration exposure vis-à-vis musculoskeletal health risk of dumper operators compared to a control group in coal mines. Safety and Health at Work 13(1): 73–77.

4. Mishra A., Palei S. K., Karmakar N.C. and Mishra M. (2021). Economic risk assessment of PM10 in coal-based industrial region and its management strategy. Arabian Journal of Geosciences 14 (23).

5. AK Verma, MK Jha, PK Gautam, AK Mishra, H Vardhan, SK Singh (2021) Prediction of thermal conductivity and damage in Indian Jalore granite for design of underground research laboratory, Neural Computing and Applications, 1-10

6. PK Gautam, R Dwivedi, A Kumar, A Kumar, AK Verma, KH Singh (2021) Damage characteristics of jalore granitic rocks after thermal cycling effect for nuclear waste repository, Rock Mechanics and Rock Engineering 54 (1), 235-254

7. Arunava Ray, Harshal Verma, Ashutosh Kumar Bharati, Rajesh Rai, Radhakanta Koner and Trilok Nath Singh (2021) Numerical modelling of rheological properties of landslide debris. Natural Hazards https://doi.org/10.1007/s11069-021-05038-4

8. B Behera, G S P Singh, SK Sharma, (2021) "Assessment of Excavation Damage and Spalling Potential at a Mechanized Longwall Face – A Numerical Modeling Study" Geomechanics and Geophysics for Geo-Energy and Geo-Resources

9. Harshal Verma, Arunava Ray, Rajesh Rai, Tushar Gupta, Neeraj Mehta (2021) Ground improvement using chemical methods: A review. Heliyon 7, e07678, https://doi.org/10.1016/j.heliyon.2021.e07678

10. Arunava Ray, Rajesh Rai & T. N. Singh (2021) The Effect of Discontinuity Orientation and Thickness of the Weathered Layer on the Stability of Lesser Himalayan Rock Slope Journal of the Geological Society of India volume 98, pages260–270

11. Vishwakarma, A K, V N Mishrab, R Rai and B K Shrivastva (2021). Quantitative assessment of the effect of mining subsidence on the health of native floras using remote sensing techniques. Results in Geophysical Sciences, Volume 8, December 2021, 100031.

12. Saba Shirin, Aarif Jamal, Christina Emmanouil, Akhilesh Kumar Yadav, 2021. Assessment of characteristics of acid mine drainage treated with fly ash. Applied sciences11, 9, 3910

13. Akhilesh Kumar Yadav, Saba Shirin, Christina Emmanouil, Aarif Jamal,2022. Effect of Seasonal and Meteorological Variability of Air Pollution in Singrauli Coalfield. Aerosol Science and Engineering.6 1.61-70

14. AK Yadav, S Shirin, C Emmanouil, A Jamal. 2022. Effect of Seasonal and Meteorological Variability of Air Pollution in Singrauli Coalfield. Environmental Quality Management 27 (4), 87-95

15. Modi, P., Jamal, A., Varshney, R., Rahi, I. C., and Siddiqui, M. A. (2022). Rare Earth Elements mobility, leaching and recovery by different chemicals treatment on coal samples and calcined samples of Sohagpur Coalfield, Madhya Pradesh India. International Journal of Coal Preparation and Utilization. Doi: 10.1080/19392699.2022.2031171

16. Modi, P., Jamal, A., Varshney, R., and Rahi, I. C. (2021). Occurrence, mobility, leaching and recovery of Rare Earth Elements and Trace elements in Sohagpur Coalfield, Madhya Pradesh, India. International Journal of Coal Preparation and Utilization. January 2022. Doi: https://doi.org/ 10.1080/19392699.2021.2014823

Refereed National journal

1. Ray, A., Bharati, A. K., Rai, R., & Singh, T. N. (2021). Landslide occurrences in Himalayan residual soil: a review. Himalayan Geology, 42(1), 189-204.

2. Pawan Kumar Yadav, Suprakash Gupta and Deepak Kumar, Benchmarking the performance of heavy earthmoving machines – a review, Journal of Mines, Metals & Fuels, Vol. 69, No. 7, July 2021, pp 225-232

3. G Gupta, SK Sharma, G S P Singh (2022), "Dump Slope Stability Analysis Using Artificial Intelligence", Mines, Metals and Fuels 70 (3)

4. B Kumar, P Paurush, SK Sharma, G S P Singh, (2021), "Assessment of coal pillar stability using principal component analysis and stepwise selection and elimination", Mines, Metals and Fuels 69 (3)

5. A Galav, G S P Singh, Sanjay K Sharna (2021), "Design and Performance of Protective Water Barrier Pillars for Underground Coal Mines in India—A Review", The Institution of Engineers (India) Section D

Proceedings of International conferences

1. Rai, Piyush "Sustainability in Indian Surface Coal Mining Industry – A Techno-Environmental Overview", "International Conference on Sustainable Mining Options...Way Ahead", jun. 2-5, 2022, Nagpur (Invited Keynote Lecture)

2. Verma, A.K., Rai, Piyush and Sardana, Sahil, "Pit and Dump Slope Design of an Opencast Working Over Old Underground Working", International Conference on Opencast Mining Technology & Sustainability (ICOMS-2021) organized by the Northern Coalfields Limited, Singrauli in association with IIT (BHU) Varanasi. Dec.13-14, 2021, NCL, Singrauli.

3. Meena, Sonu Kumar., Sharma, Suresh Kumar., Rai, Rajesh and Rai, Piyush, "Improvement in blast fragmentation using dynamic computational approach", International Conference on Opencast Mining Technology & Sustainability (ICOMS-2021) organized by the Northern Coalfields Limited, Singrauli in association with IIT (BHU) Varanasi. Dec.13-14, 2021, NCL, Singrauli.

4. Arunava Ray, Rajesh Rai, Ashok Jaiswal, Deepak Dagdi and Ajit Kumar Jha (2021) Numerical Modelling of Shoring systems: Case study, ICGMTU2021

5. Ch Sai Karthik, Keloth Tejaswini, Arunava Ray, Dilip Kumar, Rajesh Rai, R. E. S. Chaitanya Kumar (2021) Software Development for Dump Slope Rating in Indian Coal Mining. International conference on opencast mining technology & sustainability Dec 2021.

6. M. A. Siddique, V.Sahu and A. Jamal, 2022. Environment Pollution and Management Approach in Singrauli Industrial Complex – The Case Study; International Conference on MOpencast Mining Technology & Sustainability 3, 85-88.

7. M.A. Siddique, A. Jamal and A. Kumar, 2022. Closure planning of a coal mine suffering with acid mine drainage-A case study; Inter. Conf. on Opencast Mining Technology & Sustainability 18,56-60

8. Modi, P., Jamal, A., Varshney, R., and Rahi, I.C. (2021) "Coal: A source of Rare earth elements other than thermal energy" in ICOMS-2021 of Northern Coalfields Limited (NCL), Singrauli, Madhya Pradesh, India.

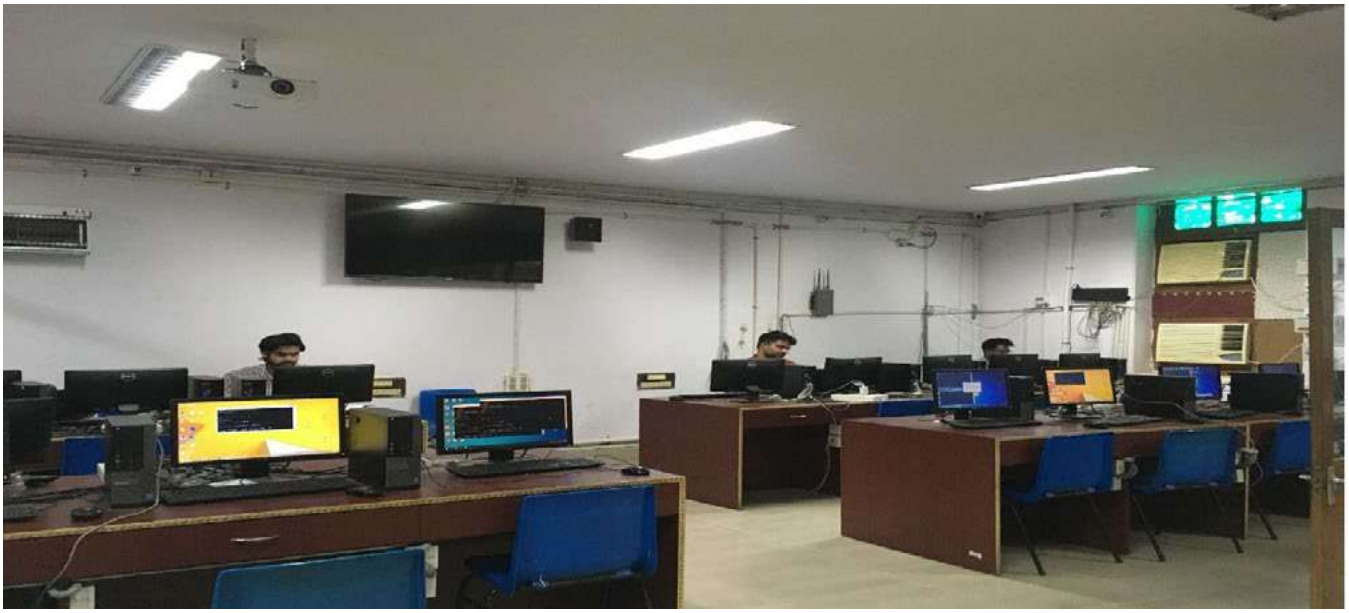
Proceedings of National conferences

1. Verma, A.K., Rai, Piyush and Sardana, Sahil (2021) "Design of Pit and Dump Slope in an Opencast Working Over Old Underground Working", 21st GEOMINETECH Annual Symp., New Equipment Technology Management and Safety in Mines and Mineral Based Industries, ENTMS, 23-24 Oct., 2021 Bhubaneswar.

2. Paurush, Punit and Rai, Piyush (2021) "Prediction of Peak Particle Velocity induced by Blasting in Surface Limestone Quarry Using the PCA and Multi-layer Perceptron Based ANN Techniques- A Case Study" 21st GEOMINETECH Annual Symp., New Equipment Technology Management and Safety in Mines and Mineral Based Industries, ENTMS, 23-24 Oct., 2021 Bhubaneswar.

3. Modi, P., and Jamal, A. (2022). "Coal Quality and Its Utilization" in The Indian Mining & Engineering Journal, AKS University, Satna, Madhya Pradesh, India

Key Instruments:



Computer Laboratory

Rock Mechanics laboratory (MTS and UTM)

16. Department of Pharmaceutical Engineering & Technology

Full Name of Department: Department of Pharmaceutical Engineering & Technology

Year of Establishment: 1932

Head of the Department: Prof. Siva (Mrs.) Hemalatha w.e.f. 27-02-2022

Brief introduction of the Department

Department of Pharmaceutical Engineering & Technology is a pioneer in Pharmaceutical education in India at University level and established in July 1932 by Prof. Mahadev Lal Schroff under the auspicious guidance of Mahamana Madan Mohan Malaviya Ji. Initially, a two-year programme was introduced in 1934 for the degree of B.Sc. (Pharmaceutical Chemistry). Later, the department has expanded academically by the inception of B.Pharm. (1937), M.Pharm. (1941), Ph.D. (1945) and integrated dual degree (2006) as its regular programmes. In the year 2014, the UG and IDD programmes were restructured and renamed as 4-year B Tech Programme in Pharmaceutical Engineering and Technology and 5-year IDD (B Tech & M Tech) programme in Pharmaceutical Engineering and Technology, respectively.

The Department has produced over 2150 B.Pharm., 1240 M.Pharm., 65 M.Pharm. (Integrated Dual Degree) and 142 Ph.D. students who enjoy leading positions in industry, academia, drug administration, research institutes and contemporary pharmacy practice worldwide. The Department has hosted many national and international events and to name a few are the 17th, 34th & 59th editions of Indian Pharmaceutical Congress in the year 1965, 1982 & 2007 in conjunction with Silver Jubilee, Golden Jubilee and Platinum Jubilee of the Department, respectively.

Major areas of Research

The department is actively engaged in the following broad areas of drug discovery research.

Drug discovery – Identification and optimization of new chemical agents from natural and synthetic origin for the treatment of diabetes, epilepsy, depression, pain, Alzheimer's disease, cancer, tuberculosis and other infectious and neurological diseases.

Drug formulation design and development – Design and development of new drug delivery systems with improved pharmacokinetic and pharmacodynamics profiles.

Area of the Department (in square meters):

The department is spread over an area of 5823 m^2. The department has 26 laboratories, 2 lecture halls and 6 classrooms.

Infrastructure

Sl. No.	Particulars	Number
1	No. of classrooms	06
2	No. of lecture halls	02
3	No. of laboratory	26
4	No. of computers available for students in the Department/School	40

Unique Achievement / Preposition of the Department:

The Department of Pharmaceutical Engineering & Technology is the pioneer department to start the degree level pharmacy education in the Country and in South-east Asia. This department is known for its enormous contribution to the growth and expansion of pharmaceutical education and research across the country. In pursuit of achieving its goal, the department has been continuously imparting quality education to produce pharmacists befitting to the requirements of industry and society. Recently the department introduced a research based undergraduate and integrated dual degree curriculum to impart innovative research skills and expertise among the students. Recent the department has proposed to start a new M Pharm programme; Quality Control in Pharmaceuticals and Medical Devices and is currently under review at the Institute level. The new M Pharm programme is aimed to provide the students in-depth knowledge of the quality methods for pharmaceutical substances and drug products prescribed in Indian Pharmacopoeia (IP) and enable them to gain extensive practical training on such products (including medical devices) in collaboration with Indian Pharmacopoeia Commission (IPC).

The department as National Resource Centre in Pharmacy discipline has been hosting *Advances in Drug Discovery and formulation development* course under the Annual Refresher Programme in Teaching (ARPIT 2019) programme of AICTE, New Delhi for the last two years. Over four thousand teachers of Pharmacy and Allied disciplines has been trained through this online outreach teaching programme

On the research front, the department has been actively engaged in the cutting edge research areas of drug discovery and development. The R & D expertise available in the department includes; (a) New drug target identification and validation; (b) Discovery of natural and synthetic lead compounds and their optimization; (c) Development of novel drug delivery systems including nano-formulations for synthetic and herbal drugs; (d) Authentication and standardization of herbal products; (e) Preclinical evaluation of drug candidates; (f) Analytical method development for drugs and drug formulations.

Apart from institute funded research projects, extramural research funding to the tune of about two crores has been generated during the last two years. Recently the department has been recognised as a DST FIST Sponsored Department to establish state of the art research facilities and has been granted an amount of Rs. 58.00 lakh. To date, nearly 1700 peer-reviewed research papers have been documented by the department. Approximately ~700 research communications have been registered with Scopus alone. During the last five years, the department has published over 350 peer-reviewed research papers. Besides this, a dozens of patents have been filed by the faculty members during the last five years. The high order research credits of faculty members viz., total citations ~26000, further corroborates the research strength of the department of Pharmaceutical Engineering & Technology.

Some of the key research accomplishments of the department in the area of drug discovery and development include; (a) discovered of some potential multifunctional anti-Alzheimer's and anticancer lead compounds, active at nanomolar to micromolar concentration, (b) enhancement of bioavailability and efficacy of drugs through nanoformulations and target-directed carrier systems, (c) identified newer cellular and molecular mechanisms involved in neuropathic pain,(d) developed a bioactive glass based formulation for the treatment of cerebral ischemia, and(e) created a well characterized natural product library of over hundred compounds from plants and microbial origin.

On an average the faculty members of the department publish around 60-70 peer-reviewed research papers annually. Over 25 patent applications have been filed by the faculty members so far.

Academic programmes offered Students on Roll

Sl. No.	Programme	I Year	II Year	III Year	IV Year	V Year & above
1.	B. Tech/B. Arch	71	68	38	31	---
2.	Dual Degree	19	14	12	15	25
3.	M. Tech/ M. Pharm	19	24	---	---	---
4.	Ph. D (Under Institute Fellowship)	08	04	14	15	13
5.	Ph. D (Under Project Fellowship)	00	05	02	00	00
6.	Ph. D (Under Sponsored Category)	00	04	01	03	00

Names of students/scholars who attended conferences/ workshops/seminars and symposia abroad or in India

Sl. No.	Name of student	Roll no.	Conference/Seminar/Symposia/Workshop	Date & venue	Financial assistance from
India					
1	Akhilesh	20161510	8th International Symposium on Current Trends in Drug Discovery Research, CDRI Lucknow	12-14 March 2022	---
2	Akhilesh	20161510	IBRO-APRC Associate Schoolon Neurobiology of Addiction, Chandigarh	23-28 August 2021	---
3	Akhilesh	20161510	National conference on "Recent Advancement in Pharmaceutical Sciences & Biotechnology Sector" Organized by Devasthali Vidhyapeeth College of Pharmacy, Rudrapur (Uttarakhand), India	11-13 Feb 2021	---
4	Shreya Khanna	20162032	Indo-Us Workshop on pain mechanism and therapeutics	6-10 May 2021	---
5	Shreya Khanna	20162032	IBRO-APRC School on Understanding of Neuroscience and Spectrum of Neurogenetic Disorders, Nepal	20-25 August 2021	---
6	Anagha Gadepalli	19161014	SPARC sponsored Indo US Workshop on Pain Mechanisms & Therapeutics,	06-10 May 2021, Dept. of Pharm. Engg. & Tech., IIT-BHU, (online mode)	---
7	Anagha Gadepalli	19161014	SPARC sponsored International Workshop on Neurobiology of Pain & Itch	29 June to 03 July, 2021, Dept. of Pharm. Engg. & Tech., IIT-BHU, (online mode)	---
8	Anagha Gadepalli	19161014	8th International Symposium "Current Trends in Drug Discovery Research" Age Associated Metabolic & CNS Disorders	12-14th March, 2022 CSIR-Central Drug Research Institute, Lucknow (online mode)	---
9	Vineeta Tiwari	18161515	Short term course on "Analytical and Molecular Strategies in Herbal Drug Research including Herbal Patenting"	22 to 29 July 2021 Department of Pharmacognosy, College of Pharmacy, MTPG & RIHS, Puducherry -605006, India	---
10	Vineeta Tiwari	18161515	5th IBRO/APRC Chandigarh Neuroscience school on "Neuropsychatric and neurodegenerative disorders"	23 to 27 Aug 2021 UIPS, Panjab University, Chandigarh- 160014, India	---
11	Vineeta Tiwari	18161515	"Emerging Trends in Herbal Medicine"	8-9 September 2021 Anand College of Pharmacy SGI, Agra-282007, India	---
12	Vineeta Tiwari	18161515	International Virtual Workshop 'Bioelectronic Medicine'	16-12-2021 IIT (BHU) Varanasi	---
13	Vineeta Tiwari	18161515	Indo-USA SPARC workshop "International Workshop on Neurobiology of Pain & Itch"	29-06-2021 to 03-07-2021 IIT (BHU) Varanasi	---
14	Rangan Mitra	19161013	SPARC Sponsored Indo-US Workshop on Pain Mechanisms & Therapeutics	06-05-2021 to 10-05-2021, Online (Dept. of Pharm. Engg. & Tech., IIT-BHU)	---
15	Rangan Mitra	19161013	ACS Science Talks Technologies for probing brain chemistry a cell at a time	04-06-2021, Online (ACS India)	---

Sl. No.	Name of student	Roll no.	Conference/Seminar/Symposia/Workshop	Date & venue	Financial assistance from
16	Rangan Mitra	19161013	SPARC Sponsored International Workshop on Neurobiology of Pain & Itch	29-06-2021 to 03-07-2021, Online (Dept. of Pharm. Engg. & Tech., IIT-BHU)	---
17	Rangan Mitra	19161013	International Conference on Emerging Trends in Drug Discovery and Development (ICETD3-2022)	20-01-2022 to 21-01-2022, Online (Dept. of Pharm. Sci. & Tech., BIT, Mesra)	---
18	Rangan Mitra	19161013	Emerging Trends in Synthesis of Chemical Scaffolds (ETSCS 2022)	27-01-2022 to 31-01-2022, Online (SVNIT, Surat)	---
19	Rangan Mitra	19161013	ACS Science Talks First-principle Computational Chemistry: From molecules to materials	25-02-2022, Online (ACS India)	---
20	Sandeep Kumar	18161511	SPARC Sponsored International Workshop on Neurobiology of Pain & Itch	29-06-2021 to 03-07-2021, Online (Dept. of Pharm. Engg. & Tech., IIT-BHU)	---
21	Sandeep Kumar	18161511	Virtual Session on "How to Achieve Effective Distillation?"	08-07-2021, Online (Buchi, India)	---
22	Sandeep Kumar	18161511	How to Publish Scholarly Books with Taylor and Francis	21-07-2021, Online (Taylor & Francis)	---
23	Sandeep Kumar	18161511	How to Publish in Academic Journals and Succeed with your Publication?	21-07-2021, Online (Taylor & Francis)	---
24	Sandeep Kumar	18161511	International Conference on Emerging Trends in Drug Discovery and Development (ICETD3-2022)	20-01-2022 to 21-01-2022, Online (Dept. of Pharm. Sci. & Tech., BIT, Mesra)	---
25	Sandeep Kumar	18161511	Emerging Trends in Synthesis of Chemical Scaffolds (ETSCS 2022)	27-01-2022 to 31-01-2022, Online (SVNIT, Surat)	---
26	Sandeep Kumar	18161511	ACS Science Talks First-principle Computational Chemistry: From molecules to materials	25-02-2022, Online (ACS India)	---
27	Allani Meghana	21161007	International Virtual Workshop 'Bioelectronic Medicine',	16-12-2021 Jointly organized by IIT (BHU) Varanasi & IISc Bangalore & co-hosted by The Henry Royce Institute, The University of Manchester, UK.	---
28	Allani Meghana	21161007	IBRO APRC Short Term Course on Depression, Anxiety, Mental Stress, and Its Remedies in Light of Covid 19.	14-12-2021 to 16-12-2021 & Department of Biomedical Engineering, School of Technology, North Eastern Hill University Shillong, INDIA (Online mode)	---
29	Allani Meghana	21161007	Webinar on "Neurobiology of Pain and the Role of Animal Models in the Discovery of Novel Analgesics"	30-09-2021 School of Pharmaceutical Sciences, Jaipur National University, Jaipur, India. (Online mode)	---
30	Obulapathi Ummadisetty	21161009	International Workshop sponsored by SPARC granted by MHRD on "Neurobiology of Pain and Therapeutics"	29-07-2022 to 10-07-2022 & Indian Institute of Technology (BHU), Varanasi, India (Online mode)	---
31	Obulapathi Ummadisetty	21161009	Indo-US Workshop sponsored by SPARC granted by MHRD on "Pain Mechanism and Therapeutics"	06-05-2022 to 10-05-2022 & Indian Institute of Technology (BHU), Varanasi, India (Online mode)	---

Sl. No.	Name of student	Roll no.	Conference/Seminar/Symposia/Workshop	Date & venue	Financial assistance from
32	Obulapathi Ummadisetty	21161009	Pain360 Webinar – Measuring Pain Outcomes – A 360 View	04-03-2022 (Online Mode)	---
33	Obulapathi Ummadisetty	21161009	Neurobiology of Pain and the Role of Animal Models in the Discovery of Novel Analgesics	10-03-2022 & Swami Keshvanad, Institute of Pharmacy, Bikaner, India (Online mode)	---
Abroad					
1	Ankit Kumar Malik	21161012	Visit to Foreign Counterpart of the Project to London, United Kingdom	09-22 March 2022	Sponsored by DBT
2	Akhilesh	20161510	Virtual IBRO-APRC School on Understanding of Neuroscience and Spectrum of Neurogenetic Disorders, Nepal.	20-25 August 2021	---
3	Akhilesh	20161510	Virtual 3rd ISCRE and IBRO-ARC Neuroscience and Research Ethics Policy Workshop" which is held on IBN ZOHR University, Poly-disciplinary Faculty of Taroudant, Morocco.	12-14 November 2021	---
4	Anagha Gadepalli	19161014	IBRO-APRC School on Understanding Neuroscience and the Spectrum of Neurogenetic Disorder	20-25 August 2021, Kathmandu, Nepal (Online mode)	---
5	Rangan Mitra	19161013	7th EFMC-YSN MedChemBioOnline	25-05-2021, Online (EFMC-YSN, Belgium)	---
6	Rangan Mitra	19161013	1st Edelris Symposium on Affinity Selection-Mass Spectrometry in Drug Discovery	02-06-2021 to 03-06-2021, Online (Edelris, Belgium)	---
7	Rangan Mitra	19161013	Data Management Tools for Researchers	13-07-2021, Online (Wiley APAC, Singapore)	---
8	Rangan Mitra	19161013	RSC-IISER Desktop Seminar with ChemComm	05-08-2021, Online RSC, GB	---

Names of students/scholars who got prizes and awards outside the Institute

Sl. No.	Name of student	Roll no.	Name of prize	Date & venue	Prize awarded by
1	Anagha Gadepalli	19161014	Best presentation award	20-25 August 2021, Kathmandu, Nepal (Online mode)	IBRO-APRC School on Understanding Neuroscience and the Spectrum of Neurogenetic Disorder
2	Rangan Mitra	19161013	First Position in the poster presentation (ICETD3-2022)	20-01-2022 to 21-01-2022, Online (Dept. of Pharm. Sci. & Tech., BIT, Mesra)	Birla Institute of Technology, Mesra

Names of scholars/students who won convocation/Institute day prizes

Sl. No.	Name of Student	Roll No.	Name of prize	Prize awarded by
1	Mohana Das	19162001	IIT BHU gold medal	IIT BHU

Names of Students/Scholars who went for foreign Internship

Sl. No.	Name of student	Roll No.	Name of the organization	Place of internship	Country	Duration
1	Abhimanyu Mandal	19165001	NyBerMan Bioinformatics	Remote	France	3 months (01-01-2022 to 31-01-2022)
2	Sagorika Nag	19164012	Blue Marble Space, Institute of Science (BMSIS)	Remote (Das Sarma Lab, University of Maryland, Baltimore) (Position: Research Associate)	United States	3 Months (1st June – 31st August'21)
3	Sagorika Nag	19164012	NyBerMan Bioinformatics	Remote	France	3 Months (1st January-31st March'22)
4	Sagorika Nag	19164012	Blue Marble Space, Institute of Science (BMSIS)	Remote (Das Sarma Lab, University of Maryland, Baltimore) (Position: Visiting Scholar)	United States	1 Year (October'21-ongoing)
5	Prabha Rajput	17161007	IIT-BHU	Purdue University	USA	01.03.2021-02.09.2022
6	Bhagwati Bhardwaj	19161011	IIT-BHU	Purdue University	USA	01.03.2021-02.09.2022

Faculty & their activities Faculty and their areas of specialisation

Sl. No.	Name, Qualifications, Employee No.	Date of award of PhD Degree	Major Areas of Specialization (Max. 3 Areas)
PROFESSORS			
1	Brahmeshwar Mishra (M.Pharm., Ph.D.)	10.08.1988	Pharmaceutics –Rate Controlled Novel Drug Delivery Systems, Nanotechnology based drug formulations Pharmacokinetics and Pharmacodynamics
2	Sushil Kumar Singh (M.Pharm., Ph.D.)	21.02.1989	Pharmaceutical Chemistry –Chemistry of Natural Drug Products, Synthetic Analogues and Evaluation of their Biological Activity
3	Sanjay Singh (M.Pharm., Ph.D.)-on deputation	03.04.1993	Pharmacology – Nanomedicine, PK/PD Modeling, Stress and Diabetic Pharmacology
4	Sushant Kumar Shrivastava (M.Pharm., Ph.D.)	19.06.2000	Pharmaceutical Chemistry – Rational Drug Design and Molecular Modeling
5	S. Hemalatha (M.Pharm., Ph.D.)	29.07.2005	Pharmacognosy – Pharmacognostical and Pharmacological Evaluation of Indian Medicinal Plants
6	Sairam K (M.Pharm., Ph.D.)	05.04.2003	Pharmacology – Neuropharmacology, Mitochondrial Medicine, New Drug Discovery, Organelle Targeted Drug Development
ASSOCIATE PROFESSORS			
1	Senthil Raja A (M.Pharm., Ph.D.)	18.07.2009	Pharmaceutical Chemistry – Synthetic Medicinal Chemistry, Computational Chemistry, Lead identification and Optimization
2	Alakh Niranjan Sahu (M.Pharm., Ph.D.)	08.12.2014	Pharmacognosy –Quality control studies and standardization of medicinal plants and herbal formulations
3	Ruchi Chawla (M.Pharm., Ph.D)	17.10.2016	Pharmaceutics – Nano-drug Delivery System and Pharmacokinetics
4	M.S. Muthu (MS., Ph.D.)	02.01.2010	Pharmaceutics –Cancer Nanotechnology, Theranostics, Anti-psychotic nanomedicine
ASSISTANT PROFESSORS			
1	Sunil Kumar Mishra (M.Pharm., Ph.D.)	02.11.2013	Pharmacognosy – Medicinal & Aromatic Plants (MAP) Research, MAP Tissue Culture, Natural Drugs

Sl. No.	Name, Qualifications, Employee No.	Date of award of PhD Degree	Major Areas of Specialization (Max. 3 Areas)
2	Prasanta Kumar Nayak (M.Pharm., Ph.D.)	25.05.2013	Pharmacology –Brain injury; Memory impairment; Breast cancer; Gallbladder cancer
3	Gyan Prakash Modi (M.Pharm., Ph.D.)	14.12.2013	Pharmaceutical Chemistry – Design, Development of Novel Drugs to Treat Infections and CNS Disorders
4	Shreyans Kumar Jain (MS, Ph.D.)	15.09.2015	Medicinal Chemistry of Natural Products
5	Vinod Tiwari (M.Pharm.,, Ph.D.)	19.06.2012	Pharmacology: Cellular molecular mechanisms driving Neuropathic Pain, Role of reward circuitry in Chronic Pain, Targeting Kinesins for the treatment of neuropathic pain
6	Ashish Kumar Agrawal (M.Pharm, Ph.D.)	15.06.2015	Pharmaceutical Nanotechnology and drug delivery
7	Rajnish (MPharm, Ph.D)	07.03.2014	Pharmaceutical and Medicinal Chemistry
8	Deepak Kumar (M.Pharm., Ph.D.) Ramalinga Swami Fellow	09.11.2016	Medicinal Chemistry, natural product chemistry, bioluminescent chemistry
9	Dinesh Kumar (M.Pharm., Ph.D.)	03.02.2017	Crystal engineering of APIs, Solid state pharmaceutical research, Understanding of pharmaceutical APIs, formulations and their processing
10	Jairam Meena (M.Pharm., Ph.D.)	31.10.2016	Pharmacology-Vaccine Immunology, Immunotherapy, Drug Delivery
SENIOR RESEARCH OFFICER			
1	Ashok Kumar (M.Sc., Ph.D.)	1993	Pharmaceutical Chemistry – Synthesis and Characterization of Novel Compounds
DST INSPIRE/Ramalinga Swami Faculty			
1.	Arun Khattri, Ph.D.	2010	Cancer Biology, bioinformatics and human genetics

Technical and Non-Teaching Staff

Sl. No.	Name, Qualifications	Designation & Employee No.	Date of Appointment in the department
Office Staff			
1	Sh. Atul Kumar Gupta, B.Tech. (Electrical)	Junior Assistant, 50109	21.05.2017
2	Sh. Yashwant Singh, M.A.	Skilled Clerical Staff	27.04.2015
3	Sh. Anand Kumar, B.A.	Caretaker cum Clerk	06.12.2016
4	Sh. Surya Pratap Singh, Intermediate	Multitasking Staff	01.05.2019
Library Staff			
1	Sh. Naveen Kumar, Diploma in Mechanical Engg	Technical Assistant	2021
Laboratory Staff			
1	Smt. Archana Singh, M.Sc	Technical Superintendent, 18747	15.12.2008
2	Sh. Madan Lal, M.A.	Technical Superintendent, 14185	12.08.1995
3	Sh. Virendra Kumar, I Sc.	Technical Superintendent, 14187	15.10.1998
4	Sh. Sunil Kumar Singh, Diploma in Electrical Engg	Senior Technician, 19269	20.12.2013
5	Sh. Akhila Nand Upadhyay, B. Sc., D. Pharm.	Senior Technician, 18628	07.08.2008
6	Sh. Arun Kumar, Intermediate	Senior Technician, 18624	02.07.1996
7	Sh. Mohd. Jameel, Intermediate	Senior Technician, 18633	02.07.1996
8	Sh. Amit Kumar, Intermediate	Senior Technician, 17371	03.12.2015

Short-term courses/workshops/seminars/symposia/conferences organised by faculty members

Sl. No.	Coordinator	Title	Period
1.	Senthil Raja A	International Conference on Emerging Trends in Drug Discovery and Development (ICETD3-2022) (Dept. of Pharm. Sci. & Tech., BIT, Mesra)	20-01-2022
2.	Senthil Raja A	Indo-US workshop on pain mechanisms & therapeutics, (Pharmaceutical Engg. & Tech., IIT BHU, Varanasi)	06-05-2021 to 10-05-2021
3.	Senthil Raja A	World Sustainable Development Summit, The Energy & Resources Institute (TERI), New Delhi,	16-02-2022 to 18-02-2022
4.	Vinod Tiwari	Pre-clinical Models in Drug Discovery & Development	30-03-2021 to 03-04-2021
5.	Vinod Tiwari	Pain Mechanisms and Therapeutics	06-04-2021 to 10-04-2021
6.	Vinod Tiwari	Neurobiology of Pain & Itch	29-06-2021 to 03-07-2021

Short-term courses/workshops/seminars/symposia/conferences/training programmes attended by faculty members in academic institutions and public sector undertakings

Sl. No.	Name of faculty member	Title	Period and venue
Seminars/Symposia/Conferences			
1.	Alakh N Sahu	Role of Pharmacopoeia in Ensuring Availability of Quality Medicines	25-02-2022
2.	Alakh N Sahu	Bioelectronic Medicine'	16-12-2021
3.	Ruchi Chawla	International Conference on Nano-architectures for Chemical, Biological and Therapeutic Applications (NCBTA-2021)	November 12-14, 2021, GLA University, India
4.	Vinod Tiwari	Current trends in drug discovery research " Ageing Associated Metabolic & CNS Disorders"	12-03-2022 to 14-03-2022 and CSIR-CDRI, Lucknow, U.P, India
5.	Vinod Tiwari	International conferences on modern approaches of research in basic and applied sciences	04-12-2021 and Haridwar, Uttarakhand, India
6.	Vinod Tiwari	15th International conference on Neuroscience and Dementia	26-11-2021, Welling, England
7.	Dinesh Kumar	Strengthening a sustainable API supply chain performance	23-03-2021, Dr Reddy's Lab.
8.	Dinesh Kumar	Industrial Applications of Powder Rheology	Freeman Technology, UK 06-Apr-2021
9.	Prasanta Kumar Nayak	Ensuring Mental Health - Most Important Need of the Hour	March 01 – March 13, 2022, Global Institute for Human Cognizance Advancement, Manav Chetna Vikash Kendra, Indore, Madhya Pradesh

Special lectures delivered by faculty members in other institutions

Sl. No.	Name of faculty member	Topic of lecture	Institution	Date
1	M.S. Muthu	Current Strategies in Targeted Drug Delivery	Shri Vishnu College of Pharmacy, Kovvada, Andhra Pradesh	22-02-2022
2	Alakh N Sahu	Quality control crude drugs	Nirma University, Ahmedabad	22-02-2022
3	Alakh N Sahu	Organizing Self	Girijananda Chowdhury Institute of Pharmaceutical Science, Guwahati, Assam	09-12-2021

Sl. No.	Name of faculty member	Topic of lecture	Institution	Date
4	Alakh N Sahu	Pharmacy: Always Trusted for Your Health		25-09-2021
5	Ashish Kumar Agrawal	Nanomedicine: A Nanoway to Treat Ailments	Faculty of Pharmacy, VNS Group of Institutions, Bhopal	11-12-2021
6	Deepak Kumar	Bioimaging: A useful tool to monitor biological events in cell	IFTM University, Moradabad, Uttar Pradesh	22-11-2021
7	Deepak Kumar	Bioluminescence based monitoring of tumor progression and treatment by apoptotic pathway	DBT Ramalingaswami Conclave 2021-2022	28-02-2022
8	Rajnish	Best Practices in Computational Chemistry Research	Faculty of Pharmacy, IFTM University, Moradabad (UP).	25-11-2021
9	Rajnish	Emerging Computational Tools in Drug Discovery	RKVY-RAFTAAR Agri Business Incubator IIT(BHU), Varanasi	06-10-2021
10	Ruchi Chawla	Introduction to dosage forms	Department of Prasuti Tantra Faculty of Ayurveda I.M.S., B.H.U.VARANASI	31-07- 2021 07-08-2021
11	Sairam Krishnamurthy	Disease modifying approach to treat Parkinson's disease	"Emerging Challenges and Advances in Neurosciences" (ECAN-2021). Amity University, Lucknow.	21-22 October 2021
12	Sushant Kumar Shrivastava	Innovation in chemical, Biological, and pharmaceutical sciences	GLA University, Mathura	27-11-2021
13	Vinod Tiwari	Natural Products in Neurodegenerative Diseases: Implications & Challenges	Department of Pharmaceutical Sciences, Gurukula Kangri University, Haridwar	08-04-2021
14	Vinod Tiwari	Peripheral opioid analgesia: Interaction between neuropathic pain relief & reward circuitry	Department of Pharmaceutical Engineering & Technology, IIT (BHU), Varanasi	09-05-2021
15	Vinod Tiwari	Stereotaxic surgery and optogenetics: Applications in Neuroscience Research	Faculty of Pharmacy, DIT, Dehradun	17-06-2021
16	Vinod Tiwari	Role of mu-delta opioid heteromers in Neuropathic Pain	Department of Pharmaceutical Engineering & Technology, IIT (BHU), Varanasi	01-07-2021
17	Vinod Tiwari	Mu-delta Opioid heterodimer: A potential target for the treatment of neuropathic pain	Department of Molecular Medicine and Biotechnology, Sanjay Gandhi Postgraduate Institute of Medical Sciences (SGPGIMS), Lucknow	07-08-2021
18	Dinesh kumar	Exciting Career Paths	Manipal University, Jaipur	05-Jul-2021
19	Dinesh kumar	AI-ML in Pharmaceutical Research	NIPER, Mohali	07-Oct-2021

Honours and awards

Sl. No.	Name of faculty member	Details of award
1	Shreyans Kumar Jain	Dr PC Vyas Memorial Award at Rajasthan Science Congress 8
2	Vinod Tiwari	Award of excellence for outstanding performance in Teaching and Research on the occasion of "International conferences on modern approaches of research in basic and applied sciences" (MARBAS-2021)
3	Vinod Tiwari	Appointed as Trainee Regional Liaison, NeuPSIG Trainee Subcommittee, International Association for the Study of Pain, USA

Sl. No.	Name of faculty member	Details of award
4	Vinod Tiwari	"IBRO FACULTY Invitation" during International Brain Research Organization (IBRO) School (IBRO-APRC Nepal Associate School on Neurophysiology of Pain: Mechanism to Medicine)

Fellowships of academic and professional societies

Sl. No.	Name of faculty member	Details of fellowship
1	Deepak	Ramalingaswami Fellowship 2019-24
2	Ruchi Chawla	Member, British Society for Nanomedicine, UK

Books, monographs authored/co-authored

Sl. No.	Name of author/co-author	Title	Publisher
1	Bharti, K., & Mishra, B.	pH-Responsive Biomaterials in Drug Delivery. In *Functional Biomaterials*	Springer, Singapore.
2	Kumar, M., Jha, A., & Mishra, B.	Marine Biopolymers for Transdermal Drug Delivery. In *Marine Biomaterials*	Springer, Singapore.
3	Jha, A., Kumar, M., & Mishra, B.	Marine Biopolymer-Based Anticancer Drug Delivery Systems. In *Marine Biomaterials*	Springer, Singapore.
4	Jha, A., Kumar, M., Bharti, K., & Mishra, B.	Glycerosomes: a new tool for effective drug delivery. *In Systems of Nanovesicular Drug Delivery*	Elsevier
5	Bharti, K., Kumar, M., Jha, A., & Mishra, B.	Nanobubbles to aid drug delivery. *In Systems of Nanovesicular Drug Delivery*	Elsevier
6	Kumar, M., Jha, A., Bharti, K., & Mishra, B.	Nanovesicles for hepatic-targeting drug delivery. In *Applications of Nanovesicular Drug Delivery*	Elsevier
7	Ruchi Chawla, Varsha Rani, Mohini Mishra	Nanoparticulate Carriers: Versatile Delivery systems In Nanopharmaceutical Advanced Delivery Systems	John Wiley
8	Ruchi Chawla, Varsha Rani, Mohini Mishra and Krishan Kumar	Integrated Role of Nanotechnology and Pharmacogenetics in Diagnosis and Treatment of Diseases in Pharmacogenetics,	IntechOpen
9	Ruchi Chawla, Varsha Rani, Mohini Mishra and Krishan Kumar	Computer Simulations in Pharmacokinetics and Pharmacodynamics In Computer Aided Pharmaceutics and Drug Delivery,	Springer
10	Sushant Kumar Shrivastava	Application of machine learning and molecular modelling in drug discovery and cheminformatics	Taylor & Francis

Editorial boards of journals

Sl. No.	Name of faculty member	Position (editor/ member)	Name of journal
1	Dr. M. S. Muthu	Editor in chief	Research & Reviews: Journal of Pharmacology and Toxicological Studies
2	Dr. M. S. Muthu	Editorial board member	Diagnostics and Therapeutics
3	Dr. Ashish Kumar Agrawal	Academic Editor	Frontiers in Pharmacology
4	Ruchi Chawla	Editorial Board Member	International Conference on Psychiatry and Mental Health
5	Dr. Vinod Tiwari	Editor	Advances in Pharmaceutical Sciences
6	Dr. Vinod Tiwari	Associate Editor	Translational Physiology, All Life
7	Dr. Vinod Tiwari	Editor	BMC Neuroscience

Sl. No.	Name of faculty member	Position (editor/ member)	Name of journal
8	Dr. Vinod Tiwari	Associate Editor	Clinical Diabetes, Frontiers in Endocrinology
9	Dr. Vinod Tiwari	Associate Editor	Motivation and Reward, Frontiers in Behavioral Neuroscience
10	Dr. Vinod Tiwari	Section Editor	Recent Advances in Inflammation & Allergy Drug Discovery: Bentham Science
11	Dr. Vinod Tiwari	Section Editor	Science Progress
12	Dr. Vinod Tiwari	Section Editor	Neuroscience Insights, SAGE Journals
13	Dr. Dinesh Kumar	Review Editor	Frontiers in Drug Delivery
14	Dr. Dinesh Kumar	Editor	Journal of Research in Pharmacy
15	Prasanta Kumar Nayak	Editorial Board Member	Journal Of Research Innovation And Management Science (http://www.jrim.net/editorial-board)
16	Prasanta Kumar Nayak	Managing Editor	The Pharmstudent (https://www.thepharmstudent.com/editorial_board .html)

Design and Development Activities New facilities added

Sl. No.	Details (Infrastructure, equipment, etc.)	Value (in lakhs of rupees)
1	HPLC system with Autosampler, LC-20 AR- Shimadzu	36.00
2	Cary 60 UV-Vis Spectrophotometer - Agilent	4.50
3	Fluorescent spectrophotometer	4.96
4	CO2 Incubator	8.00
5	Laminar Air Flow	3.00
6	Centrifuge	5.00
7	Contact angle measurement system	3.65
8	Multimode Micro Plate Reader	27.00

Patents granted/filed

Sl. No.	Name of faculty member	Title of patent
1	Prof. Sushant Kumar Shrivastava	Granted- Compositions and methods for treating cancer. Patent No. US 11,286,241 B2
2	Prof. Sushant Kumar Shrivastava	Granted- Compositions and methods for reducing cell viability, Patent No. 11208389
3	Dr. Vinod Tiwari	Filed- Development of Transient Receptor Potential Ankyrin-1 (TRPA1) Nociceptor based siRNA Nano-Therapeutics for the Treatment of Chemotherapy-induced Neuropathic Pain

Research and Consultancy Sponsored research projects (Ongoing only)

Sl. No.	Title	Period	Funding agency	Amount (in lakhs of Rs.)	Project P.I
1	Self-assembled smart nano medicine for targeted therapy of advanced non-small cell lung cancer	36 Months	ICMR	21.27 Lakhs	M.S. Muthu
2	Defining the AMR burden of antimicrobial manufacturing waste in Puducherry and Chennai	36 Months	DBT	106.50 Lakhs	M.S. Muthu
3	Exploring Anti-infective Potential of Panchagavya: Metabolomics and Proteomics Approaches	2022	2024	65.43 Lakhs	Shreyans Kumar Jain

Sl. No.	Title	Period	Funding agency	Amount (in lakhs of Rs.)	Project P.I
4	Bioluminescence based monitoring of tumor progression and treatment by apoptotic pathway	2019-24	DBT	42.50 Lakhs	Deepak Kumar
5	Discovery of novel selective inhibitors of choline acetyltransferase: lead optimization and in vivo pharmacokinetic studies	Jan, 2022-Dec, 2023 (Ongoing)	SERB-SRG, India	32.86 Lakhs	Rajnish Kumar
6	Development of a toolkit for prediction of blood-brain-barrier permeability using deep learning to expedite CNS drug discovery	Jan, 2022-Dec, 2024 (Ongoing)	SERB-MATRICS, India	6.60 Lakhs	Rajnish Kumar
7	Development of Novel Therapeutics for the Redemption from Burn and Frostbite Burn Injury Induced Pain in Military Veterans	Jan, 2021 – Dec, 2023 (Ongoing)	SERB, India	40.81 Lakhs	Co-Investigator: Rajnish Kumar, PI: Vinod Tiwari
8	Pharmacological evaluation of anti-diabetic effects of some natural drugs sponsored by Industry.	2019-2022	Natreon Inc	28.87 Lakhs	Sairam Krishnamurthy
9	Pharmacology of Natural Drugs in Obesity and Eating Disorders" sponsored by Industry.	2018-20222	Natreon Inc	26.54 Lakhs	Sairam Krishnamurthy
10	Synthesis and evaluation of diverse n-functionalized hybrids as muti-target directed ligands for neuroprotective and neurorestorative therapies	2019-2022	MoE, STARS	75.30 Lakhs	Senthil Raja A (PI)
11	Design and Development of Molecular hybrids in a multifunctional framework for regulating cholinesterases, -secretase 1, Amyloid and oxidative stress against Alzheimer's disease	Dec 2021-Dec. 2024	ICMR	28.87 Lakhs	Sushant Kumar Shrivastava
12	Design and Development of potential multifunctional molecular hybrids for the treatment of Alzheimer's disease	Jan. 2022 Jan. 2025	SERB	28.28 Lakhs	Sushant Kumar Shrivastava
13	Development of Novel Therapeutics for the Redemption from Frostbite and Burn Injury-induced Chronic Pain in Military Veterans	30-12-2020 to 30-12-2023	Science & Engineering Research Board (SERB): Core Research Grant (CRG)	40.81 Lakhs	Vinod Tiwari
14	Development of Transient Receptor Potential Ankyrin-1 (TRPA1) Nociceptor based siRNA Nano-Therapeutics for the Treatment of Chemotherapy-induced Neuropathic Pain	04-03-2020 to 05-03-2023	Indian Council Of Medical Research-Senior Research Fellowship (ICMR-SRF)	15.21 Lakhs	Vinod Tiwari
15	Development of Multifunctional Dendrimer Stabilized Green Nano- Therapeutics for the Treatment of Drugs and Alcohol Addiction	01-03-2019 to 31-04-2022	Indian Council of Medical Research-Senior Research Fellowship	13.20 lakhs	Vinod Tiwari
16	Crystal Engineering of Dapagliflozin to improve its ph7armaceutical properties	19-12-2021 to 18-12-2023	SERB-DST Start-up research grant, India	31.40 Lakhs	Dinesh Kumar
17	Safety and Efficacy of PL05	2022-23	Purobien Lifesciences	19.00 Lakhs	S. K. Mishra

Faculty members' participation with other universities under MoUs (Ongoing only)

MoU with Prof. Ravi Kumar Asthana Lab. Department of Botany, Institute of Science, Banaras Hindu University, Varanasi.

PI- Prof. Sushant Kumar Shrivastava

Title: - Anti-bacterial, Anti-fungal, and Anti-viral biomolecules development.

Research publications

Total number of papers published in refereed National journals	5
Total number of papers published in refereed International journals	89
Total number of papers presented in National conferences	2
Total number of papers presented in International conferences	5

Refereed International journals

1. Mehata A. K., Viswanadh M. K., Priya V., Vikas and Muthu M.S. (2021) Harnessing immunological targets for COVID-19 immunotherapy. Future Virol. 16(9): 619-640.

2. Vikas, Viswanadh MK, Mehata AK, Sharma V, Priya V, Varshney N, Mahto SK and Muthu M.S. (2021) Bioadhesive chitosan nanoparticles: Dual targeting and pharmacokinetic aspects for advanced lung cancer treatment. Carbohydrate Polymers. 15 (9): 274-118617.

3. Viswanadh M.K., Agrawal N., Azad S., Jha A., Poddar S., Mahto SK and Muthu M.S. (2021) Novel redox-sensitive thiolated TPGS based nanoparticles for EGFR targeted lung cancer therapy. Int. J. Pharm. 1 (6): 602- 120652.

4. Priya V., Viswanadh M.K., Mehata AK, Jain D., Singh S.K., and Muthu M.S. (2021). Targeted nanotherapeutics in the prophylaxis and treatment of thrombosis. Nanomedicine.16(13):1153-76.

5. Singh M., Rana N.K., Muthu M.S., Jha A., Baul T.S.B. and Koch B. (2022). Enhanced in vitro therapeutic efficacy of triphenyltin (IV) loaded vitamin E TPGS against breast cancer therapy. Materials Today Communications. 31 (1): 103256.

6. Bhardwaj, N., Goel, B., Tripathi, N., Sahu, B., and Jain, S. K. (2021) A Comprehensive Review on Chemistry and Pharmacology of Marine Bioactives as Antimetastatic Agents. European Journal of Medicinal Chemistry Reports. 100023

7. Bhardwaj, N., Singh, A. K., Tripathi, N., Goel, B., Indra, A., and Jain, S. K. (2021) Ni–NiO heterojunctions: A versatile nanocatalyst for regioselective halogenation and oxidative esterification of aromatics. New Journal of Chemistry 45. 14177-14183

8. Bhardwaj, N., Tripathi, N., Goel, B., and Jain, S. K. (2021) Anticancer activity of diosgenin and its semi-synthetic derivatives: Role in autophagy mediated cell death and induction of apoptosis. Mini Reviews in Medicinal Chemistry. 21, 1646-1665

9. Goel, B., Bhardwaj, N., Tripathi, N., and Jain, S. K. (2021) Drug discovery of small molecules for the treatment of COVID-19: a review on clinical studies. Mini reviews in medicinal chemistry 21. 1431-1456

10. Goel, B., Chatterjee, E., Dey, B., Tripathi, N., Bhardwaj, N., Khattri, A., Guru, S. K., and Jain, S. K. (2021) Identification and evaluation of apoptosis-inducing activity of ipomone from Ipomoea nil: a novel, unusual bicyclo-[3.2. 1] octanone containing gibberic acid diterpenoid. ACS omega. 6: 8253-8260

11. Goel, B., Tripathi, N., Bhardwaj, N., Sahu, B., and Jain, S. K. (2021) Therapeutic Potential of Genus Pongamia and Derris: Phytochemical and Bioactivity. Mini Reviews in Medicinal Chemistry. 21: 920-951

12. Goel, B., Tripathi, N., Mukherjee, D., and Jain, S. K. (2021) Glycorandomization: A promising diversification strategy for the drug development. European Journal of Medicinal Chemistry. 113156

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Refereed National journal

1. Nalli, Y.K., Guru S.K., P. Jain V., and Jain S. K. (2022) "Bioassay-Guided Fractionation and Dereplication Studies of Sesame oil: Isolation of 8-Acetoxypinoresinol as an Anti-Proliferative Metabolite and Prediction of Target." Proceedings of the National Academy of Sciences, India Section **B:** Biological Sciences. https://doi.org/10.1007/s40011-021-01308-0

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Proceedings of International conferences

1. Ankit uniyal, Akhilesh, Piyanka Pandey, Anagha Gadepalli, Ajay Modi, Vinod Tiwari, 2022. Investigating Kinesin Mediated Regulation of Nociceptors as a Novel Therapeutic Target for Chronic pain, 8th Conference Symposium on Current Trends in Drug Discovery Research (CTDDR-2022), CSIR-CDRI, Lucknow, India, March 2022

2. Akhilesh, Ankit Uniyal, Vinod Tiwari, 2022. Cocktail Chemotherapy-induced Neuropathic Pain: A Novel and Clinically Mimickable Model of Chemotherapy-induced Peripheral Neuropathy. 8th International Symposium on Current Trends in Drug Discovery Research, CDRI-Lucknow, March, 2022.

3. Akhilesh, Ankit Uniyal, Vinod Tiwari, 2021. Protective role of epigallocatechin-3-gallate in chronic alcohol-induced cognitive dysfunction and neuronal apoptosis in rats. (IBRO-APRC School on Understanding of Neuroscience and Spectrum of Neurogenetic Disorders, Nepal, August 2021.

4. Akhilesh, Vinod Tiwari, 2021. TRPV1 based siRNA Therapeutics: A Potential Approach for the Treatment of Chemotherapy-induced Peripheral Neuropathy. 3rd ISCRE and IBRO-ARC Neuroscience and Research Ethics Policy Workshop" which is held at IBN ZOHR University, Polydisciplinary Faculty of Taroudant, Morocco, November 2021.

5. Akhilesh, Vinod Tiwari, 2021. TRPA1 based siRNA Therapeutics: A Potential Approach for the Treatment of Chemotherapy-induced Peripheral Neuropathy. IBRO-APRC Associate School on Neurobiology of Addiction, Chandigarh, August, 2021.

Proceedings of National conferences

1. Mitra R, Dipika, Ayyannan S.R. (2022) Synthesis and Evaluation of 5-Substituted-2-amino-1,3,4-thiadiazole Derivatives as Anticancer Agents", International Conference on "Emerging Trends in Drug Discovery and Development" (ICETD3) at Ranchi (18-20 January 2022) organized by BIT, Ranchi.

2. Kumar S, Jagannadhula H, Ayyannan S.R. (2022) "Design, Synthesis and Evaluation of dual MAO/AChE Inhibitory Capabilities of some Novel Aryl Hydrazones", International Conference on "Emerging Trends in Drug Discovery and Development" (ICETD3) at Ranchi (18-20 January 2022) organized by BIT, Ranchi.

Distinguished Visitors

Sl. No.	Name of the visitor & designation	Date of visit	Purpose of visit
1	Dr. P.M. Naik, Mumbai	28.12.2021	To handover book written by his father, a alum of this Department
2	Dr. A. Ramkishan, Deputy Drug Controller, CDSCO	04.02.2022	Regarding NEP 2020
3	Bhaskar Bandari, IT TECH Project Manager, IQVIA	04.02.2022	Personal visit
4	Vinay Kumar Gupta, Asst Drugs Controller (I), CDSCO, Sub zone Varanasi	04.02.2022	Personal Visit
5	Jaya Gautam	06.03.2022	Visit of the Alma Mater
6	CB Thakur, Sr. GM Operation, AKUMS Drugs & Pharmaceutical Ltd	15.03.2022	Regarding potential industry collaboration

Foreign students visit in the Department/School/Unit

Sl. No.	Name of foreign student	Purpose of visit	Date and venue
1	Rasha Ksirri	Foreign National M.Pharm. student	Session 2021-22

Key Instruments:

Pharmaceutics Research Laboratory

Sophisticated Instrument Laboratory - CAMAG HPTLC

Sophisticated Instrument Laboratory - Shimadzu HPLC, Agilent HPLC

17. Department of Humanistic Studies

Full Name of Department: Humanistic Studies

Year of Establishment: 2015

Head of the Department: Dr. Ajit Kumar Mishra w.e.f. 30/06/2021

Brief introduction of the Department:

The Department of Humanistic Studies has been conceptualized with a broad vision to help connect skill education with broader understanding of the self and the society. The department consists of diverse disciplines: History, Philosophy, Sociology, Psychology, Language, Literature and culture. At the UG level, the department offers four foundational courses: Education and Self, History and Civilization, Development of Societies, and Philosophy; one Institute course on Human Values; and a number of elective and open elective courses in humanities, language, and management. The department also offers a PhD program in various areas of the existing disciplines and carries out sponsored research and consultancy projects.

Major areas of research

1. English (Literature, Cultural Studies, Gender Studies, Film Studies and Visual Culture, Narrative Studies, Professional Communication, Creative writing, Literary Theory)
2. Linguistics (Linguistic Analysis, Computational Linguistics, Machine Translation, Grammar Formalism, Cognitive Linguistics, Language Processing, Sanskrit Computational Linguistics, Sociolinguistics)
3. Philosophy (Indian and Western Logic, Gandhian Philosophy, Peace and Ahimsa Studies, Indian Philosophy, Sanskrit- Navya Nyaya and Bharatiya Tarka, Indian Knowledge Systems)
4. Psychology (Social Psychology, Health and Well Being)
5. Sociology and Anthropology (Gender Studies, Science, Technology and Society, Social Anthropology in India, Ethnography of Performance, Globalization and Development, Health, Sanitation, and Environmental Studies)

Area of the Department/School (in square meters): 380.328 m^2

Infrastructure

Sl. No.	Particulars	Number
1	No. of classrooms	N/A
2	No. of lecture halls	N/A
3	No. of laboratory	N/A
4	No. of computers available for students in the Department/School	32

Students on Roll

Sl. No.	Programme	I Year	II Year	III Year	IV Year	V Year & above
1.	B. Tech/B. Arch	N/A	N/A	N/A	N/A	N/A
2.	Dual Degree	N/A	N/A	N/A	N/A	N/A
3.	M. Tech/ M. Pharm	N/A	N/A	N/A	N/A	N/A
4.	Ph. D (Under Institute Fellowship)	4	5	1	6	3
5.	Ph. D (Under Project Fellowship)	N/A	N/A	N/A	N/A	N/A
6.	Ph. D (Under Sponsored Category)	Nil	Nil	Nil	Nil	Nil

* PhD (Under External Fellowship Category- UGC JRF, NFSC) - 28 and PhD (ASEAN-DIA Programme) - 02, PhD (External Registration Category) - 01

Names of students/scholars who attended conferences/ workshops/seminars and symposia abroad or in India

Sl. No.	Name of student	Roll no.	Conference/Seminar/Symposia/Workshop	Date & venue	Financial assistance from
India					
1	Vibhanshu Verma	18191005	Poster Presentation at the 31st Convention of National Academy of Psychology. Poster Title: Moral Reasoning, Dual Identities, and Political Protests.	4-6 March 2022 IIT Bombay (Online)	
2	Babita Chatterjee	19191003	I. Paper presented in 11th ACLA-Asian Cultural Landscape Association International Webinar II. Paper title: Impact of globalization on the folk culture of rural Bengal: Crises of identity and heritage III. Paper presented in International Conference on Sustainable Development Goals and Gender Perspective IV. Paper title: Positive Discrimination and Women Empowerment for Sustainable Social Development V. Attended a webinar on Geospatial Technology Applications VI. Participated in an training programme on "MGNREGS Planning for Climate Adaptation (Assets Creation for Climatic Adaptation Soil Water Trees) in Convergence with other Departments"	11/06/2021 Nanjing University of Aeronautics and Astronautics (NUAA), Nanjing, CHINA (Online) 25-26 October 2021 Sardar Vallabhbhai National Institute of Technology, Surat (Online) 16/09/2021 Diamond Harbour Women's University, Kolkata (Online) 20-22 October 2021 National Institute of Rural development and Panchyati Raj, Hyderabad (Online)	
3	Elham Malik	19191004	AOM Conference 2021, AOM MSR Retreat, AOM MSR Doctoral Workshop, International Humanistic Management Association Workshop Improv, Vrije University Hindu Worldview Workshop	Aug 2021, Dec 2021	
4	Abhijeet Satsangi	19191501	I. 2-week Online Intensive Training cum Orientation Programme on Translation and Interpretation organised by National Translation Mission, central Institute of Indian Languages, Mysuru. II. Two weeks online Faculty development programme on "Natural Language Processing" jointly organized by the Electronics and ICT Academies at IIT Kanpur, IIT Roorkee, MNIT Jaipur, PDPM IIITDM Jabalpur and NIT Patna. III. Presented a paper entitled *'A comparative study of Hedging in Indian English and British English Newspapers*' in the 48th ALL INDIA CONFERENCE OF DRAVIDIAN LINGUISTS	17-30 September, 2021 (Online) 7-18 February 2022; (Online) 25- 26 February 2022 Department of Linguistics, Bharathiar University, Coimbatore	

Sl. No.	Name of student	Roll no.	Conference/Seminar/Symposia/Workshop	Date & venue	Financial assistance from
5	Pursotam Kumar	19191504	I. Attended the national seminar titled "Language Resource and Artificial Intelligence in Indian Languages", organized by Linguistic Data Consortium for Indian Languages (LDC-IL), CIIL, Mysore. II. 2-week Online Intensive Training cum Orientation Programme on Translation and Interpretation organised by National Translation Mission, central Institute of Indian Languages, Mysuru. III. Participated in the "Three-Day FDP on Basics of Research Statistics" organized by A2Z EduLearningHub LLP. IV. Participated in Hindi-to-Central Magahi (Magadhi) Sentence Translation at Spire Labs IISc Bangalore. V. Two weeks online Faculty development programme on "Natural Language Processing" jointly organized by the Electronics and ICT Academies at IIT Kanpur, IIT Roorkee, MNIT Jaipur, PDPM IIITDM Jabalpur and NIT Patna. VI. Presented a paper entitled *'A corpus-based English-to-Hindi divergence study of selected phrasal verbs*' in the 48th ALL INDIA CONFERENCE OF DRAVIDIAN LINGUISTS.	15 June, 2021; (Online) 17-30 September 2021 (Online) 1-3 October 2021 (Online) 3-8 January 2022 February 7-18, 2022; Online 25-26 February 2022 Department of Linguistics, Bharathiar University, Coimbatore.	
6	Siddharth Chauhan	19191505	1. Participated in Hindi-Southern Bhojpuri Sentence Translation at Spire Labs IISc Bangalore 2. Two weeks online Faculty development programme on "Natural Language Processing" jointly organized by the Electronics and ICT Academies at IIT Kanpur, IIT Roorkee, MNIT Jaipur, PDPM IIITDM Jabalpur and NIT Patna. 3. Presented a paper entitled *'Use of prepositions in English as a Second Language (ESL) textbook: A case study of Class 1 English*' in the 48th ALL INDIA CONFERENCE OF DRAVIDIAN LINGUISTS.	26-30 December, 2021 7-12 February 2022 25-26 February, 2022 Department of Linguistics, Bharathiar University, Coimbatore.	

Sl. No.	Name of student	Roll no.	Conference/Seminar/Symposia/Workshop	Date & venue	Financial assistance from
7	Suman Rawat	19191507	Participated in online Research Methodology Workshop on Measurement of Discrimination: Market and Nonmarket Institutions organised by Indian Institute of Dalit Studies, New Delhi in collaboration with Rosa Luxemburg Stiftung, South Asia. Presented a paper entitled Women, Childbirth and Catholics: A Study on Rituals, Illnesses and Treatments in Eastern Uttar Pradesh at the online conference on Catholicism, Family and Asian Societies organized by the Asia Research Institute.	1-3 September 2021 Virtual mode 11/02/2022	
8	Abhitha S J	20191501	1. Successfully completed an online course on Classic Children's Literature offered by Hillsdale College, Hillsdale, Michigan, USA. 2. Successfully participated in and completed Humanities Summer School of Critical Theory and Philosophy 2021 organized by University of Wales Trinity Saint David, Lampeter, UK in collaboration with St Berchmans College, Changanacherry, Kerala India 3. Successfully participated in and completed Trinity Children's Literature Summer School 2021 organized by School of English, Trinity College Dublin 4. Attended an International Conference on Children and Childhood: Imagineries in Indian and Other Asian Literature and Film organized by Department of English and Cultural Studies, Christ (Deemed to be University), Bangalore 5. Attended a lecture on Differentiation and Disjunction: Social Markers of India's Education by A. R. Vasavi organized by Tata Institute of Social Sciences- Azim Premji School of Education	24/06/2021 (Online) 02-31 July 2021 (Online) 23-30 July 2021 (Online) 11-12 November 2021 (Online) 03/03/2022 (Online)	

Sl. No.	Name of student	Roll no.	Conference/Seminar/Symposia/Workshop	Date & venue	Financial assistance from
9	Animesh Roy	20191503	Participated in a one-week online Faculty Development programme organised by Presidency University Bengaluru named NEW VISTAS IN ENGLISH STUDIES Attended a webinar on CLIMATE CHANGE AND FORCED MIGRATION at St Xavier's University, Kolkata Attended a online talk on HOW FORESTS SHAPE CLIMATE AND CLIMATE CHANGE IS SHAPING FORESTS. YALE UNIVERSITY, USA Participated in a 7th day International Online Faculty Development Programme on CONTEMPORARY THEORIES: CHALLENGES AND POSSIBILITIES organised by DEPT OF ENGLISH UNDER THE AEGIS OF IQAC VASANTA COLLEGE FOR WOMEN RAJGHAT, VARANASI, INDIA	20-26 September 2021 28-29 October 2021 05/112021 13th- 20th Dec,2021	
10	Jyoti Kumari	20191505	2-week Online Intensive Training cum Orientation Programme on Translation and Interpretation organised by National Translation Mission, central Institute of Indian Languages, Mysuru.	17- 30 September, 2021 (Online)	
11	Kuldeep Sharma	20191506	Participated in the webinar "A Few Good Men" organised by Indian Institute of Technology, BHU, Varanasi	10/11/2021 Online	
12	Mahua Bhattacharyya	20191508	1. Attended a Young Researchers' Conference on As a Matter of Affect: Making Sense of Planetarity organised by DEPT OF ENGLISH, JAMIA MILIA ISLAMIA, NEW DELHI, INDIA 2. Seven- day International Online Faculty Development Programme on CONTEMPORARY THEORIES: CHALLENGES AND POSSIBILITIES organised by DEPT OF ENGLISH UNDER THE AEGIS OF IQAC VASANTA COLLEGE FOR WOMEN, RAJGHAT, VARANASI, INDIA 3. Delivered an invited online lecture on Emotion, Affect, Body Shaming and scope in Literary Research organised by DEPT OF ENGLISH, VASANTA COLLEGE FOR WOMEN, RAJGHAT, VARANASI, INDIA	02-03 December 2021 13-20 December 2021 8th April, 2022	

Sl. No.	Name of student	Roll no.	Conference/Seminar/Symposia/Workshop	Date & venue	Financial assistance from
13	Akash Kumar Srivastava	21191001	Successfully completed a short-term course on "Archaeometallurgy and Scientific analysis of Ancient Metal Objects" organized by National Research Laboratory for Conservation of Cultural Property, Lucknow. Participated in the Winter School on "Arthayama: Towards a Dharma-Centric Vision of Economy/Political Economy with Special Reference to Gandhi and other Indian Thinkers" organized by the Indian Institute of Advanced study, Rashtrapati Niwas, Shimla One-Week Faculty Development Programme on "Research in Social Sciences: Contemporary Trends, Perspective and Pedagogy" jointly organized by Jawaharlal Nehru University and Galgotias University Workshop on "3D Landscapes: GIS Applications in Archaeological Researches" organized by National Institute of Advanced Studies	09-13 September 2021 (Online) 01-15 December 2021 Indian Institute of Advanced Study, Rashtrapati Niwas, Shimla 07-13 February 2022 (Online) 21- 25 March 2022 National Institute of Advanced Studies, IISc campus, Bangalore	
14	Nidhila S	21191005	Five-day international conference titled "Contemporary Cinema at International Film Festivals" organized by IIT Madras & Center for Performance Research and Cultural Studies in South Asia	7–11 December 2021 Virtual	
15	Samyamoy Khutia	21191008	Five-day international conference titled "Contemporary Cinema at International Film Festivals" organized by IIT Madras & Center for Performance Research and Cultural Studies in South Asia	7–11 December 2021 Virtual	
16	Alok Mishra	21191501	Presented a paper titled: "Ideological Contestation: Politics of Indigeneity and Self Governance in Jharkhand" in one day National Seminar on Hundred Years of Adivasi Intervention in Indian Legislature and Parliamentary Democracy organized by the Dr Ram Dayal Munda Tribal Welfare Research Institute and JBSSA, Ranchi.	26/10/ 2021 Offline	
17	Namrata Paul	21191503	International Webinar on Current Trends in Lexical Semantics organized by the Department of Linguistics, University of Kerala, India Topic: "Comparing and Contrasting the Metaphorical and Literal Senses in Certain Specialized Bengali Multi-verb Constructions: A Lexical Semantic Approach"	01-03 February 2022; (Online)	

Names of students/scholars who got prizes and awards outside the Institute

Sl. No.	Name of student	Roll no.	Name of prize	Date & venue	Prize awarded by
1	AKANKSHA YADAV	19191001	Awarded Short Term Fellowship for three months by University of Heidelberg.	1st September 2021-31st November 2021.	under the DAAD sponsored student exchange
2	Anuja Jose	20191504	Awarded Short Term Fellowship for three months by University of Heidelberg.	1st September 2021-31st November 2021.	under the DAAD sponsored student exchange
3	ELHAM MALIK	19191004	Fetzer Fellowship at AOM	July 2021	None
4	MANOJ BHANDARI	19191502	भेषनाथस्मृति साहित्य सम्मान-२०७८	Hetauda, Nepal, 26 February -2022	Sahitya Sangam Makwanpur, Nepal

Faculty & their activities Faculty and their areas of specialisation

Sl. No.	Name, Qualifications, Employee No., Date of Joining	Date of award of PhD degree	Major areas of specialization
Professors			
1	Prasanta Kumar Panda MPhil & PhD, 16728 DOJ: 14/08/2002	1998	Literary Theory, Professional Communication, Creative Writing
Associate Professors			
1	Sanjukta Ghosh PhD. 17532 DOJ: 14/02/2018	March 2004	Cognitive Semantics, Lexical Semantics, Pragmatics
2	Anil Kumar Thakur PhD, 17533 DOJ: 14/02/2018	August 11, 2005	Syntax, Linguistic Analysis, Comparative Grammar
3	Ajit Kumar Mishra PhD, 50196 DOJ: 14/03/2018	December 2003	Narrative Studies (Culture, Medicine, Health); Visual Culture (Film, Television, Photography); Humanistic Communication (Healthcare, Management, Business, Wellbeing)
4	Nirmalya Guha PhD, 50221 DOJ: 28/05/2018	May 01, 2009	Philosophy, Indian Knowledge Systems
5	Vinita Chandra PhD, 19253 DOJ: 16.07.2018	4 March, 2009	History, Gender Studies; Disability Studies
6	K.V. Cybil PhD, 50228 DOJ: 15/10/2018	2003	Social Anthropology
Assistant Professors			
1	Swasti Mishra PhD	December 31, 2006	Sociolinguistics, Language Culture & Society, lexicon and Lexicography, lexical semantics, Computational Lexicography, Applied Linguistics, Computational Linguistics
2	Amrita Dwivedi PhD, 50177 DOJ: 08.02.2018	2009	Environmental Studies -Sanitation & Health, Waste Management, Applied Geography
3	Sukhada PhD, 50178 DOJ: 20/02/2018	12/08/2017	Computational Linguistics, Sanskrit Paninian Grammar, Vedic Philosophy
4	Manahar Charan PhD, 50181 DOJ: 22.02.2018	March 2012	Humanistic Philosophy & Research, Gandhian Philosophy, Peace & Non-violence Studies

Sl. No.	Name, Qualifications, Employee No., Date of Joining	Date of award of PhD degree	Major areas of specialization
5	Kavya Krishna KR PhD, 50224 DOJ: 18/03/2018	20/4/2015	English, Cultural Studies, Gender Studies
6	Vishwanath Dhital PhD, DOJ: 26.03.2018	December 8, 2011	Navya Nyaya, Bharatiya Darshan
7	Shail Shankar PhD, 50220 DOJ: 18.06.2018	February, 2011	Group dynamics, Identity, Health and Wellbeing
8	Satish Kanaujia PhD, 13571 DOJ: 07.02.1997	2013	Physical-Education
Visiting Faculty			
1. Dr. Sanjaya Kumar Lenka FAC-VF13 DOJ: 08/07/2013		04/05/2011	Morphosyntax
2. Mr. Arvind Gupta			Management
3. Mr. Rajeev Gupta			Management
4. Mr. Arun Anant			Management
5. Mr. Deepak Gandotra			Management
6. Mr. Anurag Singh			Management
7. Mr. Abhishake Mathur			Management
8. Mr. S. Krishna Kumar			Management
9. Mr. Vineet Suri			Management
10. Mr. Bharath Ganapathi			Management
11. Mr. Vipul Prasad			Management
12. Mr. Shailesh Kumar			Management
13. Mr. Ashish Bansal			Management
14. Mr. Tushar Kant			Management
DST INSPIRE Faculty			

Technical and Non-Teaching Staff

Sl. No.	Name, Qualifications	Designation, Employee No.	Date of appointment in the department
1	Vinay Prakash Singh BA (Sociology), MA (Sociology), B.Lib., M.Lib	Junior Assistant, 50099	22.05.2017
2	Amit Kumar Prajapati Intermediate	Multi-tasking Staff	13.12.2016

Short-term courses/workshops/seminars/symposia/conferences organised by faculty members

Sl. No.	Coordinator	Title	Period
1	Sanjukta Ghosh	Qualia Structure in Generative Lexicon, Web-talk by Prof. Elisabetta Jezek, University of Pavia, Italy, as part of Department Webinar Series	02/11/2021
2	Nirmalya Guha	On How to Keep the 'Gruesome' *pakṣetaratva* in Check" by Prof. Eberhard Guhe, Fudan University	04/12/2021
3	Nirmalya Guha	The Great: The Sāṃkhya Perspective" by Prof. Diwakar charya, Oxford University	09/03/2022

Sl. No.	Coordinator	Title	Period
4	K.V. Cybil	Hospital in South Asia	24/03/2022
5	Kavya Krishna K.R.	A Few Good Men: Directors who changed the face of Bollywood (2005-2015), Web-talk delivered by Prof. Aysha Iqbal IIT-Madras, as part of Department Webinar Series	10/11/ 2021
6	Vishwanath Dhital	पञ्च दिवसीय संस्कृत सम्भाषण अन्तर्जालीय कार्यशाला	06 -10 December 2021
7	Amrita Dwivedi	Indian Knowledge Systems and the Future Indians	11/12/ 2021
8	Sukhada	Applied Grammar: Overcoming Language Barrier in Indian Context (Webinar)	13/12/2021

Short-term courses/workshops/seminars/symposia/conferences/training programmes attended by faculty members in academic institutions and public sector undertakings

Sl. No.	Name of faculty member	Title	Period and venue
Seminars/Symposia/Conferences			
1	Prasata Kumar Panda	Digitization and Technology-led Disruption in the Age of Covid	21/08/2021
2	Prasata Kumar Panda	Conquering the intricacies of citations and references (web-talk by Yateendra Joshi Academic Publication Trainer, Wiley)	24/08/2021
3	Prasata Kumar Panda	Mastering the craft of academic writing	31/08/2021
4	Prasata Kumar Panda	Winning the game of publishing research papers, raising your profile and extending the impact of publication	07/09/2021
5	Prasata Kumar Panda	CBPR master trainers training conducted by UGC	13/01/ 2022
6	Prasata Kumar Panda	How higher education enrolment is changing worldwide, hosted by University World News in association with Higher Education Strategy Associates	31/03/2022
7	Sanjukta Ghosh	Cognitive Science Colloquium organized by IIT Delhi	Series of talks since 2020-till date, Online
8	Sanjukta Ghosh	The Historical Politeness Network for Ancient Languages and Linguistic Politeness Research Group	Series of talks since 2021-till date, Online
9	Nirmalya Guha	Indian Knowledge System and Mental Health (IKSMH)	March 2022 IIT Mandi
10	Kavya Krishna KR	Capacity Building of Women Leaders in (Higher Education, Short Term FDP AICTE –ATAL)	12/07/2021 to 16/07/2021. SRM Chennai, Online
11	Kavya Krishna KR	Paper Presentation International Conference- The Experience in/of Cinema: Gender, politics and the Question of Representation in Recent Malayalam Films'in the *International Conference -Towards New Visions: Women in Films, Media and Beyond.*	11-12 March 2021 University of Guelph, Shastri Indo Canadian Institute and IIT Madras (Online)
12	Kavya Krishna KR	Paper Presentation International Conference- The Subversive Visual Retellings of the legend of Nangeli, the Subaltern Woman who protested against Breast Tax. *International Colloquium on Politics and Narratives of the Body*	26-28 May 2021 Nannterre University, Paris, France (Online)
13	Kavya Krishna KR	Paper Presentation International Conference- Intersection of Gender and Caste in the Sabarimala Issue' in *European Conference on South Asian Studies.*	26-29 July 2021 EASAS-European Conference on South Asian Studies University of Vienna, Austria (Online)

Sl. No.	Name of faculty member	Title	Period and venue
14	Swasti Mishra	International Webinar on "Current Trends in Lexical Semantics" (Chaired a session)	01-03 February 2022 Department of Linguistics, University of Kerala, Trivandrum.
15	Vishwanath Dhital	अखिल भारतीय संस्कृत सम्मेलन(Sponsored by- उत्तर प्रदेश संस्कृत संस्थान, लखनऊ)	19-21 November 2021 चौधरी चरण सिंह विश्वविद्यालय, मेरठ.
16	Amrita Dwivedi	"Impact of globalization on the folk culture of rural Bengal : Crises of identity and heritage" 11th ACLA-International webinar on cultural landscapes	11-12 June 2021 Nanjing University of Aeronautics & Astronautics (NUAA), China
17	Amrita Dwivedi	International Conference on "Sustainable Development Goals and Gender Perspective"	25-26 October 2021 Organised by SVNIT, Surat, India,
18	Sukhada	Linguistic evidence for Qualia values in word distribution	02/22/2021 Online
19	Manahar Charan	Orientation Workshop (Unnat Bharat Abhiyan(UBA))	23/03/2022 IIT (BHU) Varanasi

Special lectures delivered by faculty members in other institutions

Sl. No.	Name of faculty member	Topic of lecture	Institution	Date
1	Prasanta Kumar Panda	21st Century Academic Writing	IAS, BHU, Varanasi	30/11/2021
2	Sanjukta Ghosh	What do we know when we know a language?	Amity University, Patna	20/08/2021
3	Sanjukta Ghosh	Where is the meaning?	Amity University, Patna	17/09/2021
4	Sanjukta Ghosh	Generative Lexicon: Ontology and Lexical Semantics Interface	International Conference on Current Trends in lexical Semantics, University of Kerala, Thiruvanantapuram	03/02/2022
5	Ajit K Mishra	Elements of Research	SVNIT Surat	9/07/2021
6	Ajit K Mishra	Digital Skills for Research	SVNIT Surat	10/07/2021
7	Ajit K Mishra	Research Writing: Building Blocks	IIT Tirupati	13/09/2021
8	Ajit K Mishra	Language Ethics for Research Purposes	Rajiv Gandhi University, Arunachal Pradesh	28/10/2021
9	Ajit K Mishra	Writing Quality Research Papers	Nagaland University	26/10/2021
10	Ajit K Mishra	Mechanics of Writing	Department of Extension Education Institute of Agricultural Sciences BHU, Varanasi	1/12/2021
11	Ajit K Mishra	Building Blocks of Writing	Department of Extension Education Institute of Agricultural Sciences BHU, Varanasi	2/12/2021
12	Nirmalya Guha	An Inferential Theory of Meaning Indian Logic	Banaras Hindu University	August 2021
13	Nirmalya Guha		Shri Mata Vaishno Devi University, Katra	October 2021
14	Nirmalya Guha	Logical Fallacy	SreeSankaracharya University of Sanskrit, Kalady	November 2021
15	Nirmalya Guha	Cognitive Health	IIT Mandi	March 2022
16	K.V. Cybil	Desi and Margi: Problems in History and Territoriality of Music	Deleuze and Guattari Studies in India Collective, Chandigarh (online)	10/11/2021

17	Kavya Krishna K.R	Understanding Cultural Studies: Theory, Praxis and Research Possibilities	Dept of English, Yuvakhetra Institute of Management Studies, Palakkad, Kerala (webinar)	27 /11/2021
18	Kavya Krishna K.R	Thinking about Mohiniyattam and Malayalee Femininity	Research Forum, Dept of English, Calicut University, Kerala (online)	29/09/2021
19	Kavya Krishna K.R	Gender and the Politics of Experience in The Great Indian Kitchen	Symposium 'White Noise: A Symposium on Subtle Sexism' at Loyola Academy PG College, Secunderabad, Telenagana (online)	14/08/2021
20	Swasti Mishra	"Cognitive Semantic Analysis of Perception Verbs in English-Hindi: In the Context of Machine Translation"	International Webinar on "Current Trends in Lexical Semantics"	01-03 February 2022 Department of Linguistics, University of Kerala,
21	Vishwanath Dhital	न्यायशास्त्रे लक्षण-लक्षणविमर्शः	छत्तीसगढसंस्कृतशिक्षासेवा-संस्थानम्,	21/08/2021 (Online)
22	Vishwanath Dhital	काणादं पाणिनीयञ्च सर्वशास्त्रोपकारकम्	सरकारी-संस्कृत-महाविद्यालय, साम्दोंग, पूर्वसिक्किम	26/08/2021 (Online)
23	Vishwanath Dhital	तर्कामृतम्	केन्द्रियसंस्कृतविश्वविद्यालय, श्रीरघुनाथकीर्तिपरिसर, ढेवप्रयाग, उत्तराखण्ड	09/09/2021 (Online)
24	Vishwanath Dhital	नव्यन्यायभाषाप्रदीप	केन्द्रियसंस्कृतविश्वविद्यालय, श्रीरघुनाथकीर्तिपरिसर, ढेवप्रयाग, उत्तराखण्ड	13/11/2021 (Online)
25	Vishwanath Dhital	अनुसन्धानकार्ये आभिमुख्यसम्पादनम्	महेश-संस्कृत-गुरुकुलम् ढेवघाट, तनहूं, नेपाल	30/12/2021
26	Sukhada	Information Dynamics in Language	Usha Pravin Gandhi College of Arts, Science and Commerce, Vile Parle, Mumbai-56.	22/02/2022
27	Sukhada	Indian Knowledge System	Babu Banarasi Das Engineering College Lucknow	06/12/2021
28	Manhar Charan	Value Education and Ethics	IIITM Gwalior	March-April 2021 (10 Lectures, online)

Visits abroad by faculty members

Sl. No.	Name of faculty member	Country visited	Date of leaving India	Date of returning India	Purpose of visit	Funding from
1	Vishwanath Dhital	Nepal	20/12/2021	31/12/2021	Invited for a Lecture in a *Vidvatsabha.*	Organiser

Books, monographs authored/co-authored

Sl. No.	Name of author/co-author	Title	Publisher
1	Neelam Yadav & Swasti Mishra (eds) (2021)	Linguistics and Allied Disciplines (ISBN-10 8195325920)	Insha Publications, New Delhi
2	Vishwanath Dhital (2021)	Tarkasangraha- Matridurga Nepali commentary.	(Mahesh Sanskrit Gurukul, Ramananda Research Institute)

Editorial boards of journals

Sl. No.	Name of faculty member	Position (editor/member)	Name of journal
1	Prasanta Kumar Panda	Editor-in-Chief	Nuances (A Journal of Humanistic Inquiry (ISSN NO 2395-0943)
2	Prasanta Kumar Panda	Member, Advisory Board	Platform: A Bi-Lingual Magazine Based on Literature and Culture (ISSN- 2347-5242)
3	K.V. Cybil	Member	JMC Review
4	Vishwanath Dhital	Member	OM RISE (An online magazine from the Chair of Hindu Spirituality and Society Vrije Universiteit Amsterdam, The Netherlands)

Research and Consultancy Sponsored research projects (Ongoing only)

Sl. No.	Title	Period	Funding agency	Amount (in lakhs of Rs.)	Project P.I
1	Indian Knowledge Systems	March 2022 – March 2024	AICTE-Ministry of Education, Govt. of India		PI: V. Ramanathan Co-PI: Nirmalya Guha
2	Language Communicator Tool for End Users	03 Years	MeitY, NLTM, GoI	172	Sukhada
3	Neeti Shastras and Modernity: Understanding the Reflective Equilibrium between Hermeneutics of Normative Texts and Practice	02 Years	IKS Division of AICTE	10	Sukhada
4	Analytical study of Sansad Adarsh Gram Yojana of Jayapur and Nagapur in Varanasi District	5 months	Mahatma Gandhi National Council of Rural Education Ministry of Education, Government of India	2	Manahar Charan

Industrial consultancy projects (Ongoing only)

Sl. No.	Name of faculty member	Title	Industry	Amount (in lakhs of Rs.)
1	Amrita Dwivedi (Co-PI)	Impact Assessment of Toilets under CSR initiative	NCL	46
2	Manhar Charan (Co-PI)	Impact Assessment of Toilets under CSR initiative	NCL	46

Faculty members' participation with other universities under MoUs (Ongoing only)

Dr. Vishwanath Dhital and Dr. Sukhada

1. Editorial Team member, OM RISE (Organizational Management (OM), Research (R), Innovation (I) and Sustainable Entrepreneurship (SE)), in The Netherlands (An online magazine from the Chair of Hindu Spirituality and Society Vrije Universiteit Amsterdam). Link: https://magazine.omrise.org/2020/10/editorial-note-spirituality-management-and-society-issue-4/

2. Delivered online lectures for the course "INTRODUCTION TO HINDU SPIRITUAL CARE, RITUALS AND TRADITIONS" for the Post Graduate Diploma program in "INTEGRATIVE SPIRITUAL CARE" at Vrije Universiteit Amsterdam, Netherlands.

3. Delivered online lectures for the course "COMMUNITY BUILDING AND HINDU ETHICS & LEADERSHIP" for the Post Graduate Diploma program in "INTEGRATIVE SPIRITUAL CARE" at Vrije Universiteit Amsterdam, Netherlands.

4. Co-designed a course "Introduction to Hindu Darśana" for a certificate program on "Integrative Understanding of Hindu Rituals" run by Vrije Universiteit Amsterdam, Netherlands.

5. Co-designed a course "Hindu Rituals (Nitya Karma, Naimittika Karma & 16 Saṃskāras)" for a certificate program on "Integrative Understanding of Hindu Rituals" run by Vrije Universiteit Amsterdam, Netherlands.

Research publications

Total number of papers published in refereed National journals	03
Total number of papers published in refereed International journals	15
Total number of papers presented in National conferences	00
Total number of papers presented in International conferences	02

Refereed International journals

1. Ghosh Sanjukta and Dwivedi Vandana (2022) Classification of Hindi Compound Nouns using Machine Learning. Computer Science 3:29. Springer Nature.

2. Ghosh Sanjukta and Dwivedi Satyam (2022) Subjectivity Identification through lexical rules. Computer Science. 3:32. Springer Nature.

3. Ghosh Sanjukta, Dwivedi Shivam and Dwivedi Satyam (2022) Developing Hindi Stammering Corpus: Framework and Insights. Computer Science. 3:39. Springer Nature.

4. Ghosh Sanjukta (2022) Classification and Rule-based Interpretation of Genitive Inflected Bangla Compound Nouns. International Journal of Dravidian Linguistics. Dravidian Linguistics Association.

5. Rajbhar V, Kumar S and Mishra A.K. (2022) The Uncharted Territory: A Study of Kabir's Oral and Performative Traditions among Women Singers in North India. Journal of Optoelectronics Laser, 41 (3): 26-35.

6. Rajbhar V, Kumar S and Mishra A. K. (2022). Is Kabir Anti Women? An Exploratory Study of Kabir's Image among Kabirpanthi Women. Journal of Positive School Psychology, 6 (3): 5709-5718.

7. Guha, N. (2021) The Identity That Doesn't Deny Difference: A Non-dualist Argument. *Journal of Indian Philosophy* 49, 257–289.

8. Guha, N. (2021) The Inferential Model of Meaning: An Abandoned Route. *Journal of Indian Philosophy* 49, 641–655.

9. Ranjan A, Singh VP, Mishra RB, Thakur Anil and Singh AK. (2021) Sentence polarity detection using stepwise greedy correlation based feature selection and random forests: An fMRI study. Journal of Neurolinguistics, Volume 59, DOI:10.1016/j.jneuroling.2021.100985

10. Cybil KV. (2022) Narayana Guru and the Formation of Political Society in Kerala, Anti-caste Revolt, Religion and the Untouchables, Contemporary Voice of Dalit, February 3, 2022.

11. Rajesh Kumar Mundotiya, Manish Kumar Singh, Rahul Kapur, Swasti Mishra, Anil Kumar Singh "Linguistic Resources for Bhojpuri, Magahi, and Maithili: Statistics about Them, Their Similarity Estimates, and Baselines for Three Applications", ACM Transactions On Asian And Low-Resource Language Information Processing Journal, Vol -20, November 2021, Impact Factor-1.420, SCOPUS(SCI).

12. Rajesh Kumar Mundotiya, Swasti Mishra, Anil Kumar Singh, "Hierarchical self attention based sequential labelling model for Bhojpuri, Maithili and Magahi languages". Journal of King Saud University - Computer and Information Science, In Press, Available online from 07 October 2021, Impact Factor- 13.473 (Elsevier).

13. Sumit Shekhar and Amrita Dwivedi (2021): 'Role of Innovation in Sustainable Sanitation System: A case study of India' published in the Journal of '*PROBLEMY EKOROZWOJU – PROBLEMS OF SUSTAINABLE DEVELOPMENT',* volume 16, 2/2021, IF-1.6,Pages 217-225,DOI: 10.35784/pe.2021.2.23

14. Deepak Rathore, Ravikant Dubey & Amrita Dwivedi (2021) Advances in mycoremediation of emerging potential toxic effluents, Pages 301-329, https://doi.org/10.1016/B978-0-12-821925-6.00014-9

15. Nandram Sharda S, Bindlish Puneet K., Sukhada, Shrestha Arjun Kumar (2021) Spirituality led Ethical Decision making with Yogic Yamas and Niyamas. Journal of Management, Spirituality & Religion. DOI: https://doi.org/10.51327/EHZW1674

Refereed National journal

1. Panda Prasanta Kumar (2021) A Rereading of love in feminist literary/Critical Considerations in last three decades of twentieth century. The Journal of Odisha Association of English Studies, 11(1) 48-55. 2249-6726.

2. Cybil KV (2022) Cinema and History: Theorizing Independent Films and Dogme, Nuances, Vol 6-7, 76-89

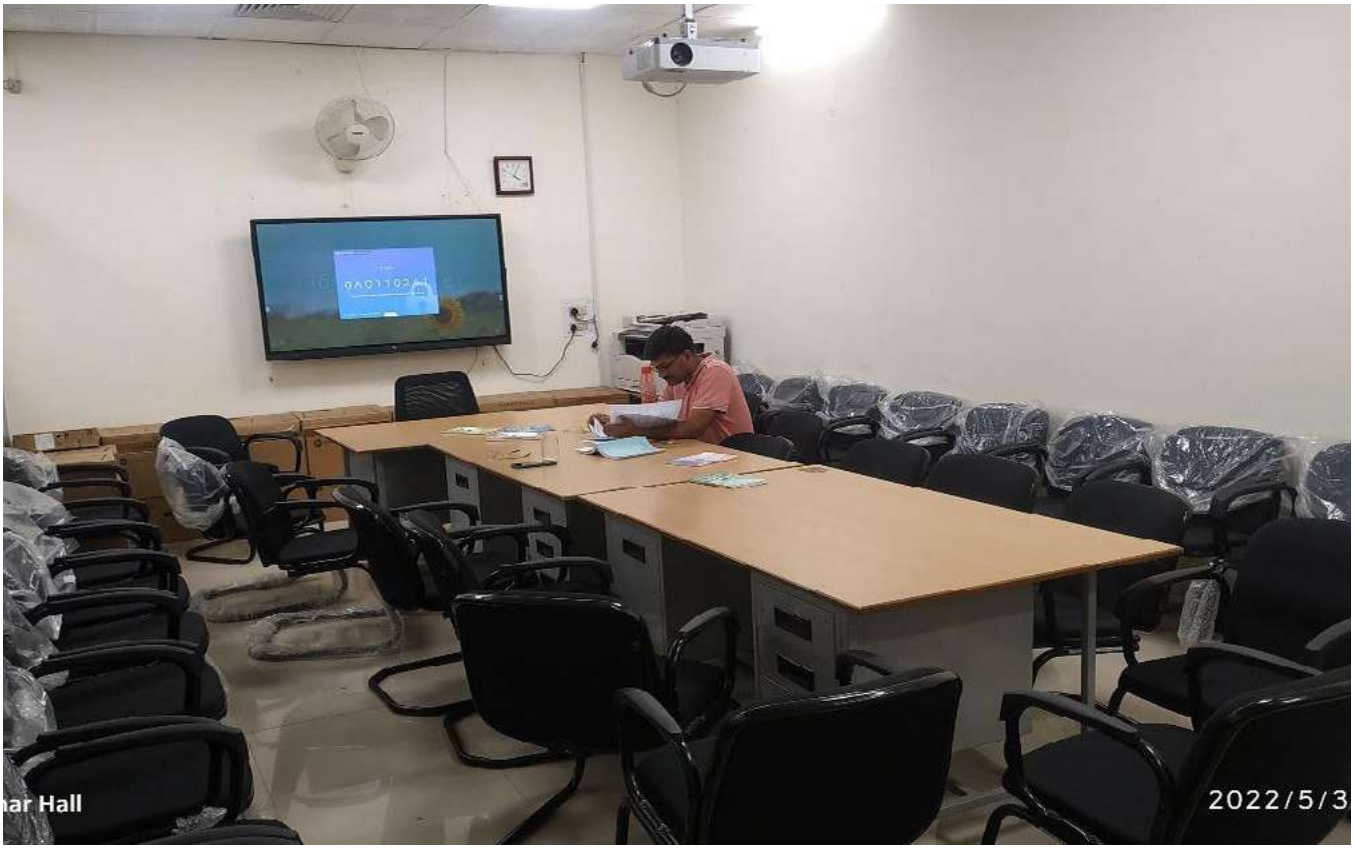
3. Sooraj SS and Krishna, Kavya KR (2022) Decoding Hegemonic Masculinity and Patriarchal Family: A Reading of the Malayalam Film Kumbalangi Nights. Caesurae: Poetics of Cultural Translation, 4. ISSN 2454-9495.

Proceedings of International conferences

1. Sukhada, Paul Soma, Kumar Rahul and Puranik Karthik (2021) Semantics of Spatio-Directional Geometric Terms of Indian Languages. In the International Conference on Natural Language Processing (ICON).

2. Lenka. Sanjaya Kumar (2021) Merge, Operation and Space. Proceedings of ICLOLSI4, CIIL Mysore.

Key Instruments:



18. School of Biochemical Engineering

Full Name of School: School of Biochemical Engineering

Year of Establishment: 1986

Coordinator of the School: Prof. Vikash Kumar Dubey w.e.f. 18-02-2020- till date

Brief introduction of the Department/School:

The School of Biochemical Engineering (BCE) at the Indian Institute of Technology (BHU) was established in 1986 for accomplishing numerous standards in teaching as well as in the research of the current field of biochemical and bioengineering aspects. The School has kept on renovating its academic programs to impart contemporary education in upcoming areas of biochemical engineering. At present, the school of BCE offers academic courses, including Integrated Dual Degree, M. Tech, and Ph.D. in BCE. Not only this, but the School of BCE also offers industrially oriented courses to students of other departments of IIT(BHU). In the new undergraduate program, the School has been assigned to offer a number of institute level courses either independently or jointly with other departments. The research facilities of the School are utilized not only by other departments of the institute and BHU but also by other teaching institutions and research laboratories across India. At present, there are eight highly dynamic faculty members in the School, who guide inter-departmental/interdisciplinary projects and dissertations. Faculty members are engaged in high-level fundamental and applied research funded by various funding agencies including DST, DBT, CSIR, ICMR, whereas some projects are also funded by the industries. The faculty members of the schools are trained very well in top tier national and international laboratories. The research domain of the School of BCE faculties comprises Bioprocessing, Bioreactor designing, Food engineering, Fermentation technology, Biofuel systems, Biochemical parasitology, Protein engineering Wastewater engineering, Bio-remediation, Bio-Physio Sensors, Nano-bio-engineering, Device Designs, Healthcare Technologies, etc. Now, the School of BCE has a new three-storied building, which includes all teaching classes and laboratories. The floor area of the new building of the School is 10,000 sq. feet. (Total 30,000 sqft). The School has 14 laboratories, 6 well-equipped lecture theatres, a well- equipped100-seater conference room, library, and internet facility. The School also has a well- furnished seminar room and few meeting rooms for faculty and students. The School enjoys an excellent professional interaction with various industrial organizations, experts, and consultants. Besides these, the School also provides expertise for process improvement/ development, raw materials and product analysis, microbiological testing, nano-sensors, etc. to the industries in and around Varanasi.

Major areas of Research

Bioprocessing, Bioreactor designing, Food engineering, Enzyme and Tissue Engineering, Fermentation technology, Biofuel systems, Biochemical parasitology, Protein engineering Wastewater engineering, Bio-remediation, Bio-Physio Sensors, Nano-bio-engineering, Device Designs, Healthcare Technologies.

Area of the Department/School (in square meters): 2787.0912

Infrastructure

Sl. No.	Particulars	Number
1	No. of classrooms	5
2	No. of lecture halls	1
3	No. of laboratory	15
4	No. of computers available for students in the Department/School	-

Academic programmes offered

Students on Roll

Sl. No.	Programme	I Year	II Year	III Year	IV Year	V Year & above
1.	B. Tech/B. Arch	--	--	--	--	--
2.	Dual Degree	22	21	12	13	13
3.	M. Tech/ M. Pharm	7	8			
4.	Ph. D (Under Institute Fellowship)	22	--	--	--	--
5.	Ph. D (Under Project Fellowship)	18	--	--	--	--
6.	Ph. D (Under Sponsored Category)	2	--	--	--	--

Names of students/scholars who attended conferences/ workshops/seminars and symposia abroad or in India

Sl. No.	Name of student	Roll no.	Conference/Seminar/Symposia/Workshop	Date & venue	Financial assistance from
India					
1	Darshna	19011007	National Conference on Computational and Biochemical Drug Discovery	September 11-12th , 2021 Virtual mode	None
			3rd Indian Materials Conclave and 32nd Annual General Meeting of MRSI	December 20-23rd , 2021 Virtual mode	None
			International e-Conference on Nanomaterials & Nanoengineering (APA Nanoforum 2022)	February 24-26th , 2022 Virtual mode	None
			International Conference (BioSangam 2022)	March 10-12th , 2022 Virtual mode	None
2	Shikha Kumari	17011505	International Conference (BioSangam 2022)	March 10-12th , 2022 Virtual mode	None
3	Aditya Anand	18011001	International Virtual Workshop 'Bioelectronic Medicine'	December 16th , 2021 Virtual mode	None
			National Conference on Computational and Biochemical Drug Discovery	September 11-12th , 2021 Virtual mode	None
4.	Kumari Prerna	18011009	National Conference on Computational and Biochemical Drug Discovery"	11-12th September 2021	None
			HEALTH 2021 Virtual International Conference on "CANCER BIOLOGY: Advances & Challenges	November 11-13th , 2021	None
			Presented a poster in the poster session organized at the 3rd ICGA 2022 Conference on the theme "Biobanking to omics: collecting the global experience	January 13-14th , 2022	None
5.	Debanjan Kundu	18011003	Online Webinar on Bio Start-ups	4th September 2021	None
			National Conference on Computational and Biochemical Drug Discovery	11-12th September 2021	None
			44th Indian Biophysical Society Meeting (IBS 2022)	30th March-1st April, 2022	None

Sl. No.	Name of student	Roll no.	Conference/Seminar/Symposia/Workshop	Date & venue	Financial assistance from
6.	Naveena Menpadi	19011002	National Conference on Computational and Biochemical Drug Discovery	11-12th September, 2021	None
7.	Preeti Ranjan	19011008	Online Webinar on Bio Start-ups	4th September 2021	None
			National Conference on Computational and Biochemical Drug Discovery	11-12th September, 2021	None
8.	Manash Sarma	19011011	National Conference on Computational and Biochemical Drug Discovery	11-12th September, 2021	None
9.	Tanuj Handa	20012004	Online Webinar on Bio Start-ups	4th September 2021	None
10.	Shweta Rawat	20011507	International conferences ICOMS-2021	Dec 13-14th , 2021, NCL Singrauli	Sponsored by the Conference organising committee
			Biosangam-2022, MNNIT, Prayagraj	March 10-12th , 2022 Online	CPDA supervisor Faculty
			Webinar:Nano- Deployable Nanobioengineered Sensing Technologies	Jan 23rd, 2021, Nano Springer Nature, USA	None
11.	Ajay Kumar Namdeo	19011004	Biosangam-2022, MNNIT, Prayagraj	March 10-12th , 2022 Online mode	None
12.	Akhil Rautela	17011501	Biosangam-2022, MNNIT, Prayagraj, India.	March 10-12th , 2022 Online mode	None
13.	Indrajeet	17011001	Biosangam-2022, MNNIT, Prayagraj, India.	March 10-12th , 2022 Online mode	None
14.	Supratim Mahapatra	20011504	7-day online workshop Karyashala on the "Advancements in in vitro Diagnostic methods in Healthcare" theme under Accelerate Vigyan Scheme of DST-SERB. 5-day Faculty Development Program, 'Smart and Functional Nanomaterials' at National Institute of Technology Calicut. HEALTH 2021 Virtual Conference on "Cancer Biology: Advances and Challenges". International Conference on Advanced Materials and Mechanical Characterization (ICAMM) 3rd Indian Materials Conclave (IndMac) and 32nd Annual General Meeting of MRSI Biosangam 2022 International Conference on 'Emerging Trends in Biotechnology'	19th-25th July 2021 (virtual) 4th -8th Aug 2021 (virtual) 11th -13th Nov, 2021 (virtual) 02- 04th Dec 2021 (virtual) 20th -23rd Dec, 2021 (virtual) 10th – 12th Mar, 2022 (virtual)	None
15.	Divya	20011501	7-day online workshop Karyashala on the "Advancements in in vitro Diagnostic methods in Healthcare" theme under Accelerate Vigyan Scheme of DST-SERB. 5-day Faculty Development Program, 'Smart and Functional Nanomaterials' at National Institute of Technology Calicut. HEALTH 2021 Virtual Conference on "Cancer Biology: Advances and Challenges".	19th -25th July 2021 (virtual) 4th -8th Aug 2021 (virtual) 11th -13th Nov, 2021 (virtual)	None

Sl. No.	Name of student	Roll no.	Conference/Seminar/Symposia/Workshop	Date & venue	Financial assistance from
			International Conference on Advanced Materials and Mechanical Characterization (ICAMM) 3rd Indian Materials Conclave (IndMac) and 32nd Annual General Meeting of MRSI Biosangam 2022 International Conference on 'Emerging Trends in Biotechnology', 10th – 12th March, 2022	02- 04th Dec 2021 (virtual) 20th -23rd Dec, 2021 (virtual) 10th – 12th Mar, 2022 (virtual)	None
16.	Daphika S Dkhar	21011002	RSC-IISER Desktop Seminar with Journal of Material Chemistry A; HEALTH 2021 Virtual Conference on "Cancer Biology: Advances and Challenges". International Colloquium on Technology Readiness for High Volume Semiconductor Chip Manufacturing (Fab) in India (ICTFAB)-2021" RSC-IISER Desktop Seminar with Organic and Biomolecular Chemistry Indo-South Korea Joint Network Center for Environmental Cyber-Physical Systems- JNC Node1 International Conference on Advanced Materials and Mechanical Characterization (ICAMM) RSC ChemSci2021: Leader in the Field Symposium Three Day International E-Conference on Electrochemical Techniques and their Applications in the Development of Sensors (ETADS-2022) Indo-Norwegian International Online Conference on FARAON-2022	28th Oct, 2021 (virtual) 11th -13th Nov, 2021 (virtual) 15th -16th Nov, 2021 (virtual) 25th Nov, 2021 (virtual) 23rd -26th Nov, 2021 (virtual) 02- 04th Dec 2021 (virtual) 15th Dec, 2021 (virtual) 20th -22nd Jan, 2022 (virtual) 2nd – 4th Feb, 2022 (virtual)	NA
17.	Rohini Kumari	21011004	RSC-IISER Desktop Seminar with Journal of Material Chemistry A. HEALTH 2021 Virtual Conference on "Cancer Biology: Advances and Challenges". International Colloquium on Technology Readiness for High Volume Semiconductor Chip Manufacturing (Fab) in India (ICTFAB)-2021" RSC-IISER Desktop Seminar with Organic and Biomolecular Chemistry	28th Oct, 2021 (virtual) 11th -13th Nov, 2021 (virtual) 15th -16th Nov, 2021 (virtual) 25th Nov, 2021 (virtual)	NA

Sl. No.	Name of student	Roll no.	Conference/Seminar/Symposia/Workshop	Date & venue	Financial assistance from
			Indo-South Korea Joint Network Center for Environmental Cyber-Physical Systems- JNC Node1	23rd -26th Nov, 2021 (virtual)	
			International Conference on Advanced Materials and Mechanical Characterization (ICAMM)	02- 04th Dec 2021 (virtual)	
			RSC ChemSci2021: Leader in the Field Symposium	15th Dec, 2021 (virtual)	
			91st Annual Session & Symposium on 'Interface Between Biological and Physical Sciences Towards Atmanirbhar Bharat'	4th -6th Dec, 2021	NA
			Three Day International E-Conference on Electrochemical Techniques and their Applications in the Development of Sensors (ETADS-2022)	20th -22nd Jan, 2022 (virtual)	
			Indo-Norwegian International Online Conference on FARAON-2022	2nd – 4th Feb, 2022 (virtual)	
18.	Rahul Kumar	16011002	RSC-IISER Desktop Seminar with Journal of Material Chemistry A.	28th Oct, 2021 (virtual)	
			HEALTH 2021 Virtual Conference on "Cancer Biology: Advances and Challenges".	11th -13th Nov, 2021 (virtual)	
			International Online conference on Materials science & Technology (ICMT 2021)	12th -14th Nov, 2021 (virtual)	
			3rd Indian Materials Conclave (IndMac) and 32nd Annual General Meeting of MRSI	20th -23rd Dec, 2021 (virtual)	NA
			International Conference on Nanomaterials in Biology	2nd – 5th Feb, 2022	
			Biosangam 2022 International Conference on 'Emerging Trends in Biotechnology'	10th – 12th Mar, 2022 (virtual)	
19.	Rohit Rai	20011506	National Workshop on Solid Waste Management (IIT-Delhi)	30-31st July, 2021	NA
			Indian Nanoelectronics Users' Program (INUP-i2i 2021)	12-14th December, 2021	NA
			Online Webinar on Bio Start-ups	4th September 2021	
20.	Rahul Ranjan	19011001	National Workshop on Solid Waste Management (IIT-Delhi)	30-31st July, 2021	
			Indo-Korea International Workshop/ Technical virtual training on "Nanoparticle-Based Plasma Bioscience"	04th May 2021	
			International Virtual Workshop 'Bioelectronic Medicine'	December 16th , 2021 Virtual mode	
			Online Webinar on Bio Start-ups	4th September 2021	

Sl. No.	Name of student	Roll no.	Conference/Seminar/Symposia/Workshop	Date & venue	Financial assistance from
			National Conference on Computational and Biochemical Drug Discovery	11-12th September, 2021	NA
21.	Vikash Kumar	21011006	Indian Nanoelectronics Users' Program (INUP-i2i 2021) (online and offline mode)	12-14 December, 2021	NA
22.	Jyoti Rani	17011002	Workshop on Life Cycle Assessment (AZeotropy)	21st -22nd March-2022 (IIT Bombay)	NA
23.	Madhumita Priyadarsini	21011003	Workshop on Life Cycle Assessment (AZeotropy)	21st -22nd March-2022 (IIT Bombay)	NA
24.	Kailash Pati Pandey	21011005	Workshop on Life Cycle Assessment (AZeotropy)	21st -22nd March-2022 (IIT Bombay)	NA
25.	Jeetesh Kushwaha	21011007	Workshop on Life Cycle Assessment (AZeotropy)	21st -22nd March-2022 (IIT Bombay)	NA
26.	Saswata Acharya	20012002	Data Science Symposium (DSS), Shaastra, 2022	14th January 2022 (IIT Madras)	NA
27.	Santanu Singh	21011503	Conference	March 10-12th , 2022 MNIT, Allahabad	NA
28.	Kajal Kachhawaha	21011501	Conference	March 10-12th , 2022 MNIT, Allahabad	NA
29	Soumya Katiyar	19011009	3rd Indian Materials Conclave and 32nd Annual Meeting of MRSI National Conference on Computational and Biochemical Drug Discovery Biosangam 2022 International Conference on 'Emerging Trends in Biotechnology'	December 20-23rd 2021 September 11-12th 2021 March 10-12th , 2022 MNIT, Allahabad	NA

Names of students/scholars who got prizes and awards outside the Institute

Sl. No.	Name of student	Roll no.	Name of prize	Date & venue	Prize awarded by
1	Shikha Kumari	17011505	Best poster Award	March 10th -12th , 2022	MNIT, Allahabad
2	Kumari Prerna	18011009	Best Poster Presentation	November 11-13th, 2022	Deshbandhu College, Delhi University
3	Debanjan Kundu	18011003	N.N. SAHA MEMORIAL POSTER AWARD + 5000 INR Cash Prize	30th March-1st April, 2022	Indian Biophysical Society
4	Kshitij Sinha	18014008	IASc Summer Research Fellowship	26th June-28th August, 2021	Indian Academy of Science
5	Shweta Rawat	20011507	Best poster award	Dec 13-14th , 2021, NCL Singrauli	Northern Coalfield Ltd, Singrauli
6	Daphika S Dkhar	21011002	2nd prize in poster competition	22nd Jan, 2022	Madurai Kamraj University
7	Rohini Kumari	21011004	Nasi Swarna Jayanti Puraskar	6th Dec, 2021	NASI, Prayagraj
8	Rahul Kumar	16011002	Best presentation award	2nd - 5th Feb, 2022	Soft Material Research Society Jaipur

Names of Students/Scholars who went for foreign Internship

Sl. No.	Name of student	Roll No.	Name of the organization	Place of internship	Country	Duration
1	Ria Sonigara	18014011	IBIS, Universite Laval	Quebec, Canada	Canada	May 2021-August 2021 (online mode)

Faculty & their activities

Faculty and their areas of specialisation

Sl. No.	Name, Qualifications, Employee No.	Date of award of PhD degree	Major areas of specialization
Professors			
1	Pradeep Kumar Srivastava, (16831)	1998	Microbial Engg., Bioreactor Kinetics, Modelling & Scaleup, Downstream Processing, Recombinant Proteins, Drug Delivery Techniqu, Tissue Engineering and IPR & Technology Transfer
2	Dr. Vikash Kumar Dubey	2003	Biochemical Parasitology, Cell Death Pathways, Protein Aggregation and Misfolding
Associate Professors			
3	Dr. Abha Misra, PhD, (16830)	2001	Protein Chemistry, fermentation technology and Intellectual property rights (IPR).
Assistant Professors			
4	Dr. Vishal Mishra, PhD, (50064)	2012	Separation Process and Bioreactor Design
5	Dr. Sanjay Kumar, PhD, (50067)	2011	Biofuel research and bioprocess development of value added products
6	Dr. Pranjal Chandra, PhD, (50237)	2013	Bio-Physio Sensors, Nanobioengineering, Microfluidics, Healthcare Technologies, Material Engineering for Diverse Applications
7	Dr. Prodyut Dhar, PhD, 50249	2017	Biomaterials, Biodegradable Polymers, Biopolymers & Bionanotechnology,
8	Dr. Abhishek Suresh Dhoble, PhD, 50264	2016	Bio-CNG, Anaerobic Digestion, Microbiome, Agro-Food Studies, Cytomics
9	Sumit Kumar Singh, Ph.D. (50277)	2020	Mass spectrometry based glycoproteomics of mAbs and viruses, MD Simulations of protein glycosylation, Multi-Attribute method (MAM) for protein PTMs, protein structure-function relationship.

Short-term courses/workshops/seminars/symposia/conferences organised by faculty members

Sl. No.	Coordinator	Title	Period
1	Prof. Vikash Kumar Dubey	National Conference on Computational and Biochemical Drug Discovery	September 11th-12th, 2021
2	Dr. Prodyut Dhar & Dr. Abhishek Suresh Dhoble	Bio-Startups: The Journey from Idea to Reality	September 4, 2021

Short-term courses/workshops/seminars/symposia/conferences/training programmes attended by faculty members in academic institutions and public sector undertakings

Sl. No.	Name of faculty member	Title	Period and venue
Seminars/Symposia/Conferences			
1	Sanjay Kumar	Algal biofuel: importance and challenges	March 10-12, 2022 Biosangam-2022, MNNIT, Prayagraj, India.

Special lectures delivered by faculty members in other institutions

Sl. No.	Name of faculty member	Topic of lecture	Institution	Date
1	Dr. Pranjal Chandra	1. Bio / Nano Engineering aspects in Design and Development of Commercially Viable Sensor Systems 2. Nanobioengineering Approaches in Point-Of-Care and Personalized Diagnostics 3. Nanobioengineering Approaches in Bedside and In-vitro Diagnostics. 4. Nanobioengineered Diagnostic Technologies for Ultrasensitive Detection of Clinically Relevant Molecules. 5. Role of Research & Innovation for AatmaNirbhar Bharat 6. AatmaNirbhar Bharat: Research & Innovation for AatmaNirbhar Bharat 7. A Handheld optoelectronic Nanobiosensing Device for Point of Care Clinical Diagnostics. 8. Healthcare Sensing Technologies: Story from Idea to Commercial Products 9. Nanobioengineering Approaches in Point-Of-Care and Personalized Diagnostics Devices. 10. Nanoengineered surface comprising dendrite for biomolecular analysis in clinical perspective. 11. Nanoengineered Systems for Tracking Biomarkers in Miniaturized Settings 12. Science, Technology, and Its Protection Via Patents 13. Sensor-based Healthcare Devices: Design and Commercial Impact in India 14. Application of Biosensors 15. Biosensors: An intelligent Diagnostic Tool 16. 1Nansensors: Design and Implication in Agriculture 17. Three Dimensional Nanoengineered Materials for Molecular Sensing	Hansraj College, University of Delhi Ranjiv Gandhi Central University, Arunanchal Pradesh MNNIT, Allahabad NIT Calicut Shiksha Sanskriti Utthan Nyas (North-East) Shiksha Sanskriti Utthan Nyas (Maharashtra Unit) and Agnihotri School of Technology, Wardha, Maharashtra National Academy of Sciences, Prayagraj Rama University, Kanpur MRSI, IIT Madras National Academy of Sciences MNNIT Allahabad Shodh Prakalp (Assam) Shiksha Sanskriti Utthan Nyas Central University of Haryana Mahendergarh Rajiv Gandhi Proudyogiki Vishwavidyalaya (RGPV), Bhopal TECHNICAL FEST "PLEXUS'22" on 28 Jan' 2022 Shaheed Rajguru College of Applied Science For Women ,University of Delhi, India. NOIDA INSTITUTE OF ENGINEERING & TECHNOLOGY Madurai Kamaraj University, Tamil Nadu	3rd April 2021 14th July 2021 19th -25th July, 2021 4th – 8th August, 2021 25th Sept, 2021 7th Oct, 2021 4th - 6th Dec, 2021 7th Dec, 2021 20th – 23rd Dec, 2021 4th - 6th Dec, 2021 10th -12th March, 2022 28th Feb, 2022 11th Feb, 2022 28th Feb, 2022 28th Jan, 2022 20th -24th Jan, 2022 20th – 22nd Jan, 2022
2	Dr. Abhishek Suresh Dhoble	Knowledge Sharing Session on Biogas Technology	KBR Technology, Pune	07th Jnauary 2022
3	Dr. Sumit K. Singh	Case studies of mass spectrometry based characterization of biopharmaceutical products	IIT Delhi	December 2021
4	Dr. Sumit K. Singh	Characterization of primary structure and post-translational modifications of biopharmaceuticals	IIT Delhi	December 2021

Sl. No.	Name of faculty member	Topic of lecture	Institution	Date
5	Dr. Sumit K. Singh	Multivariate Data Analysis for Biotech Processes: Concepts and Case Studies	Institute of Engineering and Management, Kolkata	November 2021
6	Dr. Sumit K. Singh	Control of critical quality attributes of Biotherapeutics	IIT Delhi	April 2022
7	Dr. Prodyut Dhar	Biodegradable Polymers: Challenges and Sustainability issues	Parul University, Gujarat	November 2021
8.	Prof. Vikash Kumar Dubey	Concepts of Flowcytometry for Biomedical Research	NIPER Mohali Serb High-End Workshop 'Karyashala' On 'Flow Cytometry- Cell Death and Drug Discovery'	October 17th -23th , 2021 (
		NEP-2020 for knowledge based Indian Economy	Chaudhary Bansi Lal University, Bhiwandi	May 27, 2021
		National Education Technology Forum	Vidya Bharti Uccha Shiksha Sansthan	May 27, 2021
		Leishmania research: Promising Biochemical and Immunological results provides hope for the future.	**The National Academy of Sciences**, India, 91st Annual Session & Symposium on 'Interface Between Biological and Physical Sciences Towards Atmanirbhar Bharat'	4-6 December. 2021

Honours and awards

Sl. No.	Name of faculty member	Details of award
1	Prof. Vikash Kumar Dubey	Best Teacher Award-2021 of IIT (BHU), Varanasi
2	Dr. Pranjal Chandra	1. Listed by WORLD'S TOP 2% SCIENTIST by Stanford University, USA 2. Shakuntala Amir Chand Prize 2020" by the Indian Council of Medical Research (ICMR) 3. Selected as Member of the Indian National Young Academy of Sciences (INYAS), INSA. 4. Appointed as Advisor for the Biomedical Sensors Domain and Sensor Networks Systems at the Institution of Engineering and Technology (IET), Michael Faraday House, Six Hills Way, Stevenage, LONDON, United Kingdom

Fellowships of academic and professional societies

Sl. No.	Name of faculty member	Details of fellowship
1	Dr. Prodyut Dhar	Ramalingaswami Fellowship (BT/HRD/35/02/2006)

Books, monographs authored/co-authored

Sl. No.	Name of author/co-author	Title	Publisher
1	Timir Tripathi & Vikash Kumar Dubey (Editors)	Advances in Protein Molecular and Structural Biology, Methods	Academic Press (An imprint of Elsevier)
2	Singh V, Singh N, Yadav P, Mishra V*	Removal of Hexavalent Chromium from Aqueous Media Using Eco-Friendly and Cost-Effective Biological Methods. In In book: Biosorption for Wastewater Contaminants (pp.246-268). Book Chapter	Wiley, USA

Sl. No.	Name of author/co-author	Title	Publisher
3	Yadav P, Singh J, Srivastava DK, Mishra V*	Environmental Pollution and Sustainability. Chapter 6 - Environmental pollution and sustainability, Editor(s): Pardeep Singh, Pramit Verma, Daniela Perrotti, K.K. Srivastava, Environmental Sustainability and Economy, Book Chapter	Elsevier, USA
4	Singh V, Verma M, Singh N, Singh J, Kaur KP, Mishra V*	Advancement on Biomass Classification, Analytical Methods for Characterization, and Its Economic Importance In Bioenergy Research: Biomass Waste to Energy pp 249–272 Book Chapter	Springer, Singapore
5	S N Joshi and P Chandra (Editors)	Advanced Micro and Nano Manufacturing Technologies: Applications in Biochemical and Biomedical Engineering.	Springer, Singapore
6	V Borse, P Chandra and R Srivastava (Editors)	BioSensing, Theranostics, and Medical Devices: From Laboratory to Point-of-Care Testing.	Springer, Singapore
7	P Chandra and P S. Panesar (Editors)	Nanosensing and Bioanalytical Technologies in Food Quality Control	Springer, Singapore

Editorial boards of journals

Sl. No.	Name of faculty member	Position (editor/ member)	Name of journal
1	Dr. Sanjay Kumar	Editor	Systematic Bioscience and Engineering Universal Wiser Publisher, Singapore.
2	Dr. Pranjal Chandra	1. Associate Editor 2. Associate Editor 3. Editorial Board Member 4. Editorial Board Member 5. Editorial Board Member 6. Editorial Board Member 7. Editorial Board Member 8. Guest Editor	Frontiers in Bioengineering and Biotechnology Sensors International Scientific Reports PLOS ONE Frontiers in Sensors Material Science for Energy Technologies Green Analytical Chemistry MDPI- Molecules
3	Dr. Prodyut Dhar	Review Editor (Editorial Board of Sustainable Food Processing)	Frontiers in Sustainable Food Systems
4	Dr. Abhishek Suresh Dhoble	Review Editor (Editorial Board of Microbiotechnology)	Frontiers in Microbiology, Frontiers in Bioengineering and Biotechnology and Frontiers in Environmental Science (speciality sections)

Design and Development Activities New facilities added

Sl. No.	Details (Infrastructure, equipment, etc.)	Value (in lakhs of rupees)
1	Flow Cytometer	Rs. 26.25
2	-80 deep freezer	Rs. 10.6 lakh
3	NanoDrop™ OneC Microvolume UV-Vis Spectrophotometer	Rs 8.71 lakh
4	CO_2 Incubator	Rs 6.3 lakh
5	Miniaturized Biosensing Device	Rs. 4.9 lakh
6	Two-Stage Anaerobic Digestion Set-up	Rs 4.50 lakh
7	Biosafety Cabinet	Rs 2.3 lakh

Sl. No.	Details (Infrastructure, equipment, etc.)	Value (in lakhs of rupees)
8	Liquid Nitrogen tank	Rs 0.80 lakh
9	-20 deep freezer	Rs 0.80 lakh
10	Texture analyser	Rs. 9.38

Patents filed

Sl. No.	Name of faculty member	Title of patent
1	Dr. Abha Mishra	Synthesis of gedunin as potential antidote against snake venom; 395223; Granted
2	Dr. Pranjal Chandra	A portable colorimetry sensing device for point of care diagnostics (Indian Patent Application No.: 202111046586: 2021-10-12)
3	Dr. Prodyut Dhar	Dhar P and H Kamitakahara, "Preparation method of high-strength transparent wood-based material by inorganic compounding" (Japanese Patent, Application No. 2021-135712, Filed)

Research and Consultancy

Sponsored research projects)

Sl. No.	Title	Period	Funding agency	Amount (in lakhs of Rs.)	Project P.I
1	Validation of glutathione synthetase from *Leishmania donovani* as new drug target for discovery of new drug candidate	2021-2024	ICMR	41.42 lakh	Prof. Vikash Kumar Dubey
2	How Beclin 1 mediates cross-talk between apoptosis and autophagy via its C- terminal fragment?	2019-2022	CSIR	32.61 lakh	Prof. Vikash Kumar Dubey
3	Human IL-2 fused leishmanial trypanothione synthetase (TS) as protein vaccine candidates.	2021-2024	ICMR	15.38 lakh per years	Prof. Vikash Kumar Dubey
4	Re-purposing of approved drugs from Drug Bank database for possible treatment for COVID-19 by targeting SARS-CoV-2 main purpose	2020-2021 Extended till 19.12.2021	SERB	1544664	Prof. Vikash Kumar Dubey
5	Integrated computational and experimental studies to potential therapy of kala-azar targeting Dephosphocoenzyme A Kinase (LdDPCK) of the pathogen as a target	2 Years	I-DAPT, IIT(BHU)	2000000.00	Prod. Vikash Kumar Dubey
6	Design and Validation of Field Deployable Miniaturized Nano-Bio-Sensing System for Detection of the Parasitic Liver Fluke Fasciola gigantica	2021-2024	ICMR	45. 37 lakh	Dr. Pranjal Chandra
7	Development of bi-functional electrochemical nanobiosensor for bacterial exotoxin detection: Implication towards screening of toxin-producing bacterial isolates	2020 – onward in IIT BHU	DST	38.00 lakh	Dr. Pranjal Chandra
8	Bioengineering of Living Materials to fabricate Functionalized Bacterial Nanocellulose for High-Performance Applications	2021-26	DBT	Rs 42.50 lakh	Dr. Prodyut Dhar
9	Characterization of Indigenous Cow's Dung and Urine for Scientific Advancement and Development of Utility Items	2021-24	Department of Science and Technology (DST), Govt. of India	Rs. 31.04 Lakh	Dr. Abhishek Suresh Dhoble

Sl. No.	Title	Period	Funding agency	Amount (in lakhs of Rs.)	Project P.I
10	Flow and segregation of granular materials out of hoppers and two & three dimensional devices	3 Years	CST-UP	1044000	Dr. Vishal Mishra
11	Targeted drug delivery of methotrexate/ gallic acid- folate conjugated Poly L-Lysine nanoparticles	3 years	DBT	3461200	Dr. Abha Mishra

Research publications

Total number of papers published in refereed National journals	Nil
Total number of papers published in refereed International journals	53
Total number of papers presented in National conferences	Nil
Total number of papers presented in International conferences	Nil

Refereed International journals

1. Yadav N. and Srivastava P. (2022) Study on Gelatin/Hydroxyapatite/Chitosan Material Modified with Osteoblast for Bone Bioengineering. Arab J Sci Eng 47, 165–178.

2. Dixit R., Chaudhary N.K., Mishra P.K. (2022) Study on Blood Serum Levels of Heavy and Trace Metals in Chronic Non-Healing Wounds. The International Journal of Lower Extremity Wounds.

3. Sinha R., Anand A., Singh D., Tripathi S., Shukla P., Singh S., Srivastava P (2022) Bioprocessing strategies for microbial production and purification of immunosuppressants: An insight for process intensification, Chemical Engineering and Processing - Process Intensification, 172: 108797, ISSN 0255-2701.

4. Singh B.N., Nallakumarasamy A., Sinha S., Rastogi A., Mallick S.P., Singh D., Srivastava P. (2022) Generation of hybrid tissue engineered construct through embedding autologous chondrocyte loaded platelet rich plasma/ alginate based hydrogel in porous scaffold for cartilage regeneration, International Journal of Biological Macromolecules, 203: 389-405, ISSN 0141-8130.

5. Anand A., Mallick S.P., Chandel I.S., Singh B.N., Srivastava P. (2021) Evaluation of chondrocyte culture in novel airlift bioreactor using Computational Fluid Dynamics (CFD) tools." International journal of biomedical engineering and technology, IJBET-306365.

6. Rai H., Barik A., Singh Y.P., Suresh A., Singh L., Singh G., Nayak U.Y., Dubey V.K. and Modi G. (2021) Molecular docking, binding mode analysis, molecular dynamics, and prediction of ADMET/Toxicity properties of selective potential antiviral agents against SARS-CoV-2 main protease: An effort towards drug repurposing to combat COVID-19. Molecular Diversity. 25(3):1905-1927.

7. Borkotoky S., Banerjee M., Modi G.P., Dubey V.K. (2021) Identification of high affinity and low molecular alternatives of boceprevir against SARS-CoV-2 main protease: a virtual screening approach. Chemical Physics Letters. 770:138446

8. Gupta M.K., Kumara S.S., Chiranjivi A.C., Banik K., Girisa S., Kunnumakkara A.K., Dubey V.K., Rangan L. (2021) Antioxidant, anti-tyrosinase and anti-inflammatory activities of 3,5-dihydroxy-4′,7-dimethoxyflavone isolated from the leaves of Alpinia nigra. Phytomedicine Plus, 1(3), 100097

9. Kundu D. and Dubey V.K. (2021) Potential alternatives to current cholinesterase inhibitors: An in silico drug repurposing approach. Drug Development and Industrial Pharmacy; Taylor and Francis, 919-930

10. Gupta M.K., Chiranjivi A.C., Dutta T., Dubey V.K. and Rangan L. (2022) Synthesis and characterization of zinc derivatized 3, 5-dihydroxy 4′, 7-dimethoxyflavone and its anti-leishmaniasis activity against Leishmania donovani. BioMetals, 35, 285–30

11. Prakash A., Borkotoky S., Dubey V.K. (2022) Targeting two potential sites of SARS-CoV-2 main protease through computational drug repurposing. Journal of Biomolecular Structure and Dynamics, Taylor and Francis, 1-11.

12. Prerna K. and Dubey V.K. (2022) Beclin1-mediated interplay between autophagy and apoptosis: new understanding. International Journal of Biological Macromolecules. 204, 15 258-273.

13. Singh A. and Mishra A., (2022) Investigation of Molecular Mechanism Leading to Gefitinib and Osimertinib Resistance Against EGFR tyrosine Kinase: Molecular Dynamics and Binding Free Energy Calculation, Journal of Biomolecular Structure and Dynamics, 1-15.

14. Singh A. and Mishra A., (2022) Investigation of Molecular Mechanism Leading to Gefitinib and Osimertinib Resistance Against EGFR tyrosine Kinase: Molecular Dynamics and Binding Free Energy Calculation, Journal of Biomolecular Structure and Dynamics

15. Vishvakarma R., and Mishra A. (2022) Characterization of A Novel Protease Inhibitor from the Edible Mushroom *Agaricus Bisporus*. Protein and Peptide Letters.

16. Bhatnagar A., Saini R., Dagar P. Mishra A. (2022) Molecular modelling and in vitro studies of Daruharidra as a potent alpha-amylase Inhibitor, Journal of Biomolecular Structure and Dynamics, Pages: 1-12

17. Singh A., Saini R., and Mishra A. (2022) Novel allosteric inhibitor to target drug resistance in EGFR mutant: molecular modelling and free energy approach, Molecular Simulation, Taylor and Francis 801-811

18. Sharma D. and Mishra A. (2022) Natural Phytocompounds Physalin D, Withaferin A and Withanone target L-asparaginase of Mycobacterium tuberculosis: A molecular dynamics study, Journal of Biomolecular Structure and Dynamics, 1-15

19. Sharma D. and Mishra A. (2021) L-asparaginase production in solid-state fermentation using Aspergillus niger: process modeling by artificial neural network approach, Preparative Biochemistry & Biotechnology 1-12

20. Dagar P. and Mishra A. (2021) Molecular docking analysis of modified gedunin from neem with snake venom enzymes, Bioinformation 17(9): 776-783.

21. Choudhary D.K., Chaturvedi N., Singh A., Mishra A. (2021) Catechin isolated from faba beans (Vicia faba L.): insights from oxidative stress and hypoglycemic effect in yeast cells through confocal microscopy, flow cytometry, and in silico strategy, Journal of Biomolecular Structure and Dynamics, 1-11

22. Singh V. and Mishra V. (2022) A review on the current application of light-emitting diodes for microalgae cultivation and its fiscal analysis. Critical Reviews in Biotechnology

23. Singh V., and Mishra V. (2022) Evaluation of the effects of input variables on the growth of two microalgae classes during wastewater treatment. Water Research, 213, 118165.

24. Singh J., Sharma P., and Mishra V. (2022) Simultaneous removal of copper, nickel and zinc ions from aqueous phase by using mould. International Journal of Environmental Science and Technology, 1-14

25. Nalli Y.K., Guru S.K., Jain P., Mishra V., Jain S.K. (2022) Bioassay-Guided Fractionation and Dereplication Studies of Sesame oil: Isolation of 8-Acetoxypinoresinol as an Anti-Proliferative Metabolite and Prediction of Target. Proceedings of the National Academy of Sciences, India Section B: Biological Sciences, 1-7

26. Shamim A., Tripathi G., Ansari J.A., Mahfooz S., Mahdi A.A., Khan A.R., Mishra V. (2022) Effect of pH on aluminum uptake and differential aluminum tolerance in cyanobacterial strains: A bioresource for agricultural and environmental sustainability. Bioresource Technology Reports, 18, 100999

27. Verma M., Verma M.K., Singh V., Singh J., Singh V., and Mishra V. (2022) Advancements in applicability of microbial fuel cell for energy recovery from human waste. Bioresource Technology Reports, 100978

28. Singh V. and Mishra V. (2022) Sustainable reduction of Cr (VI) and its elemental mapping on chitosan coated citrus limetta peels biomass in synthetic wastewater. Separation Science and Technology, 57(10), 1609-162

29. Singh V. and Mishra V. (2021). Microbial removal of Cr (VI) by a new bacterial strain isolated from the site contaminated with coal mine effluents. Journal of Environmental Chemical Engineering, 9(5), 106279

30. Singh V. and Mishra V. (2021) Exploring the effects of different combinations of predictor variables for the treatment of wastewater by microalgae and biomass production. Biochemical Engineering Journal, 174, 108129

31. Verma M. and Mishra V. (2021) Recent trends in upgrading the performance of yeast as electrode biocatalyst in microbial fuel cells. Chemosphere, 284, 131383s

32. Singh V. and Mishra V. (2021) Environmental impacts of coronavirus disease 2019 (COVID-19). Bioresource Technology Reports, 15, 100744

33. Pandey A., Srivastava S., Kumar S. (2022) Scenedesmus sp. ASK22 cultivation using simulated dairy wastewater for nutrient sequestration and biofuel production: insight into fuel properties and their blends. Biomass Conversion and Biorefinery. 1-13.

34. Rawat S. and Kumar S. (2021) Critical review on processing technologies and economic aspect of bio-coal briquette production. Preparative Biochemistry and Biotechnology. 1-17.

35. Yadav I., Rautela A., Kumar S. (2021) Approaches in the photosynthetic production of sustainable fuels by cyanobacteria using tools of synthetic biology. World Journal of Microbiology and Biotechnology. 37(12):1-17.

36. Kesari V., Kumar S., Yadav I., Chatterjee A., Rai S., Pandey S. (2021) Ganga River water quality assessment using combined approaches: physico-chemical parameters and cyanobacterial toxicity detection with special reference to microcystins and molecular characterization of microcystin synthetase (mcy) genes carrying cyanobacteria. Environmental Science and Pollution Research. 29:13122–13140.

37. Das P.K. and Kumar S. (2022) Cost-benefit analysis of third-generation biofuels. Eduardo Jacob-Lopes (ed.), 3rd Generation Biofuels: Disruptive Technologies to Enable Commercial Production. Elsevier.

38. Rautela A. and Kumar S. (2021) Engineered Microorganisms for Production of Biocommodities. Biomolecular Engineering Solutions for Renewable Specialty Chemicals: Microorganisms, Products, and Processes. Elsevier 1-48.

39. Pandey A., Kant G., Afzal S., Singh M.P., Singh N.K., Kumar S., Srivastava S. (2022). Genetic manipulation of microalgae for enhanced biotechnological applications. Handbook of Algal Biofuels. 97-122.

40. Shanbhag M.M., Ilager D., Mahapatra S., Shetti NP., Chandra P. (2021) Amberlite XAD-4 Based Electrochemical Sensor for Diclofenac Detection in Urine and Commercial Tablets. Materials Chemistry and Physics, 273, 125044.

41. Divya, Mahapatra S., Srivastava VR, Chandra P. (2021) Nanobioengineered Sensing Technologies Based on Cellulose Matrices for Detection of Small Molecules, Macromolecules, and Cells. Biosensors (Basel), 11 (6), 168.

42. Killedar L.S., Shanbhag M.M., Malode S., Bagihalli G.B., Mahapatra S., Shetti N.P., Chandra P. (2022) Ultra-sensitive Detection of Tizanidine in Commercial Tablets and Urine Samples Using Zinc Oxide Coated Glassy Carbon Electrode. Microchemical Journal, 172, 106956.

43. Sammi A., Divya, Mahapatra S., Kumar R., Chandra P. (2022) Nano-Bio-Engineered Silk Matrix-based Sensing Devices for Molecular Bioanalysis. Biotechnology and Bioengineering, 119(3), 784-806.

44. Divya, Dkhar D.S., Kumari R., Mahapatra R., Kumar R., Chandra P. (2022) Ultrasensitive Aptasensors for the Detection of Viruses Based on Opto-Electrochemical Readout Systems. Biosensors (Basel), 12(2),81.

45. Sarma U., Chandra P., Joshi S.N. (2022). Advanced Microchannel Fabrication Technologies for Biomedical Devices. Advanced Micro and Nano-manufacturing Technologies,127-143.

46. Azad U.P., Mahapatra S., Divya, Srivastava A., Shetti N.P., Chandra P. (2022) Electrochemical Biosensors for Monitoring of Bioorganic and Inorganic Chemical Pollutants in Biological and Environmental Matrices. Microbial Biodegradation and Bioremediation, 509-531.

47. Saini A., Panwar A., Panesar P.S., Chandra P. (2022) Potential of Nanotechnology in Food Analysis and Quality Improvement. Nanosensing and Bioanalytical Technologies in Food Quality Control, 169-194.

48. Vishwakarma N.K., Chaurasia P., Chandra P., Mahto S.K. (2022). Microfluidics Devices as Miniaturized Analytical Modules for Cancer Diagnosis. CRC Press, Taylor & Francis, 978-100-30-3347-9.

49. Bhorkar I. and Dhoble A.S. (2021) Advances in the synthesis and application of self-assembling biomaterials. Progress in Biophysics & Molecular Biology. 167: 46-62.

50. Singh S.K., Kumar D., Nagpal S., Dubey S.K., Rathore A.S. (2022) A charge variant of bevacizumab offers enhanced FcRn-dependent pharmacokinetic half-life and efficacy. Pharmaceutical Research: 1-15.

51. Singh S.K. and Lee K.H. (2021) Characterization of monoclonal antibody glycan heterogeneity using hydrophilic interaction liquid chromatography-mass spectrometry. Frontiers in Bioengineering and Biotechnology. 9: 805788.

52. Dash R., Singh S.K., Chirmule N., Rathore A.S. (2021). Assessment of functional characterization and comparability of biotherapeutics: A review. The AAPS Journal. 24(1), 1-11.

53. Dhar P, K Sugimura, M Yoshioka, A Yoshinaga, H Kamitakahara (2021) Fabrication of wood-inspired high-performance composites through fermentation routes, Cellulose, 1-21.

19.School of Biomedical Engineering

Full Name of School: School of Biomedical Engineering

Year of Establishment: 1985

Coordinator of the School: Dr. Sanjeev Kumar Mahto w.e.f. 01-03.2022

Brief introduction of the Department/School:

Biomedical Engineering (BME) is a most interdisciplinary and frontier technology field, endeavoring to converge the three uniquely divergent scientific fields: Biology, Engineering, and Medicine. The School of Biomedical Engineering is involved in Teaching, Outreach, Research, Translation, and Entrepreneurship, in collaboration with the Institute of Medical Sciences (BHU), Tata Cancer Centre (BHU campus), in-campus Innovation centre, and other Departments of IIT(BHU). The School has been a pioneer of nation-building in the BME sector for about 40 years, being set up by UGC during the 5th Five Year Plan in 1978, with a regular faculty appointment in 1985.

The school runs the following programs:

1. a five-year Integrated Dual Degree (IDD) program that conjointly offers BTech in Biengineering and M.Tech in Biomedical Technology.
2. a two-year M.Tech program in Biomedical Engineering.
3. a rigorous Ph.D. program, both for young scholars as well as QIP-based engineering college teachers.
4. intensive research setting for Post-Doctoral Fellows and Faculty Fellows (as 'Inspire' candidates).

The Banaras Hindu University ecosystem is a seminal paradigm of an Institute of Technology and an Institute of Medical Sciences thriving on the same campus. This results in excellent collaborative work in Healthcare Technologies and Medically-oriented product or process development, Incubation of start-ups, and innovative entrepreneurship.

Major areas of Research

- Biomedical signal and image processing
- Brain-Computer Interfacing based on Motor Imagery and Visual Evoked Potential.
- Stem cell therapy, Tissue engineering, and Regenerative medicine
- Nanocomposites and Bio-devices
- Stem cell technology, Tissue engineering, and Regenerative medicine,
- Bio microfluidics, Neuro engineering, and Nanotoxicology
- BioMEMS and Biosensors.
- Brain Circulation, Autoregulation, Its Disturbance, and Neuroprotection
- Design and fabrication of low cost diagnostic and therapeutic instruments
- Functionally graded materials & conducting IPN composites and their medical application
- Control system modelling, analysis and simulation in health and diseases.
- Molecular pathogenesis and nanomedicine-based therapeutics for infectious diseases
- Computational Biomechanics (Design and modelling of Orthopaedics implants: Hip Joint, Knee Joint, Spine spacers, Bone Plates, and Screws, Dental implants).
- Cardiovascular Blood flow dynamics study, Stent and Heart valve design and development; FEA/CFD Simulation). Energy harvesting for biomedical applications.
- Improved Cancer Diagnostics, Radiation Oncology, and Chemotherapy enhancement.
- Neurotechnology, Brain Research, Cognitive Science, and Affordable Mental Health Care.

- Neurorehabilitation and Assistive Technology
- Neuromorphic Tactile Sensing for Robotic applications
- Developmental Psychology, Neuro-Informatics.

Area of the Department/School (in square meters):

Infrastructure

S. No.	Particulars	Number
1	No. of classrooms	03
2	No. of lecture halls	00
3	No. of laboratory	09
4	No. of computers available for students in the Department/School	20

Unique Achievement / Preposition of the Department/School

Academic programmes offered

New Courses Introduced

S. No.	Course code	Course name	Course credits
1	BM-322	Introduction to Neuro and Cognitive Technology	9

Students on Roll

S. No.	Programme	I Year	II Year	III Year	IV Year	V Year & above
1.	B. Tech/B. Arch					
2.	Dual Degree	20	13	12	13	15
3.	M. Tech/ M. Pharm	4	7			
4.	Ph. D (Under Institute Fellowship)	28				
5.	Ph. D (Under Project Fellowship)	03				
6.	Ph. D (Under Sponsored Category)	17 {10 (External Fellow) + 6 (QIP) + 1 (Part Time_ Institute Staff)}				

Names of students/scholars who attended conferences/ workshops/seminars and symposia abroad or in India

Sl. No.	Name of student	Roll no.	Conference/Seminar/Symposia/ Workshop	Date & venue	Financial assistance from
India					
1	Pooja Kumari	19021011	Workshop- Organized by ICT, Mumbai.	27-29 Jan 2022(Online)	DST-INSPIRE
2	Richa Singh	19021501	Workshop- Organized by ICT, Mumbai.	27-29 Jan 2022(Online	CSIR-UGC
3	Parul Chaurasia	19021005	Workshop- Organized by ICT, Mumbai	27-29 Jan 2022(Online	MHRD
4	Sushmitha P	21021004	Workshop- Organized by ICT, Mumbai	27-29 Jan 2022(Online)	DST-SERB
5	Narayan Yadav	21021504	Workshop "Multi colour flow cytometry" DPSRU, New Delhi.	30th- 31th March, 2022(Online)	UP-CST
6	Richa Singh	19021501	Poster Presentation Research and Industrial Conclave IIT Guwahati	20-23 Jan 2022 (Online)	CSIR-UGC
7.	Neeraj Sharma	19021001	Poster Presentation Research and Industrial Conclave IIT Guwahati	20-23 Jan 2022 (Online)	MHRD

Sl. No.	Name of student	Roll no.	Conference/Seminar/Symposia/ Workshop	Date & venue	Financial assistance from
8.	Neeraj Sharma	19021001	Paper Presentation in SRC IIT Kanpur	6th March (Online)	MHRD
9.	Neeraj Sharma	19021001	Paper Presentation in Chem plus IIT Madras	13th March (Online)	MHRD
10	Pankaj Kumar Jain	17021504	Data Science Symposium "Shaastra 2022", IIT Madras	15-01-2022	Not Applicable
11	Pankaj Kumar Jain	17021504	Data Science Symposium "Shaastra 2022", IIT Madras	14-01-2022	Not Applicable
12	Pankaj Kumar Jain	17021504	Student Research Convention 2022 IIT Kanpur	06-03-2022	Not Applicable
13	Sumit Tripathi	17021003	International Conference on Smart Computing and Communication (IEEE-ICSSC 2021).	01-07-2021	Not Applicable
14	Dinesh Beer Vickram Singh	18021502	Cisco ThingQubator Workshop	April-Dec 2021	Not Applicable
15	Pratik Purohit	17021501	Annual Conference of National Academy of Medical Sciences, India	IMS, BHU, Varanasi. Nov 26-28, 2022	IIT (BHU)
16	Ranjitha Ruttala	20022004	Students Research Conference	IIT, Kanpur. 4-6 Mar 2022	IIT (BHU)
17	Brijesh Baghel	19021002	Annual Conference of National Academy of Medical Sciences, India	IMS, BHU, Varanasi. Nov 26-28, 2022	IIT (BHU)
18	Bindu Kumari	17021508	In-Silico Drug Designing Workshop Using Network Pharmacology Approach.	IIIT-Allahabad. 18-19 Sep, 2022	IIT (BHU)
19	Brijesh Baghel	19021002	Students Research Conference	IIT, Kanpur. 4-6 Mar 2022	IIT (BHU)
Abroad					
1	Pooja Kumari	19021011	Workshop "Neurobiology of Pain and itch"	29June -03 July, 2021(Online)	DST-INSPIRE
2	Richa Singh	19021501	Workshop ''Humanizing the Drug Discovery and Development Process with Organs-on-Chips"	9 March 2022	CSIR-UGC
3	Pratik Purohit	17021501	Neuroimaging and Data science: Neuro-hackademy online-2021	University of Washington eScience Institute, Seattle, USA, July 19-30, 2022	Not needed
4	Anindita Bhattacharjee	18021003	Computational Neuroscience online Summer School	5-23 July 2022. Neuro-match Academy, University of Pennsylvania USA	Not needed
5	Pratik Purohit	17021501	Computational Neuroscience online Summer School	5-23 July 2022. Neuro-match Academy, University of Pennsylvania USA	Not needed

Names of students/scholars who got prizes and awards outside the Institute

Sl. No.	Name of student	Roll no.	Name of prize	Date & venue	Prize awarded by
1	Pooja Kumari	19021011	Best Poster Presentation	27-29 Jan 2022(Online)	ICT, Mumbai.
2	Pankaj Kumar Jain	17021504	2nd Rank (Oral Presentation)	15-01-2022	Data Science Symposium "Shaastra 2022", IIT Madras

Sl. No.	Name of student	Roll no.	Name of prize	Date & venue	Prize awarded by
3	Pankaj Kumar Jain	17021504	2nd Rank (3-minute Thesis presentation)	14-01-2022	Data Science Symposium "Shaastra 2022", IIT Madras
4	Pankaj Kumar Jain	17021504	1st Rank (Oral presentation)	06-03-2022	Student Research Convention 2022 IIT Kanpur
5	Pratik Purohit	17021501	Lead Teaching Assistantship at Computational Neuroscience online Summer School	5-23 July 2022. Neuro-match Academy, University of Pennsylvania, USA	Neuromatch Academy, University of Pennsylvania, USA
6	Anindita Bhattacharjee	18021003	Teaching Assistantship at Computational Neuroscience online Summer School	5-23 July 2022. Neuro-match Academy, University of Pennsylvania, USA	Neuro-match Academy, University of Pennsylvania, USA
7	Ranjitha Ruttala	20022004	First Prinze in 3 minute Thesis presentation	Students Research Conference, IIT Kanpur, 4-6 Mar 2022	IIT Kanpur
8	Bindu Kumari	17021508	Second Prize at Workshop Quiz at In-Silico Drug Designing Workshop Using Network Pharmacology Approach.	IIIT-Allahabad. 18-19 Sep, 2022	IIIT-Allahabad.
9	Brijesh Baghel	19021002	Third Prinze in 3 minute Thesis presentation	Students Research Conference, IIT Kanpur, 4-6 Mar 2022	IIT Kanpur
10	Pratik Purohit	17021501	Best Presentation Award.	NAMSCON, Nov 27, 2021, IMS, BHU.	National Academy of Medical Sciences, New Delhi.
11	Pratik Purohit	17021501	Lead Teaching Assistantship at Computational Neuroscience online Summer School	5-23 July 2022. Neuro-match Academy, University of Pennsylvania, USA	Neuro-match Academy, University of Pennsylvania, USA

Names of scholars/students who won convocation/Institute day prizes

Sl. No.	Name of Student	Roll No.	Name of prize	Prize awarded by
1	Sourav Chowdhury	19022006	Gold Medal (First in MTech course of Biomedical Engg.)	IIT (BHU)
2	Pradyumn Agarwal	16024011	Gold Medal (First in IDD course of Biomedical Engg.)	IIT (BHU)

Names of Students/Scholars who went for foreign Internship

Sl. No.	Name of student	Roll No.	Name of the organization	Place of internship	Country	Duration
1	Gokul Manoj	18024005	University of Washington	Seattle	USA	Seven weeks

Faculty & their activities

Faculty and their areas of specialisation

Sl. No.	Name, Qualifications, Employee No.	Date of award of PhD degree	Major areas of specialization
Professors			
1	Neeraj Sharma, Ph.D. M. Tech. B. Tech., Employee no. 16812	2009	Bio instrumentation, Biomedical Signal and Image Processing.
2	Prasun K. Roy, MBBS, FRSM, PhD. Employee No. 50143	2003	Neuroscience, Brain research, Cognitive Science, Mental Health
Associate Professors			
1	Dr Shiru Sharma, Ph.D, Employee No. 16829	2009	Biological control system, Mathematical modeling of biological system, Bio-instrumentation, Development of prosthetic devices, BCI
2	Dr. Sanjay Kumar Rai, Ph.D, Employee No. 18117	1998	Biomechanics, Biomaterials, Cardiovascular Biomechanics,Orthopaedic and Dental Implants.
3	Dr Marshal, Ph.D, Employee No. 50142	2004	Biomaterials Engineering and Biosensors,
4	Dr. Pradip Paik, Ph.D, Employee No. 50168	2008	Materials for Health Care and Therapeutic Applications, Cancer therapy, Nano-Vaccination, Nano-Immunology, Tissue Engineering and regenerative medicine, Polymer based Antibacterial Effects, antimicrobial nanomedicine.
5	Dr. Sanjeev Kumar Mahto, Ph.D, Employee No. 19842	2011	Tissue Engineering, Biofabrication, Biomicrofluidics, Lab-on-a-Chip
Assistant Professors			
1	Dr. Jac Fredo, Ph.D, Employee No. 50253	2016	Bio-Medical Signal and Image Processing, Bio-Medical Instrumentation, Computational Neuroscience, Developmental Psychology, Neuro-Informatics, Machine Learning, Composite Science
2	Dr. Deepesh Kumar, Ph.D, Employee No. 50275	2018	Neurorehabilitation engineering, Neuromorphic sensing, and Machine Learning, Biomedical Signal Processing

Technical and Non-Teaching Staff

Sl. No.	Name, Qualifications	Designation, Employee No.	Date of appointment in the department
1.	Mr. Bhuwaneshwari Sharan, Intermediate (Science)	Sr. Technical Superintendent	06.06.1988
2.	Dr. Anuj Srivastava, D.M.L.T., B.Sc. MLT, M.Sc. (Microbiology), Ph.D	Jr. Technical Superintendent	06.08.2008
3.	Mr. Bharat Kumar Vishwakarma, B.Sc., B.Ed., P.G.D.C.A.	Senior Technician	12.07.2012
4.	Mr. Divyanshu Singh, M.A. (Journalism & Mass Communication), D.C.A. (Diploma in Computer Application)	Junior Assistant	20.05.2017
5.	Mr. Vipin Kumar Verma, B.Tech (Electronics & Communication Engg.)	Junior Assistant	01.08.2017

Special lectures delivered by faculty members in other institutions

Sl. No.	Name of faculty member	Topic of lecture	Institution	Date
1	Dr. Deepesh Kumar	Neurosignal Processing and Sensor	IITM Gwalior	16/02/2022
2	Sanjeev Kumar Mahto	Participated and delivered lectures in "Motivational Lecture and Science Camp Under Outreach Activity of INYAS (Indian National Young Academy of Science)"	Sarvodaya Vidyalaya Semrajpur, Ratanpura, Mau, Uttar Pradesh	Dec. 18, 2021

Sl. No.	Name of faculty member	Topic of lecture	Institution	Date
3	Sanjeev Kumar Mahto	Green electrospun nanofibers as a wound dressing	Coalesce Research Group, USA,	19-11-2021
4	Sanjeev Kumar Mahto	Development of Microfluidic and Bioelectronic Devices for Monitoring Behavior of Primary Cortical Neuronal Cells	In a 35th Annual Conference of Society for Neurochemistry 2021, India	04-12-2021
5	Shiru Sharma	Role of Mathematical Modelling and Simulation in Physiological System	Faculty Development Program on "Application of Computers in Biology" organized by Galgotias University	June 11, 2021
6	Prof. Neeraj Sharma	Design and development of prosthetic devices and AI based control strategies, Keynote Lecture	NIT Raipur.	13-2-2022
7	Prof. Neeraj Sharma	Artificial Intelligence and its Application to Biomedical Engineering, Keynote Lecture.	NIT Patna.	23-12-2021
8	Prof. Neeraj Sharma	Application of optimization in the area of biomedical engineering	Narayanamma Institute of Technology and Science, Hyderabad - Telangana	29-12-2021
9	Prof. Neeraj Sharma	Role of AI and challenges in healthcare	Shri Shankracharta Technical Campus Bhilai	10-12-2021
10	Prof. Neeraj Sharma	Issues in Biomedical signal Processing	Galgotias University, Noida	7-6-2021
11	Prof. Neeraj Sharma	Biomedical Image Processing	Galgotias University, Noida.	8-6-2021
12	Dr. Pradip Paik	Polymer Nanoparticles and its stability and Life Time,	CIPET: CSTS-Guwahati,Assam	22-3-2022
13	Dr. Pradip Paik	Core-shell polymer Nano particles for the Drug Delivery Applications"	CIPET: CSTS- Guwahati, Assam	2-8-2021
14	Dr. Pradip Paik	Prospective of nanomedicines,	Belure, Ramakrishna, Mission Residential College, Narendrapur, Kolkata	26-11-2021
15	Dr. Pradip Paik	Scope of the Functional Polymeric Nanocapsules for the Drug Delivery Applications, Faculty Development Programme(FDP) on "Polymer matrix based nanostructures for targeted drug delivery application"	CIPET: CSTS-Guwahati,Assam	2-8-2021 to 6-8-2021
16	Prof. Prasun K Roy	Utilizing the 4-D Spatio-temporal Architecture of Human Brain for Protecting the Ageing Mind (Keynote Lecture)	IEEE Kolkata Chapter, Institute of Technology & Management, Kolkata. (International Conference on Interdisciplinary Research in Technology & Management)	25.2.22
17	Prof. Prasun K Roy	Scalar, Vector & Tensor Imaging for Diagnosis & Treatment: Application of Radiology & Radiomics to Personalized Medicine (Keynote Lecture)	NIT, Jamshedpur (Program on "Precision Health Technology", AICTE)	8.8.21
18	Prof. Prasun K Roy	Computed Tensor Imaging of Human Brain: Future of Personalized Medicine via MRI	Faculty Development Program on "Application of Computers in Biology", AICTE, Noida	7.6.21

Visits abroad by faculty members

Sl. No.	Name of faculty member	Country visited	Date of leaving India	Date of returning India	Purpose of visit	Funding from
1	Dr. Jac Fredo	Germany	02/12/2021	29/12/2021	Lab visit	IIT (BHU)

Honours and awards

Sl. No.	Name of faculty member	Details of award
1	Sanjeev Kumar Mahto	Best Teacher Award (2021), IIT BHU
2	Pradip Paik	Selected Life Member of "***The National Academy of Science, India***"(NASI), July 2021 in Life Sciences
3.	Prof. Prasun K. Roy	National Academy of Sciences, India, 2022: Executive Council Membership,.
4.	Prof. Prasun K. Roy	Office of Principal Science Adviser, Govt. of India: Program group membership, Brain Map Project (Indian Human Brain Project).

Books, monographs authored/co-authored

Sl. No.	Name of author/co-author	Title	Publisher
1	Abirami S, John Thomas, Rajamanickam Yuvaraj, & **AR Jac Fredo.**	Chapter title: "A comparative study on EEG features for neonatal seizure detection". Book title: "Biomedical Signals based Computer-Aided Diagnosis System"	Springer Nature.
2	Niraj K. Vishwakarma, Parul Chaurasia, Pranjal Chandra, **Sanjeev Kumar Mahto**	Microfluidics Devices as Miniaturized Analytical Modules for Cancer Diagnosis	CRC Press
3	Niraj K Vishwakarma, Parul Chaurasia, Pranjal Chandra, **Sanjeev Kumar Maht**o	9 Microfluidics Devices	CRC Press
4	Ajay Kumar Sahi, Neelima Varshney, Rakesh Kumar Sidu, Suruchi Poddar, Kameshwarnath Singh, **Sanjeev Kumar Mahto**	Clinical Implications of Cortisol and Bioanalytical Methods for Their Determination in Various Biological Matrices	Springer, Singapore
5	Monami Das Modak and **Pradip Paik**,	A wide portray of Upconversion-nanoparticles: surface modification for bio-applications	Springer-Nature, Singapore, Pte Ltd
6	Deepesh Kumar, Andrei Nakagawa Silva, and Nitish V. Thakor	Neuromorphic Tactile Sensing and Encoding. In: Thakor N.V. (eds) Handbook of Neuroengineering. https://doi.org/10.1007/978-981-15-2848-4_117-1	Springer Nature, Singapore
7	Bhattacharjee A, Roy PK.	Systems Analysis based approach for Therapeutic intervention in Mixed Vascular-Alzheimer Dementia (MVAD) using Secondary Metabolites (in Singh S, Dilnashin H, Ed., Indopathy for Neuroprotection: Recent Advances). https://benthambooks.com/future-books-by-subject/pharmacology/	Bentham Science Publishers, 2022.
8	Purohit P., Roy PK.	Multimodal Noninvasive Imaging Strategies for Clinically Monitoring Degenerative Disorders of the Brain (in: Mazumder N, Kistenev T, Ed., Advances in Brain Imaging Techniques). DOI: 10.1007/978-981-19-1352-5_11	Springer Science Publishers

Editorial boards of journals

Sl. No.	Name of faculty member	Position (editor/ member)	Name of journal
1	Dr. Deepesh Kumar	Guest Editor	Frontiers in Psychiatry
2	Dr. Deepesh Kumar	Review Editor	Frontiers in Medical Technology
3	Dr. Jac Fredo	Reviewer	Frontiers In Computational Neuroscience
4	Dr. Jac Fredo	Reviewer	Journal of Autism and Developmental Disorders
5	Prasun K. Roy	Member	International J. of Soft Computing & Artificial Intelligence
6	Pradip Paik	Editorial Members	Current Indian Science: Chemical Engineering

Sl. No.	Name of faculty member	Position (editor/ member)	Name of journal
7	Pradip Paik	Editorial Members	Journal of Engineering Technology (JET)
8	Pradip Paik	Associate Editorial	Archives of Nanomedicine: Open Access Journal, Lupines Publishers

Design and Development Activities

New facilities added

Sl. No.	Details (Infrastructure, equipment, etc.)	Value (in lakhs of rupees)
1	Computer, Network Attached Storage (NAS) Device, Uninterrupted Power Storage (UPS) Device	5.34 lakhs
2	Rheometer	6 lakhs
3	Texture Analyzer	5 lakhs
4	Vital sign simulator	4 lakhs
5	Spin Coater	1.2 lakhs
6	Virtual Reality Headset	1.2 Lakhs
7	Physiological monitoring device	8.5 Lakhs
8	Cell culture facilities	12.5 Lakhs
9	Lyophilizer	15 Lakhs
10	Sonication System	8 Lakhs

Patents filed

S. No.	Name of faculty member	Title of patent
1	Sanjeev Kumar Mahto	**Mahto S.K.,** Varshney N., "A Superabsorbent Biocompatible Soy-based Hydrogel Scaffold and Method of Preparation Thereof" Application No.: 202111050848 November 05, 2021, India Patent.
2	Pradip Paik	Pradip Paik, Monica Pandey et al. MESOPOROUS NANO-INORGANIC ANTIBIOTIC COMPOSITIONS AND METHOD OF PREPARATION THEREOF, 202211015312, Dated: March 21, 2022
3	Pradip Paik	Pradip Paik, Monica Pandey et al. QUATERNARY ANTIBIOTIC COMPOSITION AND METHOD OF PREPARATION THEREOF, 202211015313, Dated: March 21, 2022
4	Pradip Paik	Pradip Paik, Somedutta Maity, Kirti Wasni, Munendra Tomar, PREPARATION OF CARBON NANOCAPSULES FROM AZADIRACHTA INDICA SEED FOR THE TREATMENT OF BREAST CANCER, Application No.: 202111060434, Dated: 23-12-2021
5	Pradip Paik	A facile hollow mesoporous chiral polymeric nanocapsule and a process for its preparation, Application No.: 202111020273, (3rd May, 2021).

Research and Consultancy Sponsored research projects (Ongoing only)

Sl. No.	Title	Period	Funding agency	Amount (in lakhs of Rs.)	Project P.I
1	Development of Cardiac Model for Prediction of Human Heart Failure using Non-invasive medical imaging and Computational Fluid Dynamics techniques	Starting date 25/11/2021 (Duration 3 years)	ICMR New Delhi	52 Lakhs	Dr. Sanjay Kumar Rai
2	Development of Sparse Inverse Co-variance based functional brain connectivity Schemes for the assessment of Shared Autistic Traits in Autism and Typical Development	Starting date 24/01/2022 (Duration 3 years)	SERB	15.763 Lakhs	Dr. Jac Fredo

Sl. No.	Title	Period	Funding agency	Amount (in lakhs of Rs.)	Project P.I
3	Developing Psyllium Husk Based Polysaccharide Hydrogel into Electrospinable and 3D Printable Materials: Towards Fabrication and Comparative Evaluation of Lyophilized, Electrospun and 3D Bioplotted Scaffolds for Liver Tissue Engineering	2020-2023	CRG-SERB	42.52 Lakhs	Dr. Sanjeev Kumar Mahto
4	Development of Brain/Liver-on-a-Chip Models for Understanding the Role of Liver in the Progression of Alzheimer's Disease during Diabetes.	(July 2021 – June. 2023	DST	19.70 Lakhs	Dr. Sanjeev Kumar Mahto
5	Portable smart in-vitro diagnostic platform for monitoring thyroid disorders.	Aug. 2021 – Aug. 2024	Council of Science and Technology, U.P.	11.94 Lakhs	Dr. Sanjeev Kumar Mahto
6	Hybrid EEG-EMG based Prosthetic hand for transradial amputees to perform reach and grasp tasks	Feb 2022-24	TIDE division DST	37 Lakhs	Dr Shiru Sharma
7	Design and development of affordable myoelectric prosthetic hand	May 2019-June 2022	SERB DST	10 Lakhs	Dr Shiru Sharma
8	Device fabrication of nanostructured carbon decorated with metal nanoparticle loaded metal doped monochalocogenides: Performance evaluation with commercially available thermoelectric devices. DST-INPRINT, 2020-2023 (with IIT Kanpur)	2020-2023	DST-INPRINT	250 Lakhs	Dr Pardip Paik, co-Investigator
9	'Development of a multiplex portable spinning disc for effective monitoring of women's health during different stages of pregnancy' DST, (R&D/PFMS/SA/DST/Mech/21-22/05/313), CO-PI, 2022-2023,	2022-2023	DST	69 Lakhs	Dr Pradip Paik, Co-Pi
10	Early stage detection of non-small cell lung cancer by developing aptamer graphene microarray	2021-2024	ICMR	Rs. 50 lakhs	Dr. Marshal

Research publications

Total number of papers published in refereed National journals	1
Total number of papers published in refereed International journals	49
Total number of papers presented in National conferences	2
Total number of papers presented in International conferences	3

Refereed International journals

1. Srivastava P, Sahi A. K, Kumar A**, Mahto S.K**. (2022) Establishing relation between in-vivo and in-vitro Cryospray experiments through thermal characteristics International Journal of Thermal Sciences, Volume 176,107389.

2. Varshney N, Sahi A.K, Poddar S, Vishwakarma N.K., Kavimandan G, Prakash A., and **Mahto S.K.** (2022) Freeze–Thaw-Induced Physically Cross-linked Superabsorbent Polyvinyl Alcohol/Soy Protein Isolate Hydrogels for Skin Wound Dressing: In Vitro and In Vivo Characterization ACS Applied Materials & Interfaces 14 (12), 14033-14048.

3. Vishwakarma N.K, Chaurasia P, Chandra P, **Mahto S.K** (2022) 9 Microfluidics Devices CRC Press 229.

4. Rathore R.S, Senthil R Ayyannan, **Mahto S.K** (2022) Emerging three-dimensional neuronal culture assays for neurotherapeutics drug discovery Taylor & Francis.

5. Sahi, A.K., Verma, P., Varshney N, **Mahto S.K.** et al. (2022) Revisiting Methodologies for In Vitro Preparations of Advanced Glycation End Products. Appl Biochem Biotechnol.

6. Gundu, S., Varshney, N., Sahi, A.K. et al. (2022) Recent developments of biomaterial scaffolds and regenerative approaches for craniomaxillofacial bone tissue engineering. J Polym Res **29,** 73.

7. Vishwakarma N.K., Singh S, Vishwakarma S, Sahi A. K., Patel V.K, Shiva Kant and **Mahto S.K.** (2022) Converting CO_2 into heterocyclic compounds under accelerated performance through Fe_3O_4-grafted ionic liquid catalysts New J. Chem., 2022, 46, 2887-2897.

8. Vikas, Viswanadh M.K., Mehata A.K., Sharma V, Priya V, Varshney N, **Mahto S.K.**, Madaswamy S. Muthu, (2021) Bioadhesive chitosan nanoparticles: Dual targeting and pharmacokinetic aspects for advanced lung cancer treatment, Carbohydrate Polymers Volume 274, 118617.

9. Kumar C.S., Singh G., Poddar S., Varshney[3] N., **Mahto S.K.**, Podder A. S., Chattopadhyay[1] K., Rastogi A., Singh V. and Mahobia G.S.[1] (2021) High-manganese and nitrogen stabilized austenitic stainless steel (Fe–18Cr–22Mn–0.65 N): a material with a bright future for orthopedic implant devices IOP Publishing Ltd 16 065011.

10. Poddar S., Agarwal P.S., Sahi A.K. ,Varshney N., Vajanthri K.Y., Mahto S.K. (2021) Fabrication and characterization of electrospun psyllium husk-based nanofibers for tissue regeneration Journal of applied polymer science. John Wiley & Sons, Inc. 138, 50569.

11. Viswanadh M.K., Agrawal N., Azad S., Jha A., Poddar S., **Mahto S.K**., Muthu M.S., (2021) Novel redox-sensitive thiolated TPGS based nanoparticles for EGFR targeted lung cancer therapy, International Journal of Pharmaceutics, Volume 602,120652.

12. U. Kasiviswanathan, Kumar C., Poddar S., Jit S., **Sharma N**., and **Mahto S.K.**, (2021) "Extended Large Area Si/ZnO Heterojunction Biosensor for Assessing Functional Behavior of Primary Cortical Neuronal Cells," in IEEE Sensors Journal, vol. 21, no. 13, pp. 14619-14626.

13. Agarwal PS, Poddar S, Varshney N, et al. (2021) Printability assessment of psyllium husk (isabgol)/gelatin blends using rheological and mechanical properties. Journal of Biomaterials Applications. 35(9):1132-1142.

14. Uvanesh Kasiviswanathan, Chelladurai Karthikeyan Balavigneswaran, Chandan Kumar, Suruchi Poddar, Satyabrata Jit, **Neeraj Sharma**, Sanjeev Kumar Mahto (2021), "Aluminium Oxide Thin-Film Based In Vitro Cell-Substrate Sensing Device for Monitoring Proliferation of Myoblast Cells," in IEEE Transactions on NanoBioscience, vol. 20, no. 3, pp. 331-337.

15. Sahi A, K, Varshney N, Poddar S, Gundu S, **Mahto S, K** (2021) Fabrication and Characterization of Silk Fibroin-Based Nanofibrous Scaffolds Supplemented with Gelatin for Corneal Tissue Engineering. Cells Tissues Organs 210:173-194.

16. R. Bhattacharjee, F. Heitz, V. Noblet, **S. Sharma, N. Sharma**, Evaluation of a Learning-based Deformable Registration Method on Abdominal CT Images, IRBM, Volume 42, Issue 2, 2021, Pages 94-105, ISSN 1959-0318, DOI: 10.1016/j.irbm.2020.04.002.

17. Nitesh Singh Malan, **Shiru Sharma**, Time window and frequency band optimization using regularized neighbourhood component analysis for Multi-View Motor Imagery EEG classification, Biomedical Signal Processing and Control, Volume 67, 2021, 102550, ISSN 1746-8094, DOI: 10.1016/j.bspc.2021.102550.

18. Sachin Negi, **Shiru Sharma, Neeraj Sharma**, FSR and IMU sensors-based human gait phase detection and its correlation with EMG signal for different terrain walk Sensor Review, Volume 41, Number 3, 2021, pp. 235-245(11) DOI: 10.1108/SR-10-2020-0249

19. Sumit Tripathi, Taresh Sarvesh Sharan, **Shiru Sharma & Neeraj Sharma** (2021) An Augmented Deep Learning Network with Noise Suppression Feature for Efficient Segmentation of Magnetic Resonance Images, IETE Technical Review, DOI: 10.1080/02564602.2021.1937349

20. Alok Prakash, **Neeraj Sharma, Shiru Sharma,** An affordable transradial prosthesis based on force myography sensor, Sensors and Actuators A: Physical, Volume 325, 2021, 112699, ISSN 0924-4247, DOI: 10.1016/j.

sna.2021.112699.

21. Taresh Sarvesh Sharan, Sumit Tripathi, **Shiru Sharma & Neeraj Sharma** (2021) Encoder Modified U-Net and Feature Pyramid Network for Multi-class Segmentation of Cardiac Magnetic Resonance Images, IETE Technical Review, DOI: 10.1080/02564602.2021.1955760

22. Taresh Sarvesh Sharan, Romel Bhattacharjee, Alok Tiwari, **Shiru Sharma & Neeraj Sharma** (2022) Cascaded Model (Conventional+Deep Learning) for Weakly Supervised Segmentation of Left Ventricle in Cardiac Magnetic Resonance Images, IETE Technical Review, DOI: 10.1080/02564602.2022.2055668.

23. Tripathi, S., & **Sharma, N.** (2022). Denoising of magnetic resonance images using discriminative learning-based deep convolutional neural network. Technology and Health Care, 30(1):145-160.

24. Nillmani, Jain, P. K., **Sharma, N**., Kalra, M. K., Viskovic, K., Saba, L., & Suri, J. S. (2022). Four Types of Multiclass Frameworks for Pneumonia Classification and Its Validation in X-ray Scans Using Seven Types of Deep Learning Artificial Intelligence Models. Diagnostics, 12(3): 652.

25. Jain, P. K., **Sharma, N**., Giannopoulos, A. A., Saba, L., Nicolaides, A. & Suri, J. S. (2021). Hybrid deep learning segmentation models for atherosclerotic plaque in internal carotid artery B-mode ultrasound. Computers in Biology and Medicine, 136: 104721.

26. Jain, P. K., **Sharma, N**., Saba, L., Paraskevas, K. I., Kalra, M. K., Johri, A., Suri, J. S. (2021). Unseen Artificial Intelligence—Deep Learning Paradigm for Segmentation of Low Atherosclerotic Plaque in Carotid Ultrasound: A Multicenter Cardiovascular Study. Diagnostics, 11(12): 2257.

27. Jain, P. K., **Sharma, N**., Saba, L., Paraskevas, K. I., Kalra, M. K., Johri, A., & Suri, J. S. (2021). Automated deep learning-based paradigm for high-risk plaque detection in B-mode common carotid ultrasound scans: an asymptomatic Japanese cohort study. International Angiology: a Journal of the International Union of Angiology, 41(1):9-23

28. Tripathi, S., Verma, A., & **Sharma, N**. (2021). Automatic segmentation of brain tumour in MR images using an enhanced deep learning approach. Computer Methods in Biomechanics and Biomedical Engineering: Imaging & Visualization, 9(2):121-130.

29. Tripathi, S., Sharan, T. S., Sharma, S., & Sharma, N. (2021). An augmented deep learning network with noise suppression feature for efficient segmentation of magnetic resonance images. IETE Technical Review, 10:1-14.

30. Tripathi, S., & **Sharma, N**. (2021). Computer-aided automatic approach for denoising of magnetic resonance images. Computer Methods in Biomechanics and Biomedical Engineering: Imaging & Visualization, 9(6):707-716.

31. Tripathi, S., & Sharma, N. (2021). Computer-Based Segmentation of Cancerous Tissues in Biomedical Images Using Enhanced Deep Learning Model. IETE Technical Review, 3:1-15.

32. Sharan, T. S., Tripathi, S., **Sharma, S**., & **Sharma, N.** (2021). Encoder modified U-net and feature pyramid network for multi-class segmentation of cardiac magnetic resonance images. IETE Technical Review, 6:1-13.

33. Negi, S., Garg, K., Prajapat, M., & S**harma, N**. (2022). A Standalone Real-Time Gait Phase Detection Using Fuzzy-Logic Implementation in Arduino Nano. SN Computer Science, 3(1), 1-7.

34. Negi, S., **Sharma, S.,** & **Sharma, N**. (2021). FSR and IMU sensors-based human gait phase detection and its correlation with EMG signal for different terrain walk. Sensor Review.

35. Negi, S., Sagar, U., Nautiyal, V. K., & **Sharma, N**. (2021). Design and analysis of magnetorheological damper based ankle-foot prosthesis prototype. Industrial Robot: the international journal of robotics research and application.

36. Negi, S., & **Sharma, N**. (2021). A standalone computing system to classify human foot movements using machine learning techniques for ankle-foot prosthesis control. Computer Methods in Biomechanics and Biomedical Engineering, 1-11.

37. Sagar C., Kumar D., **Sharma N**., (2022) Sparsity-Based Thresholding Criterion For Spurious Echo Removal And Denoising Magnetic Resonance Spectra Using Rational-Dilation Wavelet Transform, Journal of Applied Spectroscopy, 89(3).

38. Monica Pandey, Kirti Wasnik, Shubhra Gupta, Monika Singh, Sukanya Patra, Premshankar Gupta, Divya Pareek, Somedutta Maity, Ragini Tilak, **Pradip Paik**, Target specific inhibition of bacterial and Candida species by mesoporous Ag/Sn-SnO_2 composite nanoparticles: in silico and in vitro investigation. RSC Adv., 2022,12, 1105-1120, 05 Jan 2022

39. Pandey, Monica; Singh, Monika; Patra, Sukanya; Wasnik, Kirti; Gupta, Shubhra; Gupta, Prem Shankar; Pareek, Divya; Chaitanya, Nyshadham Sai Naga; Reddy, Aramati; Tilak, Ragini; **Paik, Pradip**, Targeted and Enhanced Antimicrobial Inhibition of mesoporous ZnO-Ag_2O/Ag, ZnO-CuO and ZnO-SnO2 composite nanoparticles,ACS Omega 2021, 6, 47, 31615–31631 (16th Nov, 2021), https://doi.org/10.1021/acsomega.1c04139.

40. **Paik et al**. A Facile Hollow Mesoporous Chiral Polymeric Nanocapsule and A Process For Its Preparation, The Patent Office Journal, Application No.: 202111020273, Date Of Publication: 29-10-2021,

41. Paik et al. A drug loaded thermosensitive porous polymer film and a method of preparation thereof, The Patent Office Journal, Application No.: 202111009754, date of publication: 29-10-2021,

42. Kumar, Koushi; **Paik, Pradip**, "Protein immobilization on heterogeneous SiO_2/ZnO hollow-mesoporous nanocapsules prepared by imprinting CPMV: drug delivery and possible immunological applications", ACS Biomater. Sci. Eng. 2021, 7, 10, 4847–4858. (25th September)

43. Tascı Muhammed Enes, Dede Berna, Tabak Eray, Gur Aybuke, Sulutas Rabia Betul, Cesur Sumeyye, Ilhan Elif, Lin Chi-Chang, **Paik Pradip**, Denisa Ficai, Ficai Anton, Gunduz Oguzhan; Production, Optimization and Characterization of Polylactic Acid Microparticles using Electrospray with Porous Structure, Applied Science,2021, 11(11), 5090; https://doi.org/10.3390/app11115090 (31 May 2021).

44. Sukanya Patra, Monika Singh, Kirti Wasnik, Divya Pareek, Prem Shankar Gupta, Sudip Mukherjee, **Pradip Paik**. Polymeric Nanoparticle Based Diagnosis and Nanomedicine for Treatment and Development of Vaccines for Cerebral Malaria: A Review on Recent Advancement, ACS Appl. Bio Mater. 2021, 4, 10, 7342–7365, Publication Date: September 15, 2021, https://doi.org/10.1021/acsabm.1c00635

45. D Sharma, R Devi, J Jaiswal, H S Dutta, R Khan and M Dhayal**,** A Highly Sensitive Immunosensor Based on In Situ Reduced Gold-Chitosan Nanocomposite for Detection of Monosodium L-glutamate. J. Biosyst. Eng. 46 (2022).

46. Kumar D., Silva A.N., Thakor N.V. (2021) Neuromorphic Tactile Sensing and Encoding, In: Thakor N.V. (eds) Handbook of Neuroengineering. Springer, Singapore. https://doi.org/10.1007/978-981-15-2848-4_117-1

47. 1. Pareek V, Paul S, **Roy PK** (2022). Corpus Callosum Remodeling in Glioma: Constancy of Fiber Density and Anisotropy in MRI. Canadian Journal of Neurological Science. 49(2):282-286.

48. Ruttala R, Purohit P, Bhattacharjee B, Kumari K, **Roy PK** (2022). MRI-DTI Imaging Reveals Specific Neurodegeneration Signature in Precuneus Node of Awareness Processing in Brain under Alzheimer's Disease, Journal of Advanced Applied Scientific Research, 4:1 (accepted).

49. 2. Sandstrom M, Abrams M, Bjaalie J, **Roy PK**, Tiesinga P, Wachtler T, Goscinski W (2022). Recommendations for repositories and scientific gateways from a neuroscience perspective, Nature Scientific Data, 9(1), 212-217.

Refereed National journal

1. S. Tripathi, T. S. Sharan, **S. Sharma** and **N. Sharma**, "Segmentation of Brain Tumour in MR Images Using Modified Deep Learning Network," *2021 8th International Conference on Smart Computing and Communications (ICSCC)*, 2021, pp. 1-5, DOI: 10.1109/ICSCC51209.2021.9528298

2. Negi, S., Negi, P.C., Singh, D., **Sharma, N.** (2021). Comparative Analysis of SVM and DNN for Multiple Terrain Classification Using Hybrid Sensor. In: Singh Mer, K.K., Semwal, V.B., Bijalwan, V., Crespo, R.G. (eds) Proceedings of Integrated Intelligence Enable Networks and Computing. Algorithms for Intelligent Systems. Springer, Singapore.

Proceedings of International conferences

1. Vaibhav Jain, Abirami S, Rakshit Mittal, Priya Rani, Anandh KR, **Jac Fredo AR**. 2022. Automated diagnosis of Autism Spectrum Disorder condition using shape based features extracted from brainstem. The European Federation for Medical Informatics (EFMI), 32nd Medical Informatics Europe Conference (MIE2022), Nice, France, May 2022.

2. S. Tripathi, T. S. Sharan, **S. Sharma and N. Sharma**, "Segmentation of Brain Tumour in MR Images Using Modified Deep Learning Network," *2021 8th International Conference on Smart Computing and Communications (ICSCC)*, 2021, pp. 1-5, DOI: 10.1109/ICSCC51209.2021.9528298

3. Bindu K, Chandrasekhar S, Raghavendran L, **Roy PK.** Systems Biology basis of Permanent Tumor Regression with Normal Tissue Protection: Experimentally validated Signaling Pathway framework, Proc. Annual Meeting of American Society of Clinical Oncology, Chicago, USA, 2022.

Proceedings of National conferences

1. Chowdhury S, Purohit P, Bhattacharjee A, Kumari B, **Roy PK,** Novel Drug Discovery for Acute Encephalitis using A.I.-based machine-reading and knowledge-mapping of Medical Literature Text: Validation by Animal Experiments and Human Clinical Trials, Proc. Annual Conference of National Academy of Medical Sciences, India, Nov 2021.

2. Baghel B, Kumari B, Bhattacharjee A, Purohit P, **Roy PK**. Long-term Structural Stability observed in Cerebellum during Ageing: Radiological Genomics identifies Neuroprotective Drugs with Clinical Validation, Proc. Annual Conference of National Academy of Medical Sciences, India, 26-28 Nov 2021.

Distinguished Visitors

Sl. No.	Name of the visitor & designation	Date of visit	Purpose of visit
1	Dr Saugmo, Medical Consultant, Tibetan Medical Institute, Dharmasala, Himachal Pradesh	29.12.21	Research cooperation
2	Dr Lhundup, Medical Consultant, Tibetan Medical Institute, Dharmasala, Himachal Pradesh	29.12.21	Research cooperation

Foreign students visit in the Department/School/Unit

Sl. No.	Name of foreign student	Purpose of visit	Date and venue
1	Dr. Priya Rani	Discussion about active collaborations	25/01/2022

Key Instruments:

20. School of Materials Science and Technology

Full Name of School: School of Materials Science and Technology

Year of Establishment: 1978

Coordinator of the School: Dr. (Mrs) Chandana Rath, w.e.f. .01.01.2021

Brief introduction of the Department/School:

The School of Materials Science and Technology is an internationally renowned Centre of Materials Research and Education. It was established in 1978 following the recommendations of the V Plan Visiting Committee of the UGC. It serves as the Institute's nodal centre for fostering interdisciplinary teaching and research in the field of materials science and technology. School runs successful Ph.D., M.Tech. and Integrated Dual Degree (IDD) programmes since 1982, 1984 and 2005, respectively. All these students are gainfully employed, several of them in premier Research and Development organizations, industry and teaching institutions. The syllabi of different programs are revised periodically to include topics of current significance in the field. Integrated 5-year dual degree programme is leading to combined B.Tech. & M.Tech. degrees. This program has been initiated from the session 2005-06 through JEE.

The school has a modest four floor building. The laboratories are equipped with modern and sophisticated equipment for materials preparation, characterization, processing and phase transformation studies. Working in these frontiers' areas the faculty members of the school have generated more than Rs. 15 crores during the last five years through various projects/schemes funded by agencies like DST, SERB, DBT, IMPRINT, DST-Nanomission, BRNS, SPARC, DRDO, UGC-DAE-CSR, etc. and have published more than 250 research papers in reputed journals such as Nature Comm., Signal Transduct Target Ther, Appl. Phys. Lett., Phys. Rev. B, J. Phys. Cond. Matter, J. Appl. Phys., Macromolecules, Dalton Trans., J. Controlled Release, J. Mater. Chem, J. Phys Chem., Nanoscale, RSC Advances, Langmuir, Sensors and Actuators B., Scientific Report etc.

Major areas of Research

- Nanomaterials for Energy, Health and Electronics
- Magnetic materials and Nano magnetism
- X-ray and Neutron Crystallography
- Ferroics and Multiferroics
- Metals, alloys and multifunctional materials
- Functional Materials and Devices
- Biopolymers for drug delivery
- Polymer nanocomposites
- Sensors and Biosensors
- Thin film devices and organic electronics
- Advanced Ceramics

Area of the Department/School (in square meters): The School has a modest building of about 16,000 sq. ft. floor area.

Infrastructure

Sl. No.	Particulars	Number
1	No. of classrooms	One
2	No. of lecture halls	One
3	No. of laboratory	Nineteen
4	No. of computers available for students in the Department/School	Thirty five

Unique Achievement / Preposition of the Department/School

Academic Programmes offered

Ph.D., M. Tech and Integrated Dual Degree (B.Tech +M.Tech.)

Students on Roll

Sl. No.	Programme	Programme	I Year	II Year	III Year	IV Year	V Year & above
1.	B. Tech/B. Arch	B. Tech/B. Arch	N/A	N/A	N/A	N/A	N/A
2.	Dual Degree	Dual Degree	25	14	23	16	19
3.	M. Tech/ M. Pharm	M. Tech/ M. Pharm	15	14	-	-	-
4.	Ph. D (Under Institute Fellowship)	Ph. D (Under Institute Fellowship)=28	7	9	3	4	5
5.	Ph. D (Under Project Fellowship)	Ph. D (Under Project Fellowship)=6	1	3	1	1	-
6.	Ph. D (Under Sponsored Category)	Ph. D (Under Sponsored external fellowship)=32	8	6	6	7	5

Names of students/scholars who attended conferences/workshops/seminars and symposia abroad or in India

Sl. No.	Name of Student	Roll No.	Conference/Seminar/ Symposia/Workshop	Date & Venue	Financial Assistance From
ÌNDIA					
1.	Subhajit Jana	17111015	APA Sustainability Forum	20th April, 2021 & 1st May, 2021	NA
2.	Nupur Kumari	19111003	International e-Conference on Nanomaterials and Nanoengineering APA NANO FORUM-2022 International e-Workshop on Science and Technology of Emerging Materials (Estem-21) "Learn-to-Storytell Your Research" mini-Workshops ies Research	24-26 February 2022 19-21st April 2021 28-17th May 2021	Self NA NA
3.	Saurabh Kumar	18111506	International e-Conference on Supercapacitor and Batteries, SUPERBATS 2022, IIT Kharagpur International virtual workshop on Bioelectronic Medicine, IISc Bangalore, IIT BHU and University of Manchester UK Indo- Japan workshop on Silicon crystal growth for Photovoltaic application	28-30 March 2022 16th December 2021 7th January 2022	Self Self NA

Sl. No.	Name of Student	Roll No.	Conference/Seminar/ Symposia/Workshop	Date & Venue	Financial Assistance From
4.	Shweta Pal	17111014	"Learn-to-Storytell Your Research" mini-Workshopsies Research	28-17th May 2021	NA
5.	Monika Srivastava	PDF Women scientist, DST	International e-Conference on Nanomaterials and Nanoengineering APA NANO FORUM-2022 International Webinar on Nanoscience 2021 International conference on Sustainable Materials and Technologies for Energy and Bio Applications (SMTBEA-2021) Supercaps and Batteries- SUPERBATS 2022	24-26 February 2022 28-30 July 2021 19-21 May 2021 28-30 March 2022	Self Self Self Self
6.	Priya Singh	17111010	International e-Conference on Advanced Materials for Better Tomorrow (AMBT-2022) "Learn-to-Storytell Your Research" mini-Workshops ies Research	13-17 July 2021 28-17th May 2021	NA NA
7.	Aniruddha Jaiswal	16111502	The 31st Annual Meeting of MRS-J International e- Conference on THE POWER OF CHEMICAL TRANSFORMATIONS ACS Webinar on Science, Technology and Innovation: Key drivers for Aatmanirbhar Bharat	13-15 December, 2021 Yokohama, Japan 20-21 May 2021 23 Dec 2021	Self Self Free
8.	Manish Yadav	17111007	**65th** DAE Solid State Physics Symposium **(**DAE-SSPS 2021**).**	15-19th December, 2021, Virtual Mode	No
9.	Akhilesh Kumar Yadav	19111001	**65th** DAE Solid State Physics Symposium **(**DAE-SSPS 2021**).**	15-19th December 2021, Virtual Mode	No
10.	Akhilesh Kumar Yadav	19111001	27th International conference of International Academy of Physical Sciences on Hydrogen Energy and Nanomaterials (CONIAPS-XXVII).	26-28th October, 2021, Virtual Mode	No
11.	Akhilesh Kumar Yadav	19111001	One week National Workshop on Deep Dive into Python organized by Chitkara University, Himachal Pradesh, India	24-28th August, 2021, Virtual Mode	No
12.	Akhilesh Kumar Yadav	19111001	International Virtual Workshop on Bioelectronic Medicine jointly organized by IIT (BHU) and IISc Bangalore and co-hosted by Henry Royce Institute, The University of Manchester, UK	16th December, 2021, Virtual Mode	No
13.	Akhilesh Kumar Yadav	19111001	2nd Indo-Korea Virtual Conference on Development of Advanced Materials for Future Applications (DAMFT) jointly organized by KAIST, Daejeon, South Korea and Vellore Institute of Technology, Chennai, India.	14-15th May, 2021, Virtual Mode	No
14.	Sanjna Rajput	19111503	MRSI-AGM Materials Conclave 2021 (32nd Annual general meeting of MRSI)	20-23rd December, 2021, Virtual Mode	No
15.	Sanjna Rajput	19111503	One week National Workshop on Deep Dive into Python organized by Chitkara University, Himachal Pradesh, India	24-28th August, 2021, Virtual Mode	No

Sl. No.	Name of Student	Roll No.	Conference/Seminar/ Symposia/Workshop	Date & Venue	Financial Assistance From
16.	Keshav Kumar	20111507	Workshop on Standardization of Sensors, Devices and their Applications jointly organized by Thapar Institute of Engineering and Technology, Patiala and CSIR-NPL, New Delhi.	22-23rd February, 2022, Virtual Mode	No
17.	Aiswarjya Bastia	20111501	International Conference on Condensed Matter (ICCM-2021) organized by the Academic of Sciences Chennai	28-30th October, 2021, Virtual Mode	No
18.	Aiswarjya Bastia	20111501	International Symposium on 'Physics-Fascination to Aspiration (PhyFA'21)' organized by NIT Tiruchirappalli, India	25-26th October, 2021, Virtual Mode	No
19.	Aiswarjya Bastia	20111501	International Conference on Artificial Intelligence, Photonics and Revolutionary Smart Materials jointly organized by University Department of Physics, L.N. Mithila University, Darbhanga and D.D.E.L.N.M.U.	25-26th October, 2021, Virtual Mode	No
20.	Aiswarjya Bastia	20111501	Webinar on Futuristic Thin Films and Semiconductor Device s and Fabrication Process oorganizedby Labindia Instruments Pvt. Ltd.Thane, India	9-10th September 2021, Virtual Mode	No
21.	Deepankar Das	21111005	National Level Faculty Development Programme organized by Vaagdevi College of Enginnering,	2-3rd February, 2022, Virtual Mode	No
22.	Deepankar Das	21111005	Faculty Development Programme on Advances and Challenges in Physics organized by Fakir Mohan University, Balasore, Odisha, India	13-18th December, 2021, Virtual Mode	No
23.	Rajnikant Upadhyay	18111008	**1**.Symposium on Magnetism and Spintronics (SMS 2021), NISER Bhubaneshwar	25/11/2021 to 27/11/21	
24.	Rachana Sain	20111512	**1**.Symposium on Magnetism and Spintronics (SMS 2021), NISER Bhubaneshwar **2**. XXI International Workshop on Physics of Semiconductor Devices (IWPSD 2021), IIT (Delhi)	25/11/2021 to 27/11/21 14/12/2021 to 17/12/2021	
25.	Manjari Shukla	15111003	**1**. Symposium on Magnetism and Spintronics (SMS 2021), NISER Bhubaneshwar **2**.International Conference on "Artificial Intelligence, Photonics and Revolutionary Smart Materials" Mithila University, Darbhanga (Bihar)	25/11/2021 to 27/11/2021 25/10/2021 to 26/10/2021	
25.	Shanu Mishra	17111012	International Conference on Advanced Materials and Mechanical Characterization (ICAMMC 2021) **(Poster Presentation)**	2-4 December 2021, SRM Institute of Science and Technology, Kattankulathur, India (Virtual Conference)	
26.	Ankita Singh	18111002	Golden Jubilee Foundation Year International Conference on "Artificial Intelligence, Photonics and Revolutionary Smart Materials"(AIPRSM) **(Poster Presentation)**	25-26 October 2021 L.N.Mithila University, Darbhanga, India (Virtual Conference)	

Sl. No.	Name of Student	Roll No.	Conference/Seminar/ Symposia/Workshop	Date & Venue	Financial Assistance From
27.	Ankita Singh	18111002	International Conference on Advanced Materials and Mechanical Characterization (ICAMMC), **(Poster Presentation)**	2-4 December 2021, SRM Institute of Science and Technology, Kattankulathur, India (Virtual Conference)	
28.	Jaydeep Gupta	20111506	International Conference on Advanced Material for Better Tomorrow (AMBT-2021) **(Poster Presentation)**	13-17 July 2021 Indian Institute of Technology (BHU), Varanasi (Virtual Conference)	
29.	Jaydeep Gupta	20111506	Virtual Workshop on Density Functional Theory and its Application (Participated)	8-12 September 2021, Department of Physics, Assam University (A Central University), Silchar (Virtual Conference)	
30.	Jaydeep Gupta	20111506	Golden Jubilee Foundation Year International Conference on "Artificial Intelligence, Photonics and Revolutionary Smart Materials" (AIPRSM) **(Poster Presentation)**	25-26 October 2021 Department of Physics, L.N. Mithila University, Darbhanga, India (Virtual Conference)	
31.	Jaydeep Gupta	20111506	First International Conference on Material Sciences and Applied Physics (ICMSAP-2021) (Participated)	22–24 November 2021 Department of Physics, Pachhunga University College Mizoram University, Aizawl, India (Virtual Conference)	
32.	Rohit Kumar Gupta	21111010	First International Conference on Material Sciences and Applied Physics (ICMSAP–2021)	22-24 November 2021 Department of Physics, Pachhunga University College Mizoram University, Aizawl, India (Virtual Conference)	
33.	Rohit Kumar Gupta	21111010	Virtual workshop on Density Functional Theory and its Applications	8-12 September 2021, Department of Physics, Assam University (A Central University), Silchar (Virtual Conference)	
34.	Priyanka	21111007	Virtual workshop on Density Functional Theory and its Applications (Participated)	8-12 September 2021, Department of Physics, Assam University (A Central University), Silchar (Virtual Conference)	
35.	Priyanka	21111007	International conference on Artificial Intelligence, Photonics and Revolutionary smart materials (AIPSRM-2021) (Participated)	October 25-26,2021 and University dept. Of physics, L.N. Mithila university Darbhanga -846004	
36.	Priyanka	21111007	First International Conference on Material Sciences and Applied Physics (ICMSAP–2021) (Participated)	22-24 November 2021 Department of Physics, Pachhunga University College Mizoram University, Aizawl, India (Virtual Conference)	

Sl. No.	Name of Student	Roll No.	Conference/Seminar/ Symposia/Workshop	Date & Venue	Financial Assistance From
37	Ms. Rajnandini Sharma	18111007	International Conference on Advanced Materials and Mechanical Characterization 2021	2-4 Dec 2021	NA
38	Pawan Kumar Ojha	18111503	Attended and presented a poster in 5 days International Conference on "Advanced Materials for Better Tomorrow (AMBT-2021)" (Organized by, IIT (BHU), Varanasi and Society for Interdisciplinary Research in Materials and Biology (SIRMB)).	13-17th July 2021, Virtual Mode	
39	Pawan Kumar Ojha	18111503	Presented the research paper entitled "Synthesis and characterization of nanostructure VO2 thin film" in Second International Conference on Advances in Physical Science and Materials (ICAPSM-2021), Coimbatore, Tamil Nadu.	12-13th Aug. 2021, Virtual Mode	NA
40	Pawan Kumar Ojha	18111503	Attended 3 days International Conference on "Advanced Materials and Mechanical Characterization (ICAMMC-2021)" (Organized by, Dept. of physics and Nanotechnology and Dept. of Mechanical Engineering, SRM Institute of Science and Technology).	2-4th Dec. 2021, Virtual Mode	NA
41	Pawan Kumar Ojha	18111503	Participated in Bio-Startups: The journey from idea to reality, (Organized by, I-DAPT Hub Foundation and School of Biochemical Engineering.	4th Sep. 2021 at IIT (BHU), Varanasi	NA
42	Pawan Kumar Ojha	18111503	Attended International Virtual Workshop "Bio-electronic Medicine" (Organized by IIT (BHU) and IISc Bangalore).	16th Dec. 2021, Virtual Mode	NA
43	Nitipriya Tripathi	20111509	International conference on advanced materials and Material characterization.	2-4 th Dec 2021	NA
44	Nitipriya Tripathi	20111509	International Symposium on Advances in nano sensors and nanomedicine.	22 nd Dec 2021	NA
45	Raman Hissariya	18111009	Presented the research paper entitled "Antisites driven magnetic relaxation in La_2NiMn_6 double perovskites" in Second International Conference on Advances in Physical Science and Materials (ICAPSM-2021), Coimbatore, Tamil Nadu.	Aug, 2021	NA
46	Nidhi Chaubey	19111502	NIMS-IIT joint workshop	06/12/2021 to 10/12/2021	NA
47	Rajnandini Sharma	18111007	NIMS-IIT joint workshop	06/12/2021 to 10/12/2021	NA
48	Krishna Kant Dubey	18111003	48th National Seminar on Crystallography	November, 25-27 2021, **IIT Roorkee**	INSPIRE contingency
49.	Anupam Kumar Singh	16111003	48th National Seminar on Crystallography	November 25-2, 2021, Online Mode	Self-Financed
50.	Anupam Kumar Singh	16111003	International e-Conference on Nanomaterials & Nanoengineering APA Nanoforum-2022	February 24-26, 2022, Online Mode	Self-Financed

Sl. No.	Name of Student	Roll No.	Conference/Seminar/ Symposia/Workshop	Date & Venue	Financial Assistance From
ABROAD					
1.	Rajnikant Upadhyay	18111008	PETRA III research laboratory, DESY, Hamburg (Germany)	1/11/2021 to 5/11/21	DST-DESY project
ABROAD (online mode)					
1.	Krishna Kant Dubey	18111003	THERMAG IX 2021: 9th IIR International Conference on Caloric Cooling and Applications of Caloric Materials (THERMAG IX)	June, 7-11, 2021 **(Online mode), University of Maryland, U.S.A.**	Self-Financed
2.	Krishna Kant Dubey	18111003	DESY Photon Science Users' Meeting	February 07-09, 2022, Online Mode	NA
3.	Krishna Kant Dubey	18111003	16th International Conference on Martensitic Transformation (ICOMAT)	March, 13-18 2022, **(Online mode), The Korean Institute of Metals and Materials, Korea**	INSPIRE contingency
4.	Anupam Kumar Singh	16111003	DESY Photon Science Users' Meeting	February 07-09, 2022, Online Mode	NA
5.	Anupam Kumar Singh	16111003	ESRF User Meeting 2022	January 21-28, 2022, Online Mode	NA
6.	Subhajit Jana	17111015	The 31st Annual Meeting of MRS-J	13-15 December, 2021 Yokohama, Japan	INSPIRE contingency

Names of students/scholars who got prizes and awards outside the Institute

Sl. No.	Name of Student	Roll No.	Name of Prize	Date & Venue	Prize awarded by
1.	Nikhil	16111007	Best Paper Presentation	8-3-22 to 12-3-22, Chennai	13th International e-Conference of Advancements in Polymeric Materials (APM-22), CIPET: SARP Chennai, March 2022
2.	Shanu Mishra	17111012	India 100 Women Icon	December 2021, online	FOXCLUES
3.	Anupam Kumar Singh	16111003	Best poster	November, 27 2021, Indian Institute of Technology Roorkee	48th National Seminar on Crystallography
4.	Krishna Kant Dubey	18111003	Best poster	November, 27 2021, Indian Institute of Technology Roorkee	48th National Seminar on Crystallography

Names of Students/Scholars who went for foreign Internship

Sl. No.	Name of Student	Roll No.	Name of the Organization	Place of Internship	Country	Duration
1	Taranga Dehury	18111012	SERB_PURDUE	Purdue University Indiana's Land Grant University	West Lafayette, Indiana United States	1.3 Year

Faculty & their Activity

Faculty and their areas of specialisation

Sl. No.	Name, Qualifications, Employee No.	Date of award of PhD Degree	Major Areas of Specialization (Max. 3 Areas)
PROFESSORS			
1	Rajiv Prakash (Ph.D.) 17100	January, 2000	Organic Conducting Polymers; Organic Electronics and Sensors/ Biosensors
2	Pralay Maiti (Ph.D.) 17337	1996	Biomaterials; Energy materials; Drug delivery
ASSOCIATE PROFESSORS			
1	Dr. (Mrs.) Chandana Rath (Ph.D.) 17280	December, 2000	Nanostructured materials, Magnetism, Ion Irradiation
2	Dr. Akhilesh Kumar Singh (Ph.D.) 17387	2006	Smart Materials, Structural Phase Transitions in Electroceramics, Synthesis and Characterization of Novel Electroceramics,
3.	Dr. Chandan Upadhyay (Ph.D.) 18433	2004	**1**.Static and dynamic magnetic properties of Nanoparticles **2**.Quantum Materials **3**.Computational Materials Science
4.	Dr. Bhola Nath Pal (Ph.D.) 19817	November, 2005	Solution processed thin film devices, Optoelectronics devices, Nanoelectronics
ASSISTANT PROFESSORS			
1	Dr. Ashish Kumar Mishra, (Ph.D.) 50065	July, 2011	Carbon and TMDs nanomaterials, Energy and Environmental Applications, Optoelectronic Applications
2	Dr. Shrawan Kumar Mishra, (Ph.D.) 50071	March, 2010	Magnetism, condensed matter, memory and spintronics devices
3	Dr. Sanjay Singh (Ph.D.) 50072	2013	Heusler alloys, X-ray & Neutron Diffraction, Quantum Transport & Quantum Materials
4.	Dr. Nikhil Kumar,(PhD.) 50250	2017	Mechanical Behaviour of Materials, Additive Manufacturing, Development of high strength ferrous and non-ferrous alloys
Institute Professors			
1	Prof. Dhananjai Pandey (Ph.D.) FAC-IP11		Ferroics and Multiferroics, Functional Materials, X-ray and Neutron Crystallography

Technical and Non-Teaching Staff

Sl. No.	Name, Qualifications	Designation, Employee No.	Date of Appointment in the department
1.	**Ankit Jain,** MCA	Junior Assistant (50140)	10/01/2020
2.	**Samir Kumar Dubey B.A., M.A.** (Sociology), Diploma in Electrical Engg.	Senior Technician (18632)	06/08/2008
3.	**Sitaram Tiwari** Diploma in Mechanical Engg. (Pursuing)	Senior Technician(19592)	04/09/2012
4.	**Mahendra Kumar Patel B.A., COPA** and B.Sc. (Physics, Chemistry, Mathematics)	Senior Technician (19599)	04/09/2012

Short-term courses/workshops/seminars/symposia/conferences organised by faculty members

Sl. No.	Coordinator	Title	Period
1.	Prof. Rajiv Prakash	'Composites, Light Metals and Alloys'	December 20-23, 2021
2.	Shrawan Mishra (IIT-BHU)	IIT-NIMS joint workshop	(06/12/2021 to 10/12/2021)

Short-term courses/workshops/seminars/symposia/conferences/training programmes attended by faculty members in academic institutions and public sector undertakings

Sl. No.	Name of Faculty Member	Title	Period and Venue
Seminars/Symposia/Conferences			
1.	Prof. Rajiv Prakash	Invited talk on "Low-cost organic gas sensor based on polymer/polymer nanocomposite film formed by floating film transfer method (FTM)"	India-Japan Workshop on Biomolecular Electronics and Organic Nanotechnology (JSPS-DST) Dec 2021 Online.
2.	Prof. Rajiv Prakash	Invited talk on "Low-cost organic gas sensor based on polymer/polymer nanocomposite film formed by floating film transfer method (FTM)"	India-Japan Workshop on Biomolecular Electronics & Organic Nanotechnology for Environment Preservation (IJWBME-2021) during 9-10 Dec 2021 Nagoya University, Nagoya, Japan and online.
3.	Prof. Rajiv Prakash	Invired talk on "Organic gas sensors based on conducting and ordered polymer nanocomposite film formed by floating film transfer method"	31st Annual Meeting on Materials Research Society Japan (MRS-J) during 13-14 Dec. 2021 (online).
4.	Prof. Rajiv Prakash	Invited talk Faculty Development Program on "Recent Advances and Challenges in Nanoscale Devices: Design, Materials, and Applications Perspective"	Department of Electronics & Communication Engineering, NIT Hamirpur during June 1st –5th, 2021(Online).
5.	Prof. Rajiv Prakash	Invited talk on "Advanced materials based new generation biosensors"	Faculty Development Program of Department of Biotechnology, Allahabad University, 17th Jan 2022.
6.	Prof. Rajiv Prakash	Invited talk on "New generation bio-sensors based on nano materials functionalized transducers"	2nd International Conference on Recent Advances in Biotechnology and Nanobiotechnology, Amity University, Gwalior, 10-11 February 2022
7.	Prof. Rajiv Prakash	Expert talk on Advanced Materials based New-generation Electrochemical sensors	QIP short-term course on Advanced Materials for Environmental Sensors, March 10th 2022, IIT Indore.
8.	Prof. Pralay Maiti	RB Memorial Conference on Translational Research in Medicine (TRIM 2022), Design of drug delivery vehicles for better healthcare	IIT Bombay on April 19, 2022
9.	Prof. Pralay Maiti	International e-Conference on Nanomaterials & Nanoengineering (APA Nanoforum 2022) Controlled Drug Delivery for Better Healthcare	Asian Polymer Association during February 24-26, 2022
10.	Prof. Pralay Maiti	A P C Ray Memorial lecture DBT Star College program celebrating the birth anniversary of A P C Ray Control Drug Delivery and Healthcare	2nd August, 2021 Mugberia Gangadhar Mahavidyalaya
11.	Prof. Pralay Maiti	APA Bioforum International e-Conference on Polymeric Biomaterials & Bioengineering Nanocarriers for Drug Delivery to Cure Disease	August 27-28, 2021 through online mode
12.	Prof. Pralay Maiti	International Conference on Circular Economy: Driving Towards Sustainability (ICCE-2021) Sustainable Polymer Composites for Biomedical Applications	19-20 Aug. 2021
13.	Prof. Pralay Maiti	Refresher Programme on 'Recent Advances in Chemical Science and Technology' Polymer Nanocomposites : An Overview	University of Mumbai, Department of Chemistry during Sept. 15-28, 20201
14.	Prof. Pralay Maiti	DBT sponsored National Conference on "Recent Development of Chemical Research being implemented in Biology and Medicine" Materials for Healthcare	Mugberia College, WB, during 2 -3 November, 2021
15.	Prof. Pralay Maiti	20th National Conference on Surfactants, Emulsions and Biocolloids Control Drug Delivery for Better Healthcare	IIT Guwahati and Indian Society for Surface Science and Technology held **online mode** 9-11 December, 2021

Sl. No.	Name of Faculty Member	Title	Period and Venue
16.	Prof. Pralay Maiti	AICTE-ATAL Academy, Govt. of India sponsored Faculty Development Programme (FDP) on "Polymer Matrix Based Nanostructures For Targeted Drug Delivery Applications" held at CIPET: CSTS Polymer Nanocomposites and their Biomedical Applications	Guwahati, Assam, 7-11 February, 2022 via online mode (two lectures)
17.	Prof. Pralay Maiti	International e-Conference on Nanomaterials & Nanoengineering (APA Nanoforum 2022) Controlled Drug Delivery for Better Healthcare	Asian Polymer Association during February 24-26, 2022
18.	Prof. Pralay Maiti	Webinar on "Waste-2-Wealth" Department of Chemical Engineering, Birla Institute of Technology, Mesra Ranchi, Waste to wealth: Polymer perspectives	on March 12, 2022
19.	Dr.(Mrs.) Chandana Rath	Women Achiever in Science" in the Refresher Course on Research Methodology in Basic Sciences.	8th March 2022, HRDC, Utkal University.
20.	Dr.(Mrs.) Chandana Rath	Structural Phase Transition and Spontaneous Exchange Bias in Fe doped $NiCr_2O_4$ Nanoparticles: EXAFS and Magnetic Measurements.	14-17th December 2021, International Conference in Advanced Nanomaterials and Nanotechnology (ICANN), IIT Guwahati.
21.	Dr.(Mrs.) Chandana Rath	Structural Phase Transition and Spontaneous Exchange Bias in $NiCr_2O_4$ Spinel.	15th September 2021 Amity University Madhya Pradesh, Gwalior.
22.	Dr.(Mrs.) Chandana Rath	Magnetic Properties of Hydrothermally Synthesized -MnO_2 Nanowhiskers.	7th May, 2021 STEMIO's Magnetism and Magnetic Materials Online Summit (SMMM-2021)I.
23.	Ashish Kumar Mishra	Golden Jubilee Year International Conference on "Artificial Intelligence, Photonics, and Revolutionary Smart Materials" (AIPRSM - 2021)	October 25-26, 2011 L.N. Mithila University, Darbhanga, Bihar, India
24.	Ashish Kumar Mishra	Third Indian Materials Conclave (IndMac) and 32nd Annual General Meeting of MRSI	December 20-23, 2021 IIT Madras, Chennai (Virtual mode)
25.	Ashish Kumar Mishra	Lecture Workshop in Physical Science under DBT STAR College Scheme	January 10, 2022 Udai Pratap (Autonomous) College, Varanasi
26.	Ashish Kumar Mishra	Rajarshi Udai Pratap Singh Ju deo Memorial National Symposium on Laser in Biology, Medical Science, Atmospheric Science and Climate Change	March 14-15, 2022 Udai Pratap (Autonomous) College, Varanasi
27.	Shrawan Mishra	IIT-NIMS joint workshop (online)	06/12/2021 to 10/12/2021
28.	Shrawan Mishra	Scientific Research Writing using Latex and Descriptive Data Analysis through R/Python, BHU (online)	31/01/2022 -4/02/ 2 022
29.	Shrawan Mishra	Research Methodology & Data Analysis through Open Source Software, BHU (online)	08/03/2022-12/032022
Meetings			
1.	Shrawan Mishra	University of Hamburg	17/05/2021

Special lectures delivered by faculty members in other institutions

Sl. No.	Name of faculty Member	Topic of Lecture	Institution	Date
1.	Rajiv Prakash	"Organic gas sensors based on conducting and ordered polymer nanocomposite film formed by floating film transfer method"	Materials Research Society Japan (MRS-J)	13-14 Dec 2021
		"Low-cost organic gas sensor based on polymer/polymer nanocomposite film formed by floating film transfer method (FTM)"	Nagoya University, Nagoya, Japan	9-10 Dec 2021

Sl. No.	Name of faculty Member	Topic of Lecture	Institution	Date
		"Recent Advances and Challenges in Nanoscale Devices: Design, Materials, and Applications Perspective"	Department of Electronics & Communication Engineering, NIT Hamirpur	June 1st –5th, 2021
		"Advanced materials based new generation biosensors"	Faculty Development Program of Department of Biotechnology, Allahabad University	17 Jan 2022
		"New generation bio-sensors based on nano materials functionalized transducers"	Amity University, Gwalior	10-11 Feb 2022
2.	Chandan Upadhyay	Static and Dynamic Properties of Nanoparticles	School of Basic and Applied Sciences, Sanskrit University	06-05-2021
3.	(Mrs.) Chandana Rath	Women Achiever in Science" in the Refresher Course on Research Methodology in Basic Sciences.	HRDC, Utkal University, Bhubaneswar, Odisha	8th March 2022
3.	Ashish Kumar Mishra	Optoelectronics applications of CVD grown MoS2 nanostructures	L.N. Mithila University, Darbhanga, Bihar, India	26-10-21 (Virtual mode)
4.	Ashish Kumar Mishra	Two dimensional metal dichalcogenides nanostructures for optoelectronics applications	IIT Madras, Chennai	20-12-21 (Virtual mode)
5.	Ashish Kumar Mishra	Raman Spectroscopy: An Advanced Tool for Materials Study	Udai Pratap (Autonomous) College, Varanasi	10-01-22
6.	Ashish Kumar Mishra	Surface Enhanced Raman Spectroscopy: An Important Tool for Environmental Remediation	Udai Pratap (Autonomous) College, Varanasi	14-03-22
7.	Shrawan Mishra	Probing quantum criticality of heavy fermions with soft-x-rays	University of Hamburg	17/05/2022
8	Shrawan Mishra	Heavy fermions $CeCOIn_5$	University of Stockholm	15/07/2022

Honours and awards

Sl. No.	Name of Faculty Member	Details of Award
1.	Dr.(Mrs.) Chandana Rath	Women Achiever in Science, Technology, Engineering and Mathematics (STEM-2021)
2.	Dr Ashish Kumar Mishra	Indian National Young Academy of Science (INYAS) Membership- 2022
3.	Dr. Sanjay Singh	Indian National Young Academy of Sciences (INYAS) membership (2021)

Fellowships of academic and professional societies

Sl. No.	Name of Faculty Member	Details of Fellowship
1	Dr. A. K. Singh	Joint Secretary of the Indian Crystallographic Association (ICA) for the period 2019-2022.
2	Prof. Pralay Maiti	Fellow of West Bengal Academy of Science and Technology
3	Dr. Chandana Rath	Council Member of MRSI, India 2019-2022
4	Dr. Sanjay Singh	Indian National Young Academy of Sciences (INYAS) membership (2021)

In past Fellowships are listed below.

Sl. No.	Name of Faculty Member	Details of Fellowship
1	Prof.Dhananjai Pandey	FNA, FASc.
2	Prof.Dhananjai Pandey	Asia Pacific Academy of Materials
3.	Prof. Dhananjai Pandey	INSA
4.	Prof. Rajiv Prakash	Asia Pacific Academy of Materials

Books, monographs authored/co-authored

Sl. No.	Name of Author/Co-Author	Title	Publisher
1.	Prof. Rajiv Prakash	"Recent Advances in Manufacturing, Automation, Design and Energy Technologies"	Springer Nature
2.	B. P. Majee and A. K. Mishra	**Chapter:** Fundamentals and Applications of Surface Enhanced Raman Spectroscopy, **Book:** Modern Techniques of Spectroscopy: Basics, Instrumentation, and Applications	**Springer Nature**

Editorial boards of journals

Sl. No.	Name of Faculty Member	Position (Editor/ member)	Name of Journal
1.	Pralay Maiti	Editorial Board Member	Signal Transduction and Targeted Therapy
2.	Pralay Maiti	Editorial Board Member	MedComm (Wiley)
3.	Chandana Rath	Editorial Board Member	Annals of Applied Sciences
4.	Ashish Kumar Mishra	Associate Editor	Mapana Journal of Sciences
5.	Nikhil Kumar	Editorial Board Member	Journal of Materials Science and Chemical Engineering

Design and Development Activities

New facilities added

Sl. No.	Details (Infrastructure, Equipments, etc.)	Value (in Lakhs of Rupees)
1.	Laser and mapping facility for existing Raman system	~ 18 Lakhs
2.	Probe sonicator	~ 2 Lakhs
3.	Magnetron sputtering	35 Lakhs
4.	FMR-Ferromagnetic Resonance	36 Lakhs

Patents filed

Sl. No.	Name of Faculty Member	Title of Patent
1.	Prof. Pralay Maiti	"Functionalized Fluoropolymer Membrane for Fuel Cell Applications" in "Nanoscale Engineering of Biomaterials: Properties and Applications Om Prakash, Ashok K. Pandey and Pralay Maiti Publisher: **Springer Singapore** ISBN: 978-981-16-3666-0; Pg 517-540 (2022)
2.	Prof. Rajiv Prakash	A Non-Invasive Method of Detecting N-Acetyl-ʙ-D-Glucosaminidase in Urine samples and A Kit Thereof. **Patent Application No.: 202211001892 dated 12 Jan 2022**
3.	Prof. Rajiv Prakash	Fluorescent Film and Spreadable Ink for Security Applications and Method of Preparation Thereof. **Patent Application No.: 202211009206 Dated 21-02-2022**
4.	Prof. Rajiv Prakash	Analyte Detection Based on Enhanced Chemiluminescence and Smartphone Imaging in Biological Fluids and Method Thereof. **Patent Application No. 202111051598 Dated**

Research and Consultancy

Sponsored research projects (Ongoing only)

Sl. No.	Title	Period	Funding Agency	Amount (in lakhs of Rs.)	Co-ordinator
1.	Photonic radiative cooler for passive sub-ambient cooling	2019-2022	IMPRINT-II (SERB)	41.88	Prof. Pralay Maiti

Sl. No.	Title	Period	Funding Agency	Amount (in lakhs of Rs.)	Co-ordinator
2.	Aging studies and estimation of thermal properties of liner materials	2019-2022	DRDO	175.0	Prof. Pralay Maiti
3.	3D Bio-Stereolithography for Engineering Functional Tissues (CCPI)	2020-2025	SERB	37.2464	Prof. Pralay Maiti
4.	Multifunctional Nanostructured Mn/ Fe doped CeCrO3 for Photocatalyst and Magnetic Switching	2020-2023	Core Research Grant-SERB, India	49 Lakhs INR	Dr. Chandana Rath
5.	Investigation of structural transformation in Rare earth doped HfO_2 by X-ray absorption spectroscopy	2020-2023	UGC-DAE CSR, Indore,	1.5 Lakhs with Travel cost	Dr. Chandana Rath
6.	Defects Analyses of Compound Semiconductor wafers	2021-22	Applied Materials India Pvt. Ltd	10.2	Dr. Chandan Upadhyay
7.	Development of High Tc Lead Free Piezoelectric Materials for Energy Harvesting	2020-2023	SERB	49.4 lakhs	Dr. Akhilesh Kumar Singh
8.	"Development of high performance, CMOS compatible and colour selective narrow-band photodetector for high-resolution imaging application"	2020- 2023	SERB, India	67.10	Dr. Bhola Nath Pal
9.	Fabrication of low power consuming inverted near-infra red AMOLEDs	2021-2024	DST, India	47.82	Dr. Bhola Nath Pal
10	Investigation of two dimensional transition metal dichalcogenides nanostructures as effective SERS substrates	2020- 2023	SERB, India	43.82	Dr. Ashish Kumar Mishra
11.	DST-FIST Level-II Project	2019-2024	DST	~Rs. 395 lakhs	All faculty members
12.	Mott Transistors Based Neuromorphic Memory Devices	2018-2022	DST, India.	101	Dr. Shrawan Mishra
13.	Nanoscale Interfacial Magnetic Skyrmions and its Applications in Memory Devices	2019-2022.	DST, India	103	Dr. Shrawan Mishra

Faculty members' participation with other universities under MoUs (Ongoing only)

Dr. Sanjay Singh has been nominated for fulfilling the contract of MOUs between University of West Bohemia (UWB) and Indian Institute of Technology (Banaras Hindu University) (IIT(BHU).

Research Publications

Sl. No.		No.
1	Total Number of Papers Published in Refereed National Journals	0
2	Total Number of Papers Published in Refereed International Journals	36
3	Total Number of Papers Presented in National Conferences	5
4	Total Number of Papers Presented in International Conferences	2

Refereed International Journals

1. Kumar, A., Srivastava, S. K., Srivastava, M. & **Prakash, Rajiv.** (2021) Electrochemical sensing of pioglitazone hydrochloride on N-doped r-GO modified commercial electrodes. *Analyst (RSC),* 146, 3578-3588. https://doi.org/10.1039/D1AN00224D.

2. Singh, P., Ojha, R.P., Kumar, S., Singh, A.K., and Prakash**, R.** (2020) Fe-doped MoS_2 nanomaterials with amplified peroxidase mimetic activity for the colorimetric detection of glutathione in human serum. *Materials Chemistry and Physics,* 267, [124684]. https://doi.org/10.1016/j.matchemphys.2021.124684.

3. Vinita, Nirala, N.R., & **Prakash, Rajiv** (2021) Facile and selective colorimetric assay of choline based on AuNPs - WS_2 QDs as a peroxidase mimic. *Microchemical Journal ,167,106312.* https://doi.org/10.1016/j.microc.2021.106312.

4. Jaiswal A., Kumar R. & **Prakash Rajiv** (2021) Iron/Iron Carbide (Fe/Fe_3C) Encapsulated in S, N Codoped Graphitic Carbon as a Robust HER Electrocatalyst. *ACS Publications, Energy Fuels*, 35, 19, 16046–16053. https://doi.org/10.1021/acs.energyfuels.1c02125.

5. Ojha, R.P., Pal, S., & **Prakash, Rajiv** (2021) Cu-Fe Prussian blue analog nanocube with intrinsic oxidase mimetic behavior for the noninvasive colorimetric detection of isoniazid in human urine. *Microchemical Journal,* 171, 106854. https://doi.org/10.1016/j.microc.2021.106854.

6. Chaudhary, V., Pandey, R.K., **Prakash, Rajiv,** Kumar, N., & Singh, A.K. (2021) Unfolding photophysical properties of poly(3-hexylthiophene)-MoS_2 organic-inorganic hybrid materials: an application to self-powered photodetectors. *Nanotechnology,*32,385201. https://doi.org/10.1088/1361-6528/ac07d2.

7. Nikhil, Ji, G., & **Prakash, Rajiv** (2021) Hydrothermal synthesis of Zn-Mg based layered double hydroxide coating over copper for its corrosion prevention in both chloride and hydroxide media, (*Springer*) *J. Miner. Metall. Mater.* https://doi.org/10.1007/s12613-020-2122-0.

8. Singh, S.K., Kumar, A., Ji, G., & **Prakash, Rajiv** (2021) Electrochemical and Computational Examination of Camellia Sinensis Assamica Biomolecules Ability to Retard Mild Steel Corrosion in Sodium Chloride Solution. *J Bio Tribo- Corros* (*Springer*) 8, 10. https://doi.org/10.1007/s40735-021-00611-7.

9. Pal, S., Kumar, A., Kumar, S., De, A.K., **Prakash, Rajiv.** & Sinha, I. (2022) Visible Light Photocatalysis on Magnetically Recyclable Fe_3O_4/Cu_2O Nanostructures. Catal *Lett*. https://doi.org/10.1007/s10562-021-03893-1.

10. Nikhil, Srivastava, S. K., Srivastava, A., Srivastava, M. & **Prakash, Rajiv** (2022) Electrochemical Sensing of Roxarsone Natural Biomass-Derived Two-Dimensional Carbon Material as Promising Electrode Material. *ACS Publications, ACS Omega*, 7, 3, 2908–2917. https://doi.org/10.1021/acsomega.1c05800.

11. Jaiswal A., Kumari, N., Kumar, A., & **Prakash, Rajiv** (2022) Enhanced Photodegradation of azo dye by Ag_2O/SnO_2 @ g-C_3N_4 Nanocomposites. *Materials Chemistry and Physics,*281, [125884]. https://doi.org/10.1016/j.matchemphys.2022.125884.

12. Verma, C.J., Singh, P., Ojha, R.P., & **Prakash, Rajiv.** (2022) Hierarchically porous 2D carbon from Bio-waste: a sustainable, rapid and efficient oxidase mimic for the colorimetric detection of ascorbic acid. Mater.Adv. (RSC), 3, [2749-2759]. https://doi.org/10.1039/D1MA01214B.

13. Mall, V.K., Ojha, R.P., Tiwari, P., & **Prakash, Rajiv** (2022) Immunosuppressive drug sensor based on MoS_2 Polycarboxyindole modified electrodes. *Results in Chemistry,*4, [100345]. https://doi.org/10.1016/j.rechem.2022.100345.

14. Functionalized Polyurethane Composite Gel Electrolyte with Cosensitized Photoanode for Higher Solar Cell Efficiency using Passivation Layer; Ravi Prakash, Ishwar Chandra Maurya, Pankaj Srivastava, Sourov Mondal, Biswajit Ray, **Pralay Maiti**; Nanoscale Advances 4, 1199-1212 (2022)

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16. $MnFe_2O_4$ nano-flower: a prospective material for bimodal hyperthermia S.K.Shaw, J.Kailashiya, Santosh K.Gupta, C.L.Prajapat, Sher Singh Meena, D.Dash, **P.Maiti**, N.K.Prasad; Journal of Alloys and Compounds 899, 163192 (1-12) (2022)

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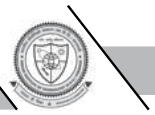

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28. Performance simulation of polymer-based nanoparticle and void dispersed photonic structures for radiative cooling Jay Prakash Bijarniya, Jahar Sarkar and Pralay Maiti Scientific Reports 11, 893 (2021)

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40. Sandeep Kumar, Taranga Dehury and Chandana (2021) Stabilization of cubic phase at room temperature and photoluminescence properties of Dy and Sm codoped HfO_2 nanoparticles, RathECS Journal of Solid State Science and Technology, 2021, 10081009

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3. O. O. Ajide; T. O. Dada; N. Idusuyi; F. A. Musa; O. A Aogo; A. S. Adebayo; N. Kumar. Influence of Casting Moulds on the Tensile and Corrosion Characteristics of Palm Kernel Shell Ash Reinforced Al6063-SiC Composite. Proceedings of Fifth International Conference on Inventive Material Science Applications. ICIMA 2022

4. Anand Sharma and Bhola Nath Pal, Sol-gel derived high performance low-voltage thin film transistor, Materials Today: Proceedings, Materials Today: Proceedings 2022, 48, 573–575

Proceedings of National Conferences

1. Manish Yadav and Chandana Rath (2021) Magnetization switching effect due to flipping of Ce3+ moment in one step synthesized CeCrO3 **The 65th** DAE Solid State Physics Symposium **(**DAE-SSPS 2021**) (15-17) December, 2021 organized by BARC, Mumbai, India.**
2. Akhilesh Kumar Yadav and Chandana Rath (2021) Synthesis Of Strontium/Barium Titanate ((Sr/Ba)TiO3) Nanoparticles Using New Sol-gel Technique And Study Of Their Optical Properties **The 65th** DAE Solid State Physics Symposium **(**DAE-SSPS 2021**) (15-17) December, 2021 organized by BARC, Mumbai, India**

Other activities

International collaboration/achievements by the Department/School:

- Kyushu Inst. of Tech, (Japan)
- Univ. of Girona (Spain)
- KAIST (S. Korea)
- Univ. Appl. Sci. (Russelsheim, Germany)
- Universität Mainz (Germany)
- Max Planck Institute for Chemical Physics of Solids, Dresden (Germany)
- Institute of Laue Langevin, Grenoble (France)
- Technical University of Munich (Germany)
- Max Planck Institute for Iron Research, Düsseldorf (Germany)
- Technical University Dresden (Germany)
- IMEM-CNR, Parma (Italy)
- Institute of Physics, Praha (Czech Republic)
- European Synchrotron Radiation Facility, Grenoble (France)
- Ming Chi University of Technology (Taiwan)

Key Instruments:

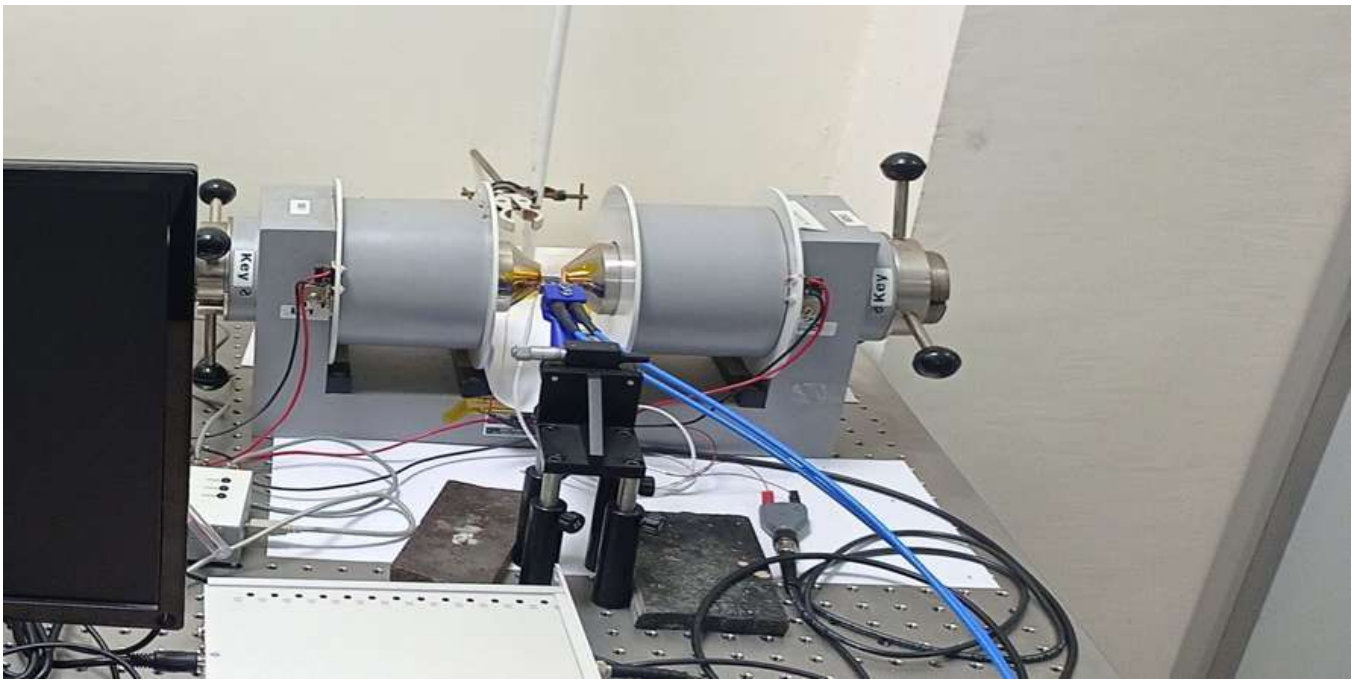

Figure 1. FMR set up. Operation possible for thin films samples only at room temperature. Exploration of magnetization relaxation dynamics is key objective of this set using till 17 GHz frequency excitation.

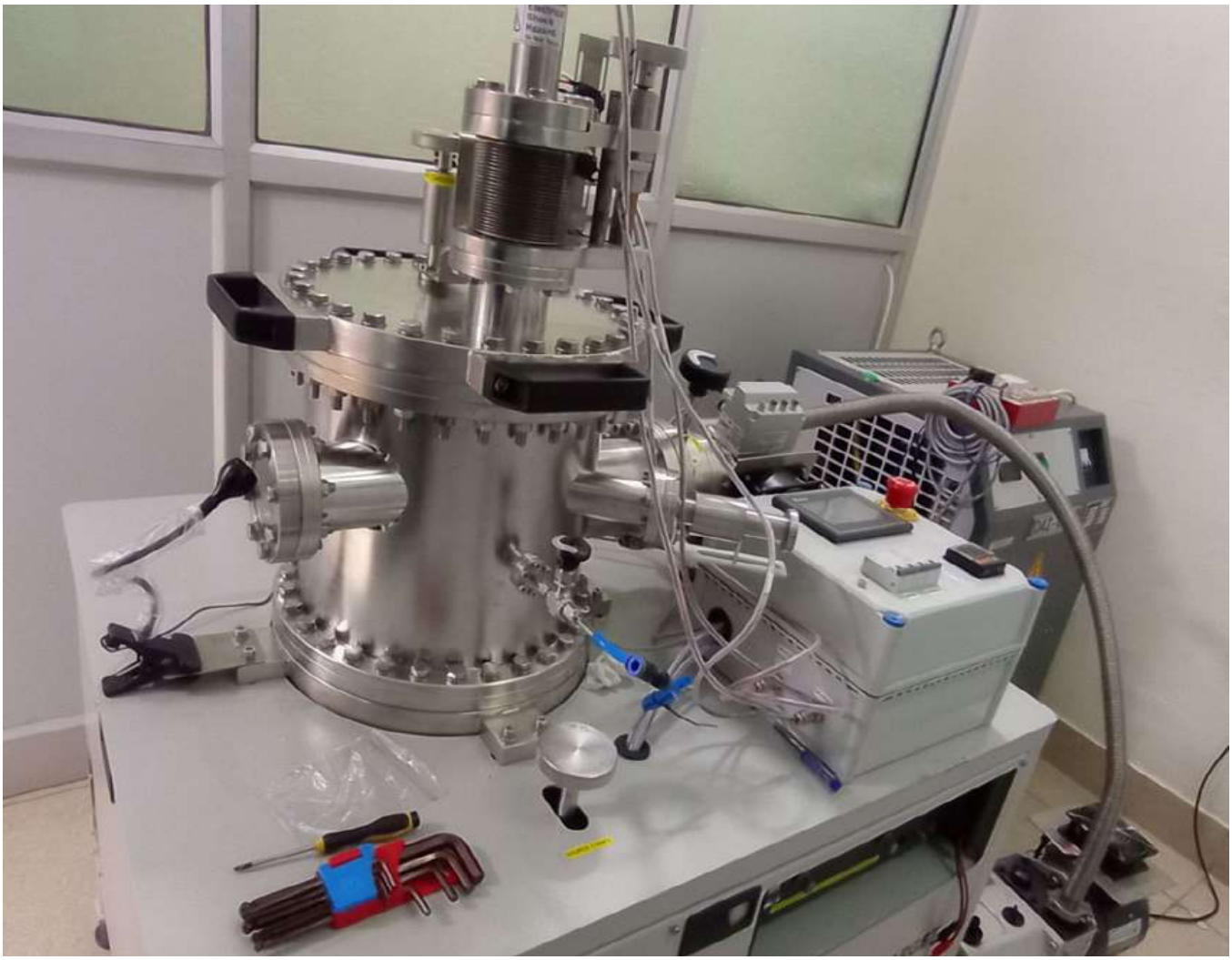

Figure 2. DC-magnetron sputtering units with four different targets and one magnetron source.

21. Department of Chemistry

Full Name of Department: Department of Chemistry

Year of Establishment: 1985

Head of the Department: Prof. Dhanesh Tiwary (w.e.f. 10th May, 2018 to 08.08.2021) and Prof. Yogesh Chandra Sharma (w.e.f. 09.08.2021-On going)

Brief introduction of the Department/School:

The Department of Chemistry, IIT-BHU, previously known as Department of Applied Chemistry (Institute of Technology), was established in the year of 1985. Earlier this Department was functioning as a Section in the School of Basic Sciences in Banaras Hindu University-Varanasi. This Department currently constitutes 15 faculty members including 07 Professors, 1 Institute professor, 3 Associate Professors and 4 Assistant Professors. The prime responsibility of the department is to organize the teaching of chemistry courses in various B. Tech and integrated M. Tech programs. In addition, this department is also providing an excellent research platform to the students in various thrust areas of chemistry.

The Department of Chemistry offers a five-year Dual Degree M. Tech program in Industrial Chemistry and Ph. D programs in Organic, Inorganic, Physical and Analytical chemistry. More than 100 Ph. D's have been awarded from this department and about 50 students are currently pursuing their research. Research programs in the department have been supported by DST, CSIR, BRNS, UGC and AICTE. The department has received 85 lakhs from DST-FIST for the establishment of research and teaching facilities. The department is presently equipped with primary instruments including AAS, AFM, LC MS & GC MS, UV-Vis spectrophotometers, FTIR, and powder-XRD, Particle size analyser, NMR, etc.

Major areas of Research

Computational Chemistry, Nanoparticles for adsorption and catalytic applications; Composite materials Organic synthesis, Carbohydrate chemistry; Photocatalytic digradatation Corrosion Inhibitors, Ant wear/Extreme Pressure Lubricant Additives, Sensors, Energy materials.

Area of the Department/School (in square meters): 503 square meter (Total Plinth Area)

Infrastructure

Sl. No.	Particulars	Number
1	No. of classrooms	03
2	No. of lecture halls	03
3	No. of laboratory	03
4	No. of computers available for students in the Department/School	25

Students on Roll

Sl. No.	Programme	I Year	II Year	III Year	IV Year	V Year & above
1.	B. Tech/B. Arch	NA	NA	NA	NA	NA
2.	Dual Degree	20	17	12	11	18
3.	M.Sc.	23	19	NA	NA	NA
4.	Ph. D (Under Institute Fellowship)	34 (T.A. Fellowships)				
5.	Ph. D (Under Project Fellowship)	Project: 04				
6.	Ph. D (Under Sponsored Category)	UGC: 10 CSIR: 11				

Names of students/scholars who attended conferences/ workshops/seminars and symposia abroad or in India

Sl. No.	Name of student	Roll No.	Conference/Seminar/ Symposia/ Workshop	Date & venue	Financial assistance from
India					
1	Kavita	17051013	Advanced Materials for Better Tomorrow (AMBT-2021) Impacting Energy, Health and Environment	13-17July, 2021, IIT-BHU **(Online mode)**	IIT(BHU)
2	Manish Kumar Tripathi	17051016	Conference cum workshop (International Winter School on Frontiers in Materials Science) via Virtual mode	December 06-10, 2021 (Jawaharlal Nehru Centre for Advanced Scientific Research Jakkur Post, Bangalore - 560 064 INDIA)	Not applicable
2	Mohammad Salman	17051501	CORCON2021	18th-20th Nov 2021, gateway India section Mumbai, India	No
3	Siddhi Jaiswal	17051503	International Conference on sustainable energy and environment conducted by IIT Kanpur	27 to 29 Dec. 2021, Lucknow	Conference fee = 5900/- Paid by self
4	Poonam Bhadoria	18051001	National Conference on Molecular Modelling and Simulations (NCMMS) 2022	28 Feb 2022 to 02 Mar. 2022 **(Online mode)**	Did not get any financial assistance
5	Poonam Bhadoria	18051001	2nd Commonwealth Chemistry Posters-Building Networks to address the Goals (Federation of Chemical Sciences Societies)	30 Sep. 2021 to 01 Oct. 2021 **(Online mode)**	Did not get any financial assistance
6	Vishnu Shankar Rai	18051507	International Conference on Supercapacitors & Batteries SUPERBATS-2022 by Department of Physics, IIT Kharagpur, India	28-30th Mar. 2022 **(Online mode)**	NA
Abroad					
1	Vishnu Shankar Rai	18051507	SPIE US Conference	21st April, 2021 **(Online mode)**	NA

Names of students/scholars who got prizes and awards outside the Institute

Sl. No.	Name of student	Roll no.	Name of prize	Date & venue	Prize awarded by
1	Sangeeta Mishra	18053011	Google Code Jam to I/O - Global Rank 15 (India Rank 4)	March 2022	Google Prize - $150 USD stipend
2	Sangeeta Mishra	18053011	CodeChef SnackDown - Top 60 Finalist	January 2022	Codechef
3	Sangeeta Mishra	18053011	TechGig Geek Goddess Coding Contest - Winner	December 2021	TechGig Prize - INR 1,50,000
4	Sangeeta Mishra	18053011	Women Coders Contest Indeed - Second Prize	September 2021	Indeed Prize - Apple Watch
5	Sangeeta Mishra	18053011	ACM ICPC Asia Amritapuri Regionals, Qualified for regionals	August 2021	ACM ICPC
6	Sangeeta Mishra	18053011	American Express Makeathon - Top 10 Finalist	April 2021	American Express
7	Sangeeta Mishra	18053011	Google Code Jam to I/O - Global Rank 58 (India Rank 11)	April 2021	Google

Names of Students/Scholars who went for foreign Internship

Sl. No.	Name of student	Roll No.	Name of the organization	Place of internship	Country	Duration
1	Akanksha Rajput	17053001	The Sparks Foundation	Singapore	Singapore	01st June 2021 to 03rd July 2021
2	Vishakha Sedwal	18053014	The Sparks Foundation	Singapore	Singapore	01st Sept. 2021 to 25th Sept. 2021

Faculty & their activities

Faculty and their areas of specialisation

Sl. No.	Name, Qualifications, Employee No.	Date of award of PhD degree	Major areas of specialization
Professors			
1	Prof. P. C. Pandey, M. Sc., Ph.D., Empl. ID. 12106	1986	Sensors Technology, bio electrochemistry, Organically modified silicate based Nanomaterial and opt electrochemistry
2	Prof. S. H. Hasan, M. Sc., Ph., Empl. ID. 13674	1989	Nanomaterials, Nuclear Materials, Water Remediation
3	Prof. V. Srivastava, M. Sc., Ph.D., Empl. ID. 17040	1985	Synthetic Organic and Green Chemistry
4	Prof. Y. C. Sharma, M. Sc., Ph.D. and D.Sc, Empl. ID. 17326	1984-1991	Water Pollution Control; Adsorption and Diffusion; Catalysis; Renewable Energy; Biodiesel Production and Characterization
5	Prof. Dhanesh Tiwary M. Sc., Ph.D., Empl. ID. 17328	1992	Bioremediation, composites for photoderadation, Development of surface functionalized iron oxide and mesoporous silica
6	Prof. K. D. Mandal, M.Sc., Ph.D., Empl.No. 17327	1989	Electro -Ceramics, Nano-materials, Materials Chemistry, Solid State Chemistry
Associate Professors			
1	Dr. Sundaram Singh, M. Sc., Ph.D., Empl. ID. 18364	1994-1999	Synthetic Organic Chemistry, Microwave Assisted Organic Synthesis
2	Dr. Indrajit Sinha, M. Sc., Ph.D. and Postdoc, Empl. ID. 17329	2000	Chemistry of nanomaterials and Computational Chemistry
3	Dr. Jeyakumar Kandasamy, M. Sc., Ph.D. and Postdoc, Empl. ID. 19849	31 July 2008	Organic Synthesis, Carbohydrate Chemistry
Assistant Professors			
1	Dr. Manisha Malviya M. Sc., Ph.D, Empl. ID. 18365	2008	Synthesis of Metal oxide nanoparticles, renewable energy, photo electrochemistry, bio electrochemistry, alkaline fuel cell
2	Dr. Asha Gupta, M. Sc., Ph.D. and Postdoc, Empl. ID. 50169	03.12.2010	Electrochemistry, Physical Chemistry, Catalysis
3	Dr. Arindam Indra M. Sc., Ph.D. and Postdoc, Empl. ID. 50172	18th August 2012	Artificial photosynthesis, Bioinspired energy conversion, Metal Organic Framework (MOF) derived catalysts for the water splitting, Photocatalytic organic reaction, Catalysis, Energy Conversion
4	Dr. V. Ramanathan, M. Sc., Ph.D., Empl. ID. 50208	May 2009	Laser Spectroscopy, Raman Spectroscopy and Imaging, Computational chemistry
5	Dr. Pandeeswar Makam M. Sc., Ph.D. and Postdoc, Empl. ID. 50259	29th Sept. 2011	Bio-inorganic chemistry, Supramolecular chemistry and Bio-organic chemistry

Sl. No.	Name, Qualifications, Employee No.	Date of award of PhD degree	Major areas of specialization
6	Dr. Samya Banerjee M. Sc., Ph.D. and Postdoc, Empl. ID. 50262	20th June 2015	Bio-inorganic, Organometallic chemistry, Co-ordination chemistry
7	Dr. Rosy, M. Sc., Ph.D. and Postdoc, Empl. ID. 50266	14th Feb. 2017	Electrochemistry, Electroanalytical Chemistry, Volta metric Sensors, Electrochemical Energy Storage, Atomic Layer Deposition, Nano materials

Technical and Non-Teaching Staff

Sl. No.	Name, Qualifications	Designation, Employee No.	Date of appointment in the department
1	Mr. Param Hans Ram, B.Sc.(Hons) & LLB	Technical Superintendent	15.12.2008
2	Mr. Prakash Narayan Pandey, Post Graduate	Technical Superintendent	22.12.1990
3	Mr. Sundip Kumar, Intermediate (Science)	Jr. Tech. Superintendent	26.02.2007
4	Mr. Rajesh Kumar, Intermediate (Science)	Senior Technician	06.08.2008
5	Mr. Jagdish Kumar, B.Sc.(Hons)	Senior Technician	06.08.2008
6	Mr. Pooran Singh Rana, Intermediate (Science)	Senior Technician	25.07.2014
7	Mr. Chhote Lal, High School	Senior Technician	25.07.2014
8	Ms. Anshu Kaushal, M.Sc. (Computer Science)	Junior Assistant	20.05.2017
9	Mr. Rambish Gond, M.A (Sociology)	Junior Assistant	07.06.2017
10	Mr. Lakhan Chand Jana, (9th Pass)	Ex. Peon	24.06.2000
11	Mr. Amit Anand Singh, B.A. (Hons), B. Lib. I. Sc. & M. Lib. I. Sc.	Care Taker Cum-Clerk	02.08.2017
12	Mr. Niraj Kumar, Intermediate	MTS	19.01.2017

Short-term courses/workshops/seminars/symposia/conferences organised by faculty members

Sl. No.	Coordinator	Title	Period
1	Dr. Rosy	International conference on Advanced Materials for Better Tomorrow: Impacting Energy, Heath, and Environment (**AMBT-2021,** virtual)	13th - 17th July 2021

Short-term courses/workshops/seminars/symposia/conferences/training programmes attended by faculty members in academic institutions and public sector undertakings

Sl. No.	Name of faculty member	Title	Period and venue
Seminars/Symposia/Conferences			
1	Dr. Indrajit Sinha	Webinar on World Conference of Nanotechnology Research and Applications	Invited talk 20-21 September 2021 organized by Hazel group-https://www.worldnanoscienceconference.com/webinar/
2	Arindam Indra	Needs and Metrics of Green Chemistry	31.03.2022 Webinar
3	Dr. Rosy	Informational Webinar on Electrochemical Methods: Techniques to Application	05 April 2021
4	Dr. Rosy	International Conference on Energy Efficiency and Energy Storage Technologies (ICOEST - 2021)	09-10 April 2021
5	Dr. Rosy	ASREEM 2021: International Conference on Advances in Sustainable Research for Energy and Environmental Management	06-08 August 2021

Sl. No.	Name of faculty member	Title	Period and venue
6	Dr. Samya Banerjee	Unlocking new anticancer strategies with metal complexes	(July 17, 2021), IIT (BHU), Advanced Materials for Better Tomorrow (AMBT 2021)

Special lectures delivered by faculty members in other institutions

Sl. No.	Name of faculty member	Topic of lecture	Institution	Date
1	Prof. Yogesh Chandra Sharma	"Functional materials for energy, environment and biomedical applications" (FARAON 22) on "Nanoadsorbents: the wonderful materials for water remediation" on 4 Feb, 2022., **(Online)**	organised by Norway and Madurai Kamraj University).	04.02.2022
		Challenges & Opportunities towards Sustainable Energy & Environmental Technology in India, On "Metal Rich Wastewater Reclamation Using Nano adsorbents	NIT Uttarakhand,	21 Feb to 25 Feb 2022
		"Biodiesel: a future fuel" at "Biofuel Prospects & Challenges	Organised by BD Dada Mane Polytechnic, Solapur, Maharashtra,	25 March, 2022
2	Dr. Arindam Indra	Integration of organic reactions with electrochemical water splitting: A perspective from green chemistry	Vivekananda College	31.03.2022
		Electrochemical water splitting: The concept and the prospect	Haldia Institute of Technology	29.10.2021 to 02.11.2021

Honours and awards

Sl. No.	Name of faculty member	Details of award
1	Prof. P. C. Pandey	SERB Qualified Unique Identification Document (SQUID) : SQUID-1958-PP-8501
2	Prof. Yogesh Chandra Sharma	Board Member, BRSI
		Member, Executive Committee, IAPS
		Member, Executive Committee, IAPS
3	Dr. V. Ramanathan	Chairman of the position paper team on the theme "Knowledge of India" for DSERT, Karnataka
		Executive Council member of Mahayogi Gorakhnath Medical University, Gorakhpur
		Executive Council member of Sri Sathya Sai School at Rishikesh, Uttarakhand
		Member of the Board of Hindu Studies
		Co-Convener of the CRSI Varanasi Chapter
		Member of National Council and Research Council on History of Science of INSA
4	Dr. Samya Banerjee	Newton International Fellowships Alumni 2021, the Royal Society, UK
5	Dr. Rosy	**Best Oral Presentation Award** by American Chemical Society in ASREEM 2021: International Conference on Advances in Sustainable Research for Energy and Environmental Management, Virtual Conference organized by NIT Surat, Gujarat, India (August 6 – 8, 2021)

Fellowships of academic and professional societies

Sl. No.	Name of faculty member	Details of fellowship
1	Prof. Yogesh Chandra Sharma	Fellow, International Society for Energy, Environment and Sustainability (ISEES) 2021

Books, monographs authored/co-authored

Sl. No.	Name of author/co-author	Title	Publisher
1	Manisha Malviya, .	Ch.3: Graphene derived materials as catalysts for the oxygen reduction reaction in book titled as graphene based nanomaterials as catalyst	Bentham Science Publishers Ltd., 978-981-5040-50-0, 2021.
2	Arindam Indra	Mater. Horizons: From Nat. to Nanomaterials: Photo-electrochemical Hydrogen Generation,	Springer Nature

Editorial boards of journals

Sl. No.	Name of faculty member	Position (editor/ member)	Name of journal
1	Prof. Yogesh Chandra Sharma	Member, Editorial Board	Energy Conversion and Management
		Member, Editorial Board	Indian Journal of Chemical Technology
		Member, Editorial Board	International Reviews in Chemical Engineering(IRECHE)
		Member, Editorial Board	International Journal on Advanced Materials and Technologies (IREAMT)
		Member, Editorial Board	Journal of Materials and Environmental Sciences

Design and Development Activities

New facilities added

Sl. No.	Details (Infrastructure, equipment, etc.)	Value (in lakhs of rupees)
1	Development of **Dr. Banerjee's lab "ChemBioCat"** at the department of Chemistry, IIT (BHU) with many instruments like Rotary evaporator, Hot air oven, set-up for advanced synthesis etc.	Ca. 15 lakhs

Patents filed

Sl. No.	Name of faculty member	Title of patent
1	Prof. Prem Chandra Pandey	A Process for Siloxane-Silver Nanoparticle Nanofluid as Potential Self-Assembling Disinfectan, Patent No. 202111033827
		A Process for Microwave Assisted Synthesis of Hybrid Nanoparticles Based Electrocatalytic Printing Ink For Hydrogen Peroxide Senisng, Patent No. 202111047038
		A Process For Making Oxygen Sensor For Monitoring Oxygen Present In Environment, Patent No. 202111051223
		A Process For Organotrialkoxysilane Functionalized Palladiumcobalt Nanoparticles As Potent Catalysts For Oxygen Evolutions Reaction Patent No. 202111060340
		Process for Metal Hexacyanoferrate nanoparticles based Removal of Cesium Ion and Fluorescence Sensing of the Same, Patent No. **202211016696**
2	Prof. Yogesh Chandra Sharma	Removal of chromium and orange g from aqueous solutions using nano crystalline zirconia as an adsorbent, tempe-1/12426/2021-del
		A process of making a new green nanoadsorbent for the removal of a hazardous cationic dye (methylene blue) from aqueous solutions, tempe-1/12201/2021-del

Patent Granted

Sl. No.	Name of faculty member	Title of patent
1	Prof. Prem Chandra Pandey	A Process for Making Disposable Glucose Sensor Strips and A Glucose Biosensor Made Therefrom, Indian Patent 377267
		A Process For Functional Alkoxysilane Stabiilized Nanocatalyst For Toxic Dye Degradation, Indian Patent 378521

Research and Consultancy

Sponsored research projects (Ongoing only)

Sl. No.	Title	Period	Funding agency	Amount (in lakhs of Rs.)	Project P.I
1	Metal hexacyanoferrate modified screen printed electrodes for the removal of cesium ions	2018-2021	DRDO	43.00	Prof. Prem Chandra Pandey
2	Development of magnetically recyclable visible light photocatalysts for H_2O_2 production	2019-2022	BRNS	Rs.34.05	Dr. Indrajit Sinha
3	Towards aqueous battery and fuel cell applications: Synthesis,kinetics and operand spectroelectrochemical studies of mixed metal selenide and polypyrrole composites as potential oxygen electrocatalysts	2020-2023	SERB-DST	Rs.32.00 (approx.)	Dr. Manisha Malviya
4	"Photolabile Protected Monosaccharides: Synthesis and Application to Oligosaccharides Synthesis Using a Continuous Flow Photoreactor	2016-2021	Indo-German DST-MPI	Rs.95.00	Dr.Jeyakumar Kandasamy
5	Design, Synthesis and Biological Evaluation of O-and C-Derivatives of Phenylethanoid Glycosides as a Multi-targeting Neuroprotective Disease Modifying Agents for Alzheimer's Disease	2020-2023	SERB-DST	Rs.48.00	Dr.Jeyakumar Kandasamy
6	Developing Superior Noble Metal-Free Oxygen Evolution Catalyst for Electrochemical Water Oxidation and Metal-Air Battery	24 months	SERB-DST	Rs.25.00	Dr. Asha Gupta
7	IKS@IITBHU(Varanasi)	2022-2024	IKS cell of AICTE, GoI	Rs.40.00	Dr. V. Ramanathan
8	Exploring mineral acids in Rasayana Shastra texts from ancient and medieval India	2022-2024	IKS cell of AICTE, GoI	Rs.10.00	Dr. V. Ramanathan
9	Digital TXSHILA	2022-2025	SHRI, DST	Rs.528.74	Co-PI: Dr. V. Ramanathan (PI: Mohan Raghavan, IITH)
10	IKS center at SAMVIT	2022-2024	IKS cell of AICTE, GoI	Rs.40.00	Co-PI: Dr. V. Ramanathan (PI: Dr. H Revathi, Samvit, Bangalore)
11	MRI studies of mantra chanting	2022-2025	SHRI,DST	Rs.120	Co-PI: Dr. V. Ramanathan (PI: Prof. Rama Jayasundar, AIMS, New Delhi)

Sl. No.	Title	Period	Funding agency	Amount (in lakhs of Rs.)	Project P.I
12	""New "metabolite-amyloids" hypothesis for the origin of life"	2022-2024	Science & Engineering Research Board (SERB)	30.00	Dr. Pandeeswar Makam
13	Bioinspired multifunctional peptide conjugate nanomaterials for energy, environment, and healthcare applications	2021-2023	IIT (BHU)	10.00	Dr. Pandeeswar Makam
14	"Development of photo-activated transfer hydrogenation catalysis for next generation cancer therapy"	2021-2026	DST-Inspire, Government of India	Rs.35.00	Dr. Samya Banerjee
15	Bio activation of cyclopentadienyl rings in organometallic complexes	2021-2023	The Royal Society	£ 5,970.00	Dr. Samya Banerjee
16	Design, Function, and Utilization of Multifunctional Surface Coatings for Next-Generation Lithium-ion Batteries	02 Years (13.12.21 to 13.12.23)	DST-SERB	Rs.33.06610	Dr. Rosy

Research publications

Total number of papers published in refereed National journals	02
Total number of papers published in refereed International journals	118
Total number of papers presented in National conferences	02
Total number of papers presented in International conferences	02

Refereed International journals

1. Pandey, P. C., Mitra, M. D., Shukla, S. and Narayan, R. J (2021) Organotrialkoxysilane-Functionalized Noble Metal Monometallic, Bimetallic, and Trimetallic Nanoparticle Mediated Non-Enzymatic Sensing of Glucose by Resonance Rayleigh Scattering, *Biosensors* 11, 122.

2. Pandey, P. C., Yadav, H. P., Shukla, S. and Narayan, R. J. (2021) Electrochemical Sensing and Removal of Cesium from Water Using Prussian Blue Nanoparticle-Modified Screen-Printed Electrodes, *Chemosensors* 9(9), 253.

3. Pandey, P. C. Mitra, M. D. Tiwari, A K. Singh, S. (2021). Synthetic incorporation of palladium-nickel bimetallic nanoparticles within mesoporous silica/silica nanoparticles as efficient and cheaper catalyst for both cationic and anionic dyes degradation, *Journal of Environmental Science and Health, Part A 56:4, 460-472*

4. Pandey, P.C., Mitra, M., Pandey, A.K. et al. (2021). Organotrialkoxysilane mediated rapid and controlled synthesis metal nanoparticles in both homogeneous and heterogeneous phase and their catalytic applications. MRS Advances 6, 43–53.

5. Pandey, P.C., Pandey, A.K. Narayan, R.J. (2021). Designing organotrialkoxysilane-functionalized microscale enzyme carrier: Spherical polymersomes with tunable catalytic potential. *Journal of Materials Research* 36, 3010–3020

6. Pandey, P.C Mitra, Murli Dhar, Shukla, Shubhangi and Narayan, Roger J (2021). Organotrialkoxysilane functionalized mesoporous Pd–Ni nanocatalyst for selective hydrazine decomposition and sensing, MRS Communications 11:78–85.

7. Pandey, P. C.; Shukla, S.; Narayan, R.J. (2021) Organotrialkoxysilane Functionalized Prussian Blue Nanoparticles-Mediated Fluorescence Sensing of Arsenic(III). *Nanomaterials* 11, 1145.

8. Pandey, P. C., Shukla, S. and Narayan, R. J. (2021). Organotrialkoxysilane-mediated synthesis of Ni–Pd nanocatalysts at lower concentrations of noble metal: Catalysts for faster hydrogen evolution kinetics, *Journal of Vacuum Science & Technology B* 39, 032802.

9. Shukla, S.; Pandey, P.C.; Narayan, R.J. (2021). Tunable Quantum Photoinitiators for Radical Photopolymerization. *Polymers*, 13, 2694.

10. Chandra, S., Bano, D., Sahoo, K., Kumar, D., Kumar, V., Yadav, P. K., Hasan, S. H. (2022). Synthesis of fluorescent carbon quantum dots from Jatropha fruits and their application in fluorometric sensor for the detection of chlorpyrifos. Microchemical Journal, 172, 106953.

11. Yadav, P. K., Upadhyay, R. K., Kumar, D., Bano, D., Chandra, S., Jit, S., Hasan, S. H. (2021). Synthesis of green fluorescent carbon quantum dots from the latex of Ficus benghalensis for the detection of tyrosine and fabrication of Schottky barrier diode. New Journal of Chemistry, 45(28), 12549-12556.

12. Kumar, V., Upadhyay, R. K., Bano, D., Chandra, S., Kumar, D., Jit, S., Hasan, S. H. (2021). The fabrication and characterization of a supramolecular Cu-based metallogel thin-film based Schottky diode. New Journal of Chemistry, 45(14), 6273-6280.

13. Singh D. C., Quraishi M.A., Srivastava V., Haque J. and Ebrahimi B. El. (2021) Virgin and chemically functionalized amino acids as green corrosion inhibitors: Influence of molecular structure through experimental and in silico studies. *Journal of Molecular Structure.* 1226, 129259.

14. Salman M., Srivastava, V., Chauhan D. S., Haque J. and Quraishi M. A. (2021) Chromeno naphthyridines based heterocyclic compounds as novel acidizing corrosion inhibitors: Experimental, surface and computational study. Journal of Molecular *Liquids*. 322, 114825.

15. Haque J., Verma C., Srivastava V. and Nik W.B. (2021) Corrosion inhibition of Mild steel in 1M HCl using environmentally benign Thevetia peruviana flower extracts, *J. Sustainable Chemistry and Pharmacy*, 19, 100354.

16. Chauhan S. , Mishra A., Verma P., and Srivastava V, (2021) Solar Energy Mediated Green Synthesis of Tetrahydrobenzo[b]Pyran using L-Ascorbic Acid as an Organocatalyst in Aqueous Medium, *Organic Preparations and Procedures International*, 53, 441-454.

17. Salmana M., Srivastava V., Quraishi M. A., Chauhan D. S., Ansari K. R. and Haque J. (2021) Quinolone Carbonitriles as Novel Inhibitors for N80 Steel Corrosion in Oil-Well Acidizing: Experimental and Computational Insights, *Russian Journal of Electrochemistry,* 57, 228–244.

18. Srivastava V., Salman M., Chauhan D. S., Abdel-Azeimc S., Quraishi M.A. (2021) (E)-2-styryl-1H-benzo[d] imidazole as novel green corrosion inhibitor for carbon steel: Experimental and computational approach, *Journal of Molecular Liquids*, 324, 115010.

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Proceedings of International conferences

1. **Srivastava V.** Oral presentation at international conference **Corcon 2021, 18-21 November** in Mumbai, (INDIA).

2. Poonam Bhadoria and **V. Ramanathan.** 2021. 2nd Commonwealth Chemistry Posters-Building Networks to address the Goals (Federation of Chemical Sciences Societies), United Kingdom.

Proceedings of National conferences

1. Poonam Bhadoria and **V. Ramanathan.** 2022. National Conference on Molecular Modelling and Simulations (NCMMS) 2022

2. Manish Kumar Tripathi and **V. Ramanathan.** 2021. (International Winter School on Frontiers in Materials Science), JNCASR Bengaluru.

Any other Information

1. **Dr. V. Ramanathan:**

   i) Chairman of the position paper team on the theme "Knowledge of India" for DSERT, Karnataka

   ii) Executive Council member of Mahayogi Gorakhnath Medical University, Gorakhpur

   iii) Executive Council member of Sri Sathya Sai School at Rishikesh, Uttarakhand

   iv) Member of the Board of Hindu Studies

   v) Co-Convener of the CRSI Varanasi Chapter

   vi) Member of National Council and Research Council on History of Science of INSA

22. Department of Mathematical Sciences

Full Name of Department: Department of Mathematical Sciences

Year of Establishment: 1985

Head of the Department: Prof. Sanjay Kumar Pandey w.e.f. 01.01.2022

Brief introduction of the Department/School:

Department of Mathematical Sciences began its journey in the year 1968 as a section to assist engineering departments of the institute which, in the true sense, pioneered engineering education in the nation. It soon acquired the status of a full-fledged department in 1985. The department caters to the needs of the undergraduate as well as post-graduate students of the Institute. It runs a five years' Integrated Dual Degree program in Mathematics & Computing since 2005. This is one of the most sought courses offered by the institute. The top jobs in terms of the annual package by reputed MNCs are offered to the students for this course which indicates the popularity and usefulness of the course for the industrial growth in general and software industry, in particular, under present circumstances.

The department aims to emphasize research in analysis, algebra, topology, mathematical modelling, and other applied areas of mathematics. Be it functional analysis, algebra, numerical optimization**,** harmonic analysis, fracture mechanics, solid mechanics, fluid dynamics, heat and mass transfer, biomathematics, digital image processing, graph theory, parallel computing, queuing theory and many more fields of applied nature, the department's contribution is enormous in terms of numerous research papers published in reputed international journals over the past few decades. Computing is the glamour of the department. It annexes several dimensions in terms of new and growing areas of research and further facilitates the simulation of mathematical models constructed for interdisciplinary areas.

Major areas of Research

Functional Analysis, Fuzzy & Rough Set Theory, Soft Computing, Fuzzy Topology, Heat and Mass Transfer, Mathematical Modelling, Nonlinear Waves, Nonlinear Dynamics, Pseudo-Differential Operators, Wavelet Analysis and Distribution Theory, Fractional Calculus, Numerical analysis, Parallel Computing, Theoretical & Numerical Optimization, Harmonic analysis, Differential geometry, Mathematical modeling on Solid Mechanics, Fracture Mechanics, Coupled Thermomechanics, Bio-Transport Processes, Biomechanics, Free Boundary Problems, Fluid dynamics, Image Processing, Graph Theory and Network Sciences, Queuing theory.

Area of the Department/School (in square meters): New Building = 1080 Sq-meter 2- Old Building = 585 Sq-meter

Infrastructure

Sl. No.	Particulars	Number
1	No. of classrooms	04
2	No. of lecture halls	02
3	No. of laboratory	02
4	No. of computers available for students in the Department/School	80

Unique Achievement / Preposition of the Department/School

The department has major goal to become a Centre of Excellence in teaching, learning and quality oriented research in Mathematical Sciences so that it can contribute to the development of the nation and take the department to a greater height and make it recognized globally through fundamental research work in mathematics.

Major achievement of the department includes

Many IDD students are offered top jobs with the highest packages in the institute by MNCs. Average package: 30 Lacs

Some IDD alumni have gone to prestigious universities in the US for higher studies.

Department has published more that 76 research papers in reputed international journals during 31.03.2021 to 01.04.2022

Organized two international conference/workshop in the Department during 2021-22.

Academic programmes offered

- Integrated Dual Degree in Mathematics and Computing
- Ph.D.

Students on Roll

Sl. No.	Programme	I Year	II Year	III Year	IV Year	V Year & above
1.	B. Tech/B. Arch					
2.	Dual Degree	52	58	48	23	22
3.	M. Tech/ M. Pharm	N.A.				
4.	Ph. D (Under Institute Fellowship)	2	3	11	19	0
5.	Ph. D (Under Project Fellowship)	0	0	3	0	0
6.	Ph. D (Under external fellowship Category)	8	11	15	24	10

Names of students/scholars who attended conferences/ workshops/seminars and symposia abroad or in India

Sl. No.	Name of student	Roll no.	Conference/Seminar/Symposia/Workshop	Date & venue	Financial assistance from
India					
1	Gaurav	19121021	37th Annual National Conference of The Mathematical Society Banaras Hindu University on Modern Mathematics and its Applications	29-30 January 2022, Dept. of Mathematics, Institute of Science, BHU, Varanasi	Nil
2	Pragya Shukla	17121010	CONIAPS- XXVII	October 26-28, 2021, Central University of Kerala	NA
3	Pragya Shukla	17121010	NCAPM-RAMAA-2022	May 7-8, 2022, DST-CIMS, Banaras Hindu University, Varanasi	NA
4	Jay Singh Maurya	17121017	CONIAPS- XXVII	October 26-28, 2021, Central University of Kerala	NA
5	Jay Singh Maurya	17121017	NCAPM-RAMAA-2022	May 7-8, 2022, DST-CIMS, Banaras Hindu University, Varanasi	NA
6	Kush Kumar Mishra		NCAPM-RAMAA-2022	May 7-8, 2022, DST-CIMS, Banaras Hindu University, Varanasi	NA

Sl. No.	Name of student	Roll no.	Conference/Seminar/Symposia/Workshop	Date & venue	Financial assistance from
7	Deeksha Singh	18121526	National Conference on Numerical Analysis and Applications	06-07 January 2022 NIT Puducherry	None
8	Farheen Sultana	181215127	National Conference on Numerical Analysis and Applications	06-07 January 2022 NIT Puducherry	None
9	Deeksha Singh	18121516	3rd National Conference on Recent 'Advancement in Physical Sciences'	19-20 December 2021 NIT Uttarakhand	None
10	Farheen Sultana	18121517	3rd National Conference on Recent 'Advancement in Physical Sciences'	19-20 December 2021 NIT Uttarakhand	None
11	Deeksha Singh	18121516	International Workshop on "Fractional Derivatives: Theory and Computations with Applications (FDTCA 2021)"	12-14 November 2021 IIT (BHU)	None
12	Farheen Sultana	18121517	International Workshop on "Fractional Derivatives: Theory and Computations with Applications (FDTCA 2021)"	12-14 November 2021 IIT (BHU)	None
13	Eti Goel	19121012	International Workshop on "Fractional Derivatives: Theory and Computations with Applications (FDTCA 2021)"	12-14 November 2021 IIT (BHU)	None
14	Sarita Kumari	19121022	International Workshop on "Fractional Derivatives: Theory and Computations with Applications (FDTCA 2021)"	12-14 November 2021 IIT (BHU)	None
15	Jesmina Pervin	18121018	8th biennial Canadian Discrete and Algorithmic Mathematics Conference (CanaDAM)	May 25-28, 2021, online	self-funded
16	Ajay Kumar	17121008	CanaDAM-2021	Virtual 25-28 may 2021	Contingency
17	Shiv Kumar	17121501	Recent Advances in Pure and Applied Algebra	26-28 October 2021, NIT Jamshedpur, India	Online Mode
18	Shiv Kumar	17121501	International Conference on Mathematical Sciences (ICMS-2021)	07-09 October 2021, SVNIT, Surat, Gujarat, India	Online Mode
19	Sonal Gupta	17121007	Indian Women and Mathematics, Annual Conference 2021-22	28-30 January 2022, Banasthali Vidyapith, Rajasthan, India	Online Mode
20	Pradeep Rai	19121005	International Workshop on Post-Quantum Cryptography	10-11 December 2021, LNMIIT Jaipur, India	Online Mode
21	Pradeep Rai	19121005	International Conference on Cryptology	13-15 December 2021, LNMIIT Jaipur, India	Online Mode

Faculty & their activities

Faculty and their areas of specialisation

Sl. No.	Name, Qualifications, Employee No.	Date of award of PhD degree	Major areas of specialization
Professors			
1	Tanmoy Som, Ph. D. Emp. No. 18386	1986	Functional Analysis, Mathematical Modelling, Soft Computing using Fuzzy-Rough Set Theory
2	L P Singh, Ph.D. Emp. No.17162	1987	Nonlinear Waves, Hyperbolic Partial Differential Equations, Computational Fluid Dynamics
3	S K Pandey, Ph.D., Emp. No. 17315	1998	Biomechanics, Viscous Fluid Dynamics, Graph Theory, Digital Image Processing
4	S Mukhopadhyay, Ph.D., Emp. No. 17180	1998	Mathematical Modelling on Coupled Thermomechanical problems, Non-Fourier Heat Conduction, Fractional order Thermoelasticity.

Sl. No.	Name, Qualifications, Employee No.	Date of award of PhD degree	Major areas of specialization
5	Subir Das, Ph.D. Emp. No.18373	1999	Fracture Mechanics, Mathematical Modelling, Nonlinear Dynamics
6	S K Upadhyay, Ph.D. Emp. No 18409	1993	Wavelet Analysis, Distribution Theory, Pseudo-Differential Operator
7	Murali Krishna Vemuri, Ph.D. Emp. No.50167	1997	Harmonic Analysis, Differential Geometry.
Associate Professors			
1	Ashok Ji Gupta, Ph.D. Emp. No17179	2003	Theory of Rings and Modules
2	Rajeev, Ph.D. Emp. No. 17745	2009	Moving Boundary Problems
3	Vineet Kumar Singh, Ph.D., Emp. No.19772	2009	Numerical Methods for integral and Differential Equations, Wavelets, Operational Matrix Schemes
4	Rajesh Kumar Pandey, Ph.D, Emp. No.19846	2009	Integro-Differential Equations, Image Processing, Fractional Derivatives.
Assistant Professors			
1	Anuradha Banerjee, Ph.D., Emp. No. 19773	2012	Stochastic Modelling in Queuing Theory
2	Sunil Kumar, Ph.D. Emp. No. 50069	2012	Numerical analysis, Image Processing, Artificial Intelligence
3	Debdas Ghosh, Ph.D Emp. No.50068	2014	Multiobjective Optimization, Interval Optimization, Fuzzy Geometry
4	Lavanya Selvaganesh, PhD, Emp. No. 50070	2008	Graph Theory, Network Sciences, Analysis of Complex Networks
5	Dr. Abhash Kumar Jha, Ph.D., Emp. No. 50242	2017	Number Theory, Elliptic and Siegel modular forms.
6	Dr. Sheela Verma, Ph.D.	2019	Spectral Geometry
7	Dr. Divya Goel	2020	Analysis of Partial differential equations
Visiting Faculty			
1	Dr. Amit Kumar	February 20, 2018	Probability Theory

Technical and Non-Teaching Staff

Sl. No.	Name, Qualifications	Designation, Employee No.	Date of appointment in the department
1	Mr. Anil Kumar Mishra, B.A.	Junior Technical Superintendent, 18068	19.2.2007
2	Dr. Piush Kumar Singh, Ph.D	Junior Technical Superintendent, 18649	06.08.2008
3	Mr. Somdeo Keshari, M.Lib.Sci.	Junior Assistant, 19879	18.02.2015
4	Mr. Amod Kumar Patel, B.Tech.	Office Assistant (Skilled Daily Wager)	30.05.2014
5	Mr. Pintu Kumar Mahto, B.Sc.	M.T.S.	13.04.2018

Short-term courses/ workshops/seminars/symposia/conferences organised by faculty members

Sl. No.	Coordinator	Title	Period
1	Prof. T Som	International Conference on Nonlinear Analysis & Optimization and National Mathematics Day	Dec 21-23, 2021.

Sl. No.	Coordinator	Title	Period
2	Dr. Rajesh K. Pandey	International Workshop on "Fractional Derivatives: Theory and Computations with Applications (FDTCA 2021)"	12-14 November 2021

Short-term courses/workshops/seminars/symposia/conferences/training programmes attended by faculty members in academic institutions and public sector undertakings

Sl. No.	Name of faculty member	Title	Period and venue
Seminars/Symposia/Conferences			
1	Dr. Abhash Kumar Jha	34th Automorphic Forms Workshop	March 17-19, 2022 Provo, Utah USA (online)
2	Dr. Lavanya Selvaganesh	CanaDAM 2021	May 25-28, 2021, Canada, Online.
3	Dr. Lavanya Selvaganesh	Research Discussion on Groups and Graphs	March 24, 2021 – August 12,2021 (20 Sessions, weekly online) Cochin University of Science and Technology, Kerala, India,
4	Dr. Lavanya Selvaganesh	International Conference on Recent Trends in Modern Mathematics (RTMM-2021),	September 23-24, 2021 (Online) St. John College Palayamkottai, Tamilnadu, India
5	Dr. Lavanya Selvaganesh	International Workshop in Graphs from Algebraic Structures,	October 7-9, 2021, Manonmaniam Sundaranar University, Tirunelveli, Tamilnadu, India,
6	Dr. Lavanya Selvaganesh	Algebraic Graph Theory Seminar,	Weekly Every Monday (Online) University of Waterloo, Canada
7	Dr. Lavanya Selvaganesh	International Conference on Discrete Mathematics	October 11-13, 2021 Manonmaniam Sundaranar University, Tirunelveli, Tamilnadu, India
8	Dr. Lavanya Selvaganesh	87th Annual Conference of the Indian Mathematical Society,(Online Conference)	Dec 4-7, 2021, Jawaharlal Nehru Engineering College, MGM University, Aurangabad
9	Prof. T Som	International Webinar on Mathematical Analysis and Its Applications (IWMAA2021)	April 8-9, 2021, Tripura University, Agartala
10	Prof. T Som	International Workshop On Nonlinear Analysis And Its Applications (IWNAA-2021)	Oct 13-16, 2021, The University of Nis, Serbia
11	Prof. T Som	International Conference of International Academy of Physical Sciences on "Fuzzy and Computational Mathematics".	Oct 26-28, 2021, NIT, Agartala
12	Prof. T Som	International e-Conference on Rough Sets-Generalizations and Applications	Nov 11–13, 2021, Fuzzy and Rough Sets Association, Agartala,
13	Prof. T Som	International Conference on Recent Advances in Nonlinear Functional Analysis and its Applications – 2022"	Jan 29-30, 2022, Andhra University, Visakhapatnam
14	Dr. Divya Goel	Workshop on "Fractional Derivatives: Theory & Computations with Applications (FDTCA 2021)"	12-14 November, 2021 IIT(BHU) (online)
15	Dr. S.K. Upadhyay	Wavelet multiplier associated with Watson transform	ICRAPAM 2021, September 24-27, 2021, Goddess of Bodrum Isis Hotels, Bodrum, Mugla-Turkey (Online)
16	Dr. S.K. Upadhyay	The Characterizations of Continuous Fractional Bessel Wavelet Transform	ICFDA-2020, September 6-8, 2021, Warsaw, Poland (Online)

Sl. No.	Name of faculty member	Title	Period and venue
17	Dr. Rajesh Kumar Pandey	Approximations of Fractional Derivatives with Applications in Solving Fractional PDEs	9th -11th March, 2022. University of Madras, 25th Ramanujan Symposium-National Conference on Nonlinear Fractional Differential Equations
18	Dr. Rajesh Kumar Pandey	Fractional Filters for Retinal Blood Vessel Segmentation	6th - 7th January 2022 National Conference on Numerical Analysis and Applications (online mode) at NIT Puducherry, Karaikal
19	Ashok Ji Gupta	International Conference on Non Commutative Rings and their Applications, VII	July 5-7, 2021, France (onlinemode)
20	Ashok Ji Gupta	RECENT ADVANCES IN PURE & APPLIED ALGEBRA (RAPAA)	October 26-28, 2021, NIT Jamshedpur, India
21			
22	Prof. T Som	Council Meetings of Calcutta Mathematical Society	Calcutta Mathematical Society, Salt Lake, Kolkata
23	Dr. S.K. Upadhyay	BOS	13-05-2022, M.M.M. T.U. Gorakhpur (Online)
24	Dr. S.K. Upadhyay	BOS	24-03-2022, Sarvajanik College of Engineering & Technology, Surat
25	**Dr. Rajesh Kumar Pandey**	**General Chair and Keynote Speaker in International Conference on Intelligent Vision and Computing (ICIVC2021)**	**October 03-04, 2021.** **Sur University College Oman Technically Sponsored by Soft Computing Research Society during**

Special lectures delivered by faculty members in other institutions

Sl. No.	Name of faculty member	Topic of lecture	Institution	Date
1	Dr. Abhash Kumar Jha	Modular forms	DST-CIMS, BHU	July 10, 2021.
2	Dr. Abhash Kumar Jha	L- functions	BBAU, Lucknow	September 30, 2021
3	Dr. Abhash Kumar Jha	Partition function	U. P. College Varanasi, Manav Rachna University, VIT-AP University	December 22, 2021
4	Dr. Lavanya Selvaganesh	Bounds Of The Symmetric Division Deg Index For Graphs With Cyclomatic Number At Most 2 and With A Perfect Matching	Minisymposium in Chemical Graph Theory, CanaDAM 2021	May 26, 2021
5	Dr. Lavanya Selvaganesh	"Some Recent Results on Superpower Graph of Groups",	Research Discussion on Groups and Graphs, Cochin University of Science and Technology, Kerala, India,	14 July 2021.
6	Dr. Lavanya Selvaganesh	Spectral Properties of Eccentricity matrix for special classes of graphs	Algebraic Graph Theory Seminar, University of Waterloo, Canada,	16 August 2021
7	Dr. Lavanya Selvaganesh	Spectral Properties of Eccentricity matrix	International Conference on Recent Trends in Modern Mathematics (RTMM-2021), St. John College Palayamkottai, Tamilnadu, India	24 September 2021
8	Dr. Lavanya Selvaganesh	Power Graphs from Groups	International Workshop in Graphs from Algebraic Structures, Manonmaniam Sundaranar University, Tirunelveli, Tamilnadu, India	October 07-09, 2021.

Sl. No.	Name of faculty member	Topic of lecture	Institution	Date
9	Dr. Lavanya Selvaganesh	Role of Matrices in Engineering and Network Sciences	National Workshop on Glimpses of Engineering Mathematics with its Applications, SSN College of Engineering, Chennai	February 16, 2022
10	Prof. T Som	A Short Survey of Fixed Point Theory	Tripura University, Agartala	April 8-9, 2021
11	Prof. T Som	Fuzzy Relations & Applications and Fuzzy Numbers & Applications	Guru Ghasidas University, Bilaspur	Sept 13-25, 2021.
12	Prof. T Som	A brief survey on fixed point theory	The University of Nis, Serbia	Oct 13-16, 2021
13	Prof. T Som	Intuitionistic Fuzzy Neighborhood Rough Set Model for Feature Selection	NIT, Agartala	Oct 26-28, 2021
14	Prof. T Som	Intuitionistic Fuzzy Neighborhood Rough Set Model for Feature Selection	Fuzzy and Rough Sets Association, Agartala	Nov 11–13, 2021
15	Prof. T Som	Few recent fixed point results with some applications	Andhra University, Visakhapatnam	Jan 29-30, 2022
16	Prof. Santwana Mukhopadhyay	Mathematical Analysis on Coupled Dynamical Thermoelasticity	IIT Indore	February 17, 2022
17	Prof. Santwana Mukhopadhyay	Coupled Thermoelasticity under Non Fourier heat conduction: Mathematical analysis of a recent theory	University of Mumbai during National Day celebration	February 28, 2022.
18	Prof. Santwana Mukhopadhyay	Mathematical analysis of a recent heat conduction model: Domain of influence results	IIT (BHU)	December 21-24, 2021 (delivered lecture on 23rd Dec)
19	Dr. S.K. Upadhyay	Bessel Wavelet Transform	SVNIT-Surat	08-12-2021
20	Dr. S.K. Upadhyay	The continuous fractional wavelet transform through Heat equation	Department of Applied Mathematics, Shri Shankaracharya Technical Campus, Chhattisgarh Swami Vivakanand Technical University, Bhilai	27-08-2021
21	Dr. S.K. Upadhyay	Bessel Wavelet Transform of Distributions	Banaras Hindu University	January 30, 2022
22	Dr. S.K. Upadhyay	The Characterization of Continuous Fractional Wavelet Transform	Indian Institute of Technology(BHU), Varanasi	13-11-2021
23	Dr. S.K. Upadhyay	The Wavelet Transform	Sarvajanik College of Engineering & Technology, Surat	25-03-2022
24	Dr. Rajesh K. Pandey	Fractional Calculus Applications in Image Processing	Dr. Hari Singh Gaur Vishwavidyalaya Sagar Madhya Pradesh India	Sept. 25, 2021
25	Dr. Rajesh K. Pandey	Fractional Filters: Application in Retinal Vessel Segmentation	Department of Mathematics, Faculty of Science, JECRC Jaipur	Aug.06, 2021
26	Dr. Rajesh K. Pandey	Approximation of Fractional Derivatives and Its Applications	DIT University Dehradoon	July15, 2021
27	Prof S K Pandey	Characteristics governing dynamics of whirlwinds	Shri Sai Baba AdarshMahavidyalaya, Ambikapur, Chhattisgarh	National Webinar, October 23, 2021
28	Prof S K Pandey	The Beauty of the Queen that loved Unyielding Principles	Bihar Mathematical Society at Madhepura, Bihar	October 27, 2021
29	Prof S K Pandey	Exploration of Characteristics Governing Dynamics of Whirlwinds	Bihar Mathematical Society at Bhabhua	October 28, 2021

Sl. No.	Name of faculty member	Topic of lecture	Institution	Date
30	Prof S K Pandey	Mathematical modelling if intensification of whirlwinds	CONIAPS XXVII in Karnataka	October 26, 2021
31	Prof S K Pandey	A mathematical model for investigating impact of Hiatus hernia on swallowing	Bihar Mathematical Society at Khagaria	November 03, 2021

Visits abroad by faculty members

Sl. No.	Name of faculty member	Country visited	Date of leaving India	Date of returning India	Purpose of visit	Funding from
1	M. K. Vemuri	U.S.A.	16/10/21	29/10/21	Research	Self

Books, monographs authored/co-authored

Sl. No.	Name of author/co-author	Title	Publisher
1	Pankhuri Jain, Anoop Kumar Tiwari, Tanmoy Som	Computational Management	Springer
2	Sharma H., Vyas V. K., Pandey R. K., and Prasad M.	Proceedings of the International Conference on Intelligent Vision and Computing (ICIVC 2021) IX, 582.	Springer

Editorial boards of journals

Sl. No.	Name of faculty member	Position (editor/ member)	Name of journal
1	Prof Sanjay Kumar Pandey	Executive Editor (Section-Mathematics)	Journal of International Academy of Physical Sciences, Allahabad
2	Prof Sanjay Kumar Pandey	Member, Editorial Board	ISST Journal of Mathematics and Computing System
3	Prof. T. Som	Guest Editor	International J. of Fuzzy Computation and Modelling
4	Prof. T Som	Member	Indian Academy of Mathematics
5	Prof. S. Mukhopadhyay	Member of Editorial board	Journal of Thermal Stresses
6	Prof. S. Mukhopadhyay	Member of Editorial board	Mathematics and Mechanics of Solids
7	Prof. S. Mukhopadhyay	Member of Editorial board	Computational Methods in Science & Technology
8	Prof. S. Mukhopadhyay	Member of Editorial board	International Journal of Thermoelasticity
9	Prof. S. Das	Member of Editorial Board	Chinese Journal of Physics
10	Prof. S. Das	Associate Editor	STRPM - An International Journal
11	Dr. Rajesh Kumar Pandey	Guest Editor	Fractal and Fractional
12	Dr. Rajesh Kumar Pandey	Member of Editorial Board	Journal of Mathematics and computational intelligence (JMCI)

Patents filed

Sl. No.	Name of faculty member	Title of patent
1	Tanmoy Som, Annop Kumar Tiwar, Pankhuri Jain	System For Predicting Anti-Tubercular Peptides From Sequence Information Using Divergence Measure-Based Intuitionistic Fuzzy-Rough Feature Selection"

Research and Consultancy

Sponsored research projects (Ongoing only)

Sl. No.	Title	Period	Funding agency	Amount (in lakhs of Rs.)	Project P.I
1	Wavelets Adaptive Schemes for Singular Integral Equations	2022-2024	SERB	6.60	Dr. Vineet Kumar Singh
2	Applications of Spectral Graph Theory in Analyzing the Structural Properties of Large Scale Networks	March 2019 – June 2022	SERB, India	6.60	Dr. Lavanya Selvaganesh
3	On Developing Polynomial-time Interior-Point Methods for Robust Multiobjective Convex Optimization Problems	Jan 2022 to Jan 2025	SERB	6.60	Dr. Debdas Ghosh
4	Pseudo-differential operators in partial differential equation, distribution and machine learning	2021-2024	DST-SERB	6.60	Dr. S. K. Upadhyay
5	Existence and Stability analysis of periodic solutions of variable time impulsive neural networks	2021-2024	DST-SERB	6.60	Dr. S. Das

Research publications

Total number of papers published in refereed National journals	01
Total number of papers published in refereed International journals	76
Total number of papers presented in National conferences	19
Total number of papers presented in International conferences	00

Refereed International journals

1. Gupta P. and Singh L.P. (2022) On the evolution of magnetic shock wave in the mixture of gas and small solid dust particles. Chinese Journal of Physics. 77: 1912-1926.

2. Gupta P., Chaturvedi R.K. and Singh L.P. (2022) Solution of Riemann Problem of Conservation laws in van der Waals Gas. Waves in Random and Complex Media. pp. 1-19. 2022 Published online on 03 Jan 2022.

3. Pradeep, Chaturvedi R.K., and Singh L.P. (???) The effect of dust particles on the evolution of planar and non-planar shock wave in two-dimensional supersonic flow of van der Waals gas. The European Physical Journal Plus. 137(2): 1-12.

4. Chaturvedi R.K., Pradeep and Singh L.P. (???) The formation of shock wave in a two-dimensional supersonic planar and axisymmetric non-ideal gas flow with magnetic field. Computational and Applied Mathematics. 40(8): 1-14.

5. Tamrakar G.K. and Banerjee A. (2021) Study on Infinite Buffer Batch Size Dependent Bulk Service Queue with Queue Length Dependent Vacation. International Journal of Applied and Computational Mathematics. 7(6): 1-25.

6. Jha A.K. and Vaishya L. (2021) Estimates for the shifted convolution sums involving the Fourier coefficients of Hecke-Maass eigenforms. Int. J. Number Theory. 17(7): 1631-1643.

7. Goswami A. and Jha A.K. (2022) Congruences for some partition functions. Journal of the Ramanujan mathematical Society, to appear.

8. Goswami A., Jha A.K. and Singh A.K. (2022) Some identities for partition function. J. Math. Annal. Appl. 508(1).

9. Kumar Y. and Singh V.K. (2021) Computational approach based on wavelets for financial mathematical model governed by distributed order time-fractional partial differential equation. Mathematics and Computers in Simulation. 190: 531-569.

10. Kedia N., Alikhanov A. and Singh V.K. (2021) Stable numerical schemes for time-fractional diffusion equation with generalized memory kernel. Applied Numerical Mathematics. 172: 546-565.

11. Kumar A., Selvaganesh L., Peter Cameron and T Tamizh Chelvam (2021) Recent developments on the power graph of finite groups - A survey. AKCE International Journal of Graphs and Combinatorics. 18(2): 65-94. https://doi.org/10.1080/09728600.2021.1953359.

12. Rajpoot A. and Selvaganesh L. (2022) Bounds and Extremal graphs of Second Reformulated Index For Graphs With Cyclomatic Number At Most Three. Kuwait Journal of Science. 49(1): 1-21. https://doi.org/10.48129/kjs.v49i1.10447.

13. Rajpoot A. and Selvaganesh L. (???) Study of Bounds and Extremal Graphs of Symmetric Division Degree Index for Bicyclic Graphs with Perfect Matching. Iranian Journal of Mathematical Chemistry. Accepted, 2022.

14. Arunkumar, G., Peter J. Cameron, Nath R.K. and Selvaganesh L. (???) Super Graphs on Groups, I. Graphs and Combinatorics. 38, 100 (2022). https://doi.org/10.1007/s00373-022-02496-w

15. Kumar A., Selvaganesh L. and T Tamizh Chelvam (2022) Connectivity of Superpower Graphs of some non-abelian finite groups. Discrete Mathematics, Algorithms and Applications (DMAA). Accepted.

16. Gautam P., Sahu D.R., Dixit A. and Som T. (2021) Forward-backward-half forward dynamical systems for monotone inclusion problems with application to v-GNE. Journal of Optimization Theory and Applications. 190(2): 491-523.

17. Gupta D., Ghosh D. and Som T. (2021) Analytical Fuzzy Space Geometry I. Fuzzy Sets and Systems. 421: 77-110.

18. Shreevastava S., Singh S., Tiwari A.K. and T Som T. (2021) Different classes ratio and Laplace summation operator based intuitionistic fuzzy rough attribute selection. Iranian Journal of Fuzzy Systems .18(6): 67-82.

19. Agrawal V. and Som T. (2021) Fractal dimension of ⟨-fractal function on the Sierpinski gasket, The European Physical Journal Special Topics. 230: 3781-3787.

20. Pandey M., Som T. and Verma S. (2021) Fractal dimension of Katugampola fractional integral of vector-valued functions. The European Physical Journal Special Topics. 230 (21-22): 3807-3814.

21. Agrawal V. and Som T. (2022) L^p-Approximation Using Fractal Functions on the Sierpinski Gasket. Results in Mathematics. 77(2): 1-17.

22. Goel D., Rădulescu V.D. and Sreenadh K. (2022) Variational framework and Lewy-Stampacchia type estimates for nonlocal operators on Heisenberg group. *Annales Fennici Mathematici*, *47*(2): 707–721. https://doi.org/10.54330/afm.116794.

23. Goel D., Pinchover Y. and Psaradakis G. (2020) On weighted $ L^ p $-Hardy inequality on domains in $\mathbb {R}^ n$. *Accepted in Pure and applied functional analysis. to appear.*

24. Jamal M.A., Kumar R., Mukhopadhyay S. and Das S. (2022) Fixed-time stability of dynamical systems with impulsive effects. Journal of the Franklin Institute. 359(7).

25. Kumar H. and Mukhopadhyay S. (2022) Surface energy effects on thermoelastic vibration of nanomechanical systems under Moore–Gibson–Thompson thermoelasticity and Eringen's nonlocal elasticity theories. European Journal of Mechanics - A/Solids. 93.

26. Kumar H. and Mukhopadhyay S. (2022) Size-dependent thermoelastic damping analysis in nanobeam resonators based on Eringen's nonlocal elasticity and modified couple stress theories. Journal of Vibration and Control. DOI:10.1177/10775463211064689.

27. Singh R.V. and Mukhopadhyay S. (2021) Study of wave propagation in an infinite solid due to a line heat source under Moore–Gibson–Thompson thermoelasticity. Acta Mechanica. 232: 4747–4760.

28. Singh B., Kumar H. and Mukhopadhyay S. (2021) Thermoelastic damping analysis in micro-beam resonators

in the frame of modified couple stress and Moore–Gibson–Thompson (MGT) thermoelasticity theories, Waves in Random and Complex Media, DOI: 10.1080/17455030.2021.2001073.

29. Shivay O.N. and Mukhopadhyay S. (2021) A porothermoelasticity theory for anisotropic medium. Continuum Mechanics and Thermodynamics. 33: 2515–2532.

30. Shivay O.N. and Mukhopadhyay S. (2021) Variational principle and reciprocity theorem on the temperature-rate-dependent poro-thermoelasticity theory. Acta Mechanica. 232: 3655–3667.

31. Jangid K., Gupta M. and Mukhopadhyay S. (2021) On propagation of harmonic plane waves under the Moore–Gibson–Thompson thermoelasticity theory. Waves in Random and Complex Media. DOI: 10.1080/17455030.2021.1949071.

32. Gupta M. and Mukhopadhyay S. (2021) On the reflection of thermoelastic waves under an exact heat conduction model with a delay and temperature-dependent elastic parameters, Waves in Random and Complex Media, DOI: 10.1080/17455030.2021. 1925174.

33. Anshika and Ghosh D. Interval-valued Value Function and its Application in Interval Optimization Problems. Computational and Applied Mathematics. Accepted Manuscript, 2022.

34. Jauny, Ghosh D. and Upadhyay A. A Newton-type globally convergent interior-point method to solve multi-objective optimization problems. Journal of Computational Mathematics. Accepted Manuscript, 2022.

35. Jauny, Ghosh D., Upadhyay A and Ansari Q. H. A trust-region interior-point technique to solve Multi-objective optimization problems and an application to a tuberculosis optimal control problem. Journal of Nonlinear and Variational Analysis. Accepted Manuscript, 2022.

36. Ghosh D., Debnath A.K., Chauhan R.S. and Mesiar R. Generalized-Hukuhara Subgradient and its Application in Optimization Problem with Interval-valued Functions. Sadhana, Accepted Manuscript, 2022

37. Chauhan R.S., Ghosh D., Ramik J. and Debnath A.K. Generalized Hukuhara-Clarke Derivative of Interval-valued Functions and its Properties. Soft Computing, Accepted Manuscript, 2021

38. Jauny, Upadhayay A, Ghosh D. and Ansari Q.H. A primal-dual interior-point technique to solve multi-objective optimization problems with an application to optimal control problem. Journal of Nonlinear and Convex Analysis, Accepted Manuscript, 2021

39. Singla M., Ghosh D. and Shukla K.K. pin-TSVM: A robust transductive support vector machine and its application to the detection of COVID-19 infected patients. Neural Processing Letters, 53, 3981–4010, 2021

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Refereed National journal

1. Pandey S. K., Tiwari S.K. and Pandey K. (2022) Fluid Transport in a Tube of Variable Cross-Srctional Area by Peristaltic Waves of Dilating Amplitude: A Mathematical Model for Investigating Impact of Hiatus Herniaon Swallowing, Journal of International Academy of Physical Sciences, Allahabad 26(1) 1-16.

Proceedings of International conferences

1. Sharma H., Vyas V. K., Pandey R. K., and Prasad M. 2022. Proceedings of the International Conference on Intelligent Vision and Computing (ICIVC 2021) IX, 582.

International collaboration/achievements by the Department/School

1. Prof. Peter Cameron, School of Mathematics and Statistics, University of St Andrews, Fife, UK.

Indian faculty visits in the Department/School/Unit

S. No.	Name of faculty member	Purpose of visit	Date and venue
1	Dr. Prem Prakash Pandey	Deliver a talk	October 09-13, 2021.

Key Instruments:

LAB I

LAB II

Member of External Bodies:

Dr. Lavanya Selvaganesh	**Life Member:** Academy of Discrete Mathematics and Applications, India. Indian Mathematical Society, Ramanujan Mathematical Society. Indian Science Congress Association, ***Member:*** American Mathematical Society, European Mathematical Society, Canadian Mathematical Society, Society for Industrial and Applied Mathematics and International Linear Algebra Society

i. Prof. T Som is Elected Vice President of Calcutta Mathematical Society in 2021.

ii. Prof. T Som is a Life member of Indian Mathematical Society, Calcutta Mathematical Society,

Bharat Ganita Parisad and Assam Academy of Mathematics.

Prof. Santwana Mukhopadhyay **evaluated several PhD Theses for IITs, NITs, Universities of India.**

I) Life member of Indian Mathematical Society, Dr. Santosh Kumar Upadhyay

II) Life member of Ramanujan Mathematical Society, Dr. Santosh Kumar Upadhyay

III) Life member of ISAAC, Dr. Santosh Kumar Upadhyay

23. Department of Physics

Full Name of Department: Department of Physics, IIT(BHU), Varanasi

Year of Establishment: 1985 (Formerly Department of Applied Physics, IT, BHU, Applied Physics Section 1968)

Head of the Department: Dr. Sandip Chatterjee w.e.f. 01.01.2021

Brief introduction of the Department/School:

Department of Physics (formerly Department of Applied Physics, IT, BHU / Applied Physics Section, 1968) established in 1985, is a center of excellence for quality research and teaching in Physics & Applied Physics. The evolution of the Department of Physics in its present form took over nine decades. Since its inception, physics teaching was both an integral and essential part of technical education to enable young minds to have a good grounding in physical sciences. Therefore, initially all the three colleges (BENCO, TECHNO & MINMET) had their own faculty members in Physics to do the job. A turning point came in 1968 when BENCO, TECHNO & MINMET were merged under one umbrella of Institute of Technology, Banaras Hindu University (IT-BHU). This then made it meaningful to have all the physics teachers from these three colleges to join hands together to form an Applied Physics Section as a part of the newly formed School of Applied Sciences. Finally, we became a Department of Applied Physics of IT-BHU in 1985. At long last, we became a Department of Physics in 2012 soon after the conversion of IT-BHU into IIT (BHU) on 29 June 2012. Faculties of the department have been pursuing cutting edge front line research in various areas and in collaboration with prestigious national and international institutes. The Department currently offers research programmes in the field of Solar Physics & Space Physics, Astrophysics, Cosmology, High Energy Physics, Nuclear & Particle Physics, Optics and Optical Instrumentation, Fibre Optics, Photonics & Optoelectronics, Condensed Matter Physics & Materials physics, Microwave Remote Sensing, Bio-physics and Composite Materials, Energy Studies & Solid State Ionics, Quantum statistical mechanics and dynamics, Quantum entanglement and quantum information theory etc.

Major areas of Research

The department has a rich heritage and history of scientific research in space physics including theoretical study of the planetary atmosphere and solar magnetic field. In the mid 1970s, the whistler wave at low latitude were recorded for the first time and published in the prestigious "Nature" by the group of our department. $(SP)^2RG$ has been making significant contributions to the theory and modeling of solar plasma in optical, ultraviolet, X-ray, gamma-ray, and in the atomic spectroscopy – especially in the field of diagnostics of electron and proton beams and of the plasmas they heat. This group has been making seminal contributions in the areas of 'MHD waves and transients in the solar atmosphere' and also in 'science communication'. Theoretical calculations related to pitch-angle, cross-sections, scattering are also being carried out. Another group is actively working on the origin of the solar magnetic field, its dynamics using magnetohydrodynamics and the mysterious solar cycle using a novel theoretical (dynamo) model. The SP^2RG has equipped with VLF-Antenna for upper Earth atmospheric measurements; Advanced Solar Computation and Analyses Laboratory (ASCAL) to analyse the large-scale solar observational data and model its magnetic atmosphere. SP2RG has global collaborations (e.g., UK, Poland, Russia, China, Austria, Spain, USA, Belgium, etc.) as well as participation in international (e.g., Royal Society; Polish National Science Foundation etc.), and national (e.g., 2m-National Large Solar Telescope; Aditya-I) projects. In year 2021, a MoU is signed between the IIT (BHU) and Bar Ilan University Israel and The Nigata University Japan with the help of an initiative from a colleague from the Department of Physics and this MoU includes collaborative work and student/research scholars exchange.

The department has now several strong theoretical physics groups (Astrophysics & Astronomy, High Energy Physics, Nuclear & Particle Physics etc.) who are actively working on Structures and Dynamics of the Interstellar Medium, Large-scale gas fragmentation and star formation in galaxies, and Gravitational Lensing as an Astrophysical Probe, Cosmology / Cosmic Microwave background - Statistical Isotropy, Component separation, Low energy QCD at high precision, flavour physics, phenomenology of top, Higgs, vector-like fermions and singlet scalar fields, and model building, Nuclear Physics (Gamma Ray Spectroscopy, Nuclear structure model calculations - cranked Nilsson Strutinsky Model, Shell Model calculations).

The Department carries out a wide range of frontier research activities related to magnetism and superconductivity and semiconductors, nanostructures, thin films and nano-materials and is backed by many sophisticated equipment and measurement techniques. Though the main emphasis of these works is on fundamental aspects, many of the results have a potential for application in industries. In the materials science, we study the electronic, physical, mechanical, optical, and chemical properties of materials, most often in relation to their structure, and use this knowledge to understand and optimize their properties and create new, improved materials and devices. Work in Soft Condensed Matter and Bio-physics is also a front-line research area of the department. "Soft" condensed matter research explores areas like adhesion, friction, wetting, the movement of fluids in porous media, Modelling self-assembly and phase separation kinetics in the complex soft materials, understanding recent single molecule force spectroscopy experiments on biopolymers, Polymers under shear flow, etc. Biophysics and nanotechnology group aim is to investigate the interaction between 2D, 1D, and 0D materials with proteins and DNA. The main focus of this group is to develop sustainable technologies using green synthesis method utilizing medicinal plants and biopolymers for biomedical, energy and environmental applications like biosensors, drug delivery, OLED, bioelectronics and other nanotechnology applications using various experimental techniques and computational methods. Another theoretical physics group is also involved in understanding non-equilibrium dynamics of quantum many body systems with long range interaction.

Optics, Photonics and Fiber optics is emerging new field of research in our country. We establish a research lab with essential facilities to pursue the theoretical, experimental and computations researches in the field of Photonics. We are engaged in the theoretical analysis of photonic crystals and quasi photonic crystals composed of graded, dispersive and negative index materials. These works would be useful in study of the photonic crystals having such type of materials for various applications. It will open new window to design several photonic crystal devices like sensors, reflectors, switches etc. Research works on the Optical Instrumentation, Non-Destructive Imaging testing and optical instrumentation for biology and medicine, Computational Optics and Imaging through random complex media have also been initiated in our department. Such works has variety of practical applications in underwater imaging, bio-medical optics, space applications etc.

Research on remote sensing is also one of the frontline research areas in the Department. In this field, the growth of agricultural crops are monitored, classification of crops and the recognition of shape/size of buried objects are done by scatterometer measurements and satellite image analysis. Such studies are useful in designing of sensors, urban planning, crop classification, crop-yield and soil moisture estimation for agricultural planning.

Moreover, one of the groups is actively engaged in different types of luminescent materials, particularly inorganic nanostructures/phosphors having potential applications in the area of energy harvesting, bio-imaging and for advance lighting applications, etc. Composite material studies are also pursued at the Department and the lab for such studies is in development.

Research in the field of Green Energy and Solid State Ionics is also carried out in this Department. The energy studies explore the various fuel cells, materials, etc. to optimize the renewable energy sources. In the Green Energy area, the work on anode, cathode and electrolyte materials of Solid Oxide Fuel Cells (SOFC) is in focus. Also, preliminary establishment of lab towards the fabrication and characterization for Solar cells has been done. In addition to it, some work on hydrogen energy has also been started. Towards Solid State Ionics, the ion dynamics of the structurally disordered and crystalline materials is being studied. This study is not only restricted to the amorphous materials but also has been extended to the various materials of SOFC. Also, the work has also been started in the field of materials for nano piezo- pyro energy harvesters.

Area of the Department/School (in square meters): 1844 Square Meters

Infrastructure

Sl. No.	Particulars	Number
1	No. of classrooms	01
2	No. of lecture halls	01
3	No. of laboratory	16
4	No. of computers available for students in the Department/School	~60

Unique Achievement / Preposition of the Department/School

Department's vision is to promote new ideas and innovations in physical sciences. Our mission is to offer world class education, research guidance and also leadership in physical sciences. Our aim is to become a high ranking in Physics Department globally in terms of teaching quality, research contributions and academic leadership.

Under new curriculum process (which Institute has started in 2014) Department offers two physics courses at B. Tech-Part-I level as an institute science course and two physics courses to preparatory students. We also offer several electives and open electives under this new flexible project based curriculum. Our 5-year Integrated M. Tech. programme (IMD) in Engineering Physics which started in 2005 has been converted to Integrated Dual Degree (IDD) Programme from 2014 and is running successfully. Main objective of this course is to impart knowledge of various core technical disciplines without compromising on the basic physics and mathematics courses. The course gives an insight to the disciplines of engineering as well as science, and practical working experience through industrial training / summer internship, project / dissertation work to enhance the working skills of the students. Department has started the M.Sc. Programme in Physics from 2019 and students are admitted through JAM.

Students of IMD/IDD (Engineering physics) are awarded with several fellowships to go abroad to pursue higher studies, involved in several project works in both science and technology, present their research works in different workshop/ conference/symposia. They also pursue summer internship in industries and reputed institutions/universities in India and abroad. Many of these students are also recruited by reputed national and multinational companies.

The Department offers research programmes in the field of Solar Physics & Space Physics, Fibre Optics, Photonics & Optoelectronics, Condensed Matter Physics & Materials physics, Microwave Remote Sensing, Bio-physics and Composite Materials, Energy Studies & Solid State Ionics. About 90 Ph.D. students have received their PhD degree so far from the department. Many of our alumni (Ph.D., IMD) are well placed in reputed Institutes / Universities in India and abroad.

Department has a strong component to deliver popular science lectures and publish articles in magazines like Scientific American and newspapers.

Faculty members in the Department working in the frontier areas of research have published in International journals of high impact factor (eg. Science, Nature Comm., JACS, PRL, PRE, Astrophysical Journal, Solar Physics, Astronomy & Astrophysics, MNRAS, J. Mat. Chem., Nanotechnology Reviews, Chemosphere, PCCP, SSI, RSC Adv. etc.), published book and authored book chapters.

Department successfully organized several National (RTCMP, NCTP), International workshop / Conferences (DYNAMIC SUN-I, THERMANS-2016, ABSMSNW-2017, ICFNM-2019, AMBT-2021), GIAN Course Work, and Ishan Vikas Programme of MHRD for school students from North East Students, student's convention 'JIGYASA' (2015, 2016, 2017), Institute Day, etc. in recent years.

Several Indian and Foreign distinguished faculty members visited the Department to deliver seminar, colloquium.

Dr. Anil Bharadwaj, an alumnus of the Department received Shanti Swarup Bhatnagar award in 2007 for outstanding contribution in the field of Earth, Atmosphere, Ocean, and Planetary Sciences. He also received Infosys Science Foundation award-2016 in Physical Sciences category.

Faculty Members & Alumni of the Department have received several fellowships, senior membership and lifetime memberships of various academic and professional societies like Royal Astronomical Society (FRAS), Astronomical Society of India (ASI), Optical Society of India (OSI), Optical Society of America (OSA) , International Academy of Physical Sciences (at Allahabad, India), Materials Research Society of India (MRSI), Indian Physics Association (IPA), Indian Thermal Analysis Society (ITAS), Indian society for Materials Chemistry (ISMC) (at BARC, Mumbai), International Astronomical Union (IAU), International Academy of Astronautics (IAA) on Comparative Climatology - Studying Planetary Climate to Understand our Planet, Max-Planck Society fellowship, Japanese Society of Promotion of Science (JSPS) fellowship, National Science Foundation (NSF-China) young scientist award, NASA/NRC Associate, Commonwealth Academic Staff Fellow: Glasgow, Cambridge and Oxford universities (1990-91), Indian National Science Academy (INSA), New Delhi, INSA Young Scientist Medal, Humboldt Research Fellowship, etc.

Faculty members have received several awards/honours like e.g. Indira Gandhi Prize for Popularization of Science-2011 (Science Communications) by Indian National Science Academy (INSA), NATIONAL AWARD of 1,00,000/- for

Outstanding Efforts in Science and Technology Communication through Books and Magazines for 2005, 2004 Award for Popular Writing on Solar Physics (American Astronomical Society/Solar Physics Division), 'MPAE Gold Pin' Award (1999) by Max-Planck-Institut für Aeronomie (MPAE) Germany in recognition of the outstanding contributions to the SUMER/SoHO science, D.Sc. *Honoris Causa*, etc.

The department has enriched with many excellent faculties and faculty strength has increased to 22. Currently, in the department major research activities are going in theoretical as well as in experimental physics. The Department has been granted DST-FIST support and many other projects funded by national and International agencies namely DST, Department of Bio Technology (DBT), BRNS, DRDO, CSIR etc. Faculty members have several National, International Research collaboration, MOU, VLF-Global-Network Project etc.

Students on Roll

Sl. No.	Programme	I Year	II Year	III Year	IV Year	V Year & above
1.	B. Tech/B. Arch	--	--	--	--	--
2.	Dual Degree	26	31	29	22	20
3.	M. Tech/ M. Pharm/M.Sc.	24	23		-	-
4.	Ph. D (Under Institute Fellowship)	6	2	3	13	17
5.	A. Ph. D (Under Project Fellowship) B.Ph. D (Other Funding Agency)	-- 14	-- 8	-- 23	-- 6	-- 10
6.	A. Ph. D (Under Sponsored Category) B. Ph. D (Under Full Time External & Part Time Category)	-- 3	-- 2	-- 1	-- --	-- 1

Names of students/scholars who attended conferences/workshops/seminars and symposia abroad or in India

Sl. No.	Name of student	Roll no.	Conference/Seminar/ Symposia/Workshop	Date & venue	Financial assistance from
India					
1	Mahima Singh	16171009	Physics conference SRC'22	04-06 March 2022, IIT Kanpur, (Hybrid mode)	NA
2	Jais Kumar	16171010	Workshop on 21-cm Cosmology & Reionization, SKA India CD/EoR & Cosmology Science Working Group	19-23 April 2021, IISc Bengaluru (Online)	Self
3	Kanchan Yadav	16171502	AMBT-2021	13-17 July, 2021, IIT(BHU), Varanasi	NA
4	Debarati Pal	17171003	Topological Matter Virtual Conference	29 June to 01 July, 2021 (online)	Self
5	Debarati Pal	17171003	ICAMMC Virtual Conference	02-04 December, 2021 (online)	Self
6	Mohd Alam	17171004	7th Conference on Neutron Scattering (CNS-2021) Organized by Bhabha Atomic Research Centre & Neutron Scattering Society of India	25-27 November, 2021, BARC Mumbai (Hybrid mode)	Self
7	Mohd Alam	17171004	65th DAE Solid State Physics Symposium Organised by Bhabha Atomic research centre, Mumbai	15-19 December, 2021, BARC Mumbai (Hybrid mode)	Self
8	Prashant Kumar Pandey	17171005	4th Online International Conference on Science & Engineering of Materials (ICSEM-2021) organized by Sharda University.	19-22 July, 2021	

Sl. No.	Name of student	Roll no.	Conference/Seminar/ Symposia/Workshop	Date & venue	Financial assistance from
9	Prashant Kumar Pandey	17171005	Two weeks international workshop on "Emerging trends in the field of Science and Technology" organized by Sathyabama Institute of Ecience and Technology, Chennai	16-28 August, 2021	
10	Prashant Kumar Pandey	17171005	CONIAPS XXVII on Frontiers in Physics	26-28 October, 2021	
11	Prashant Kumar Pandey	17171005	CONIAPS XXVII on Hydrogen energy and nanomaterials.	28 October, 2021	
12	Prashant Kumar Pandey	17171005	Skill development program on "various simulation tools used in research" organized by Sathyabama Institute of Ecience and Technology, Chennai	28 February-05 March, 2022	
13	Prashant Kumar Pandey	17171005	CSIR - National Physical Laboratory online training program/ Workshop on Characterization technique of materials and devices	14-15 March, 2022	
14	Prashant Kumar Pandey	17171005	RAFM-2022	14-16 March, 2022	
15	Prashant Kumar Pandey	17171005	CSIR - National Physical Laboratory online training program/ Workshop on Scientific Communications	25-26 March, 2022	
16	Prashant Kumar Pandey	17171005	National webinar on "Two- dimensional materials: Graphene and beyond" organized by Sathyabama Institute of Ecience and Technology, Chennai	28 March, 2022	
17	Digvijay Nath Dubey	17171006	International Conference on Functional Materials and Applied Physics, organised by Sardar Vallabhbhai National Institute of Technology, Surat	14-15 May, 2021	
18	Digvijay Nath Dubey	17171006	International Conference on Recent advances in Material Science, Organized By Department of Physics HNB Garhwal University	15-17 May, 2021	
19	Digvijay Nath Dubey	17171006	Oral Presentation at 4th International Conference on Science and Engineering of materials (Paper Title- Ferroelectricity driven by 'A' and 'B' site off-centred displacements in cubic phase with Pm-3m space group), organised by School of Basic Sciences and Research, Department of Physics, Sharda University	19-22 July, 2021	
20	Abhishek Kumar Singh	17171007	Physics Conference in the Students' Research Convention '22.	04-06 March, 2022, IIT Kanpur	NA
21	Khyati Anand	17171008	7th Conference on Neutron Scattering (CNS-2021) Organized by Bhabha Atomic Research Centre & Neutron Scattering Society of India	25-27 Nov. 2021, BARC Mumbai (Hybrid mode)	NA
22	Khyati Anand	17171008	65th DAE Solid State Physics Symposium Organised by Bhabha Atomic research centre, Mumbai	15-19 Dec. 2021, BARC Mumbai (Hybrid mode)	Self
23	Khyati Anand	17171008	Physics conference SRC'22	04-06 March 2022, IIT Kanpur, (Hybrid mode)	NA

Sl. No.	Name of student	Roll no.	Conference/Seminar/ Symposia/Workshop	Date & venue	Financial assistance from
24	Seema Kumari	17171011	65th DAE Solid State Physics Symposium Organised by Bhabha Atomic research centre, Mumbai	15-19 Dec. 2021, BARC Mumbai	BARC
25	Gurudeo Nirala	17171012	27th International Conference of International Academy of Physical Sciences, Hydrogen Energy and Nano materials, Department of Physics, Banaras Hindu University, Varanasi	26-28 October, 2021	NA
26	Gurudeo Nirala	17171012	International Conference on Recent Advances in Functional Materials (RAFM-2022) organized by Department of Physics,IQAC and Star College Scheme (GoI), ARSD College University of Delhi from	14-16 March, 2022	Self
27	Bayazeed Yadav	17171013	AMBT-2021	13-17 July, 2021, IIT(BHU), Varanasi	NA
28	Manisha Chauhan	17171014	65th DAE Solid State Physics Symposium, BARC, Mumbai	15-19 December, 2021	
29	Manisha Chauhan	17171014	Internal Conference on Energy Materials and Devices, ICEMD (2022), Dept. of Physics, BHU	11-12 January, 2022	
30	Meera Nandakumar	17171018	ASI Conference 2022	25-29 March 2022 (Online)	NA
31	Prashant Dixit	17171019	ICRAMS-2021	15-17 May, 2021	
32	Prashant Dixit	17171019	4th Online International Conference on Science & Engineering of Materials (ICSEM-2021)	19-22 July, 2021	
33	Prashant Dixit	17171019	CONIAPS XXVII on Frontiers in Physics	26-28 October, 2021	
34	Prashant Dixit	17171019	CONIAPS XXVII on Hydrogen energy and nanomaterials.	28 October, 2021	
35	Balveer Singh	17171020	The 40th Annual Meeting of the Astronomical Society of India – 2022 (ASI)	25-29 March, 2022, IIT Roorkee	
36	Vaibhav chauhan	17171022	ICRAMS-2021	15-17 May, 2021	
37	Vaibhav chauhan	17171022	Webinar on Experimental Techniques and Related Analysis Methods in Condensed Matter Physics	09-10 July, 2021	
38	Vaibhav chauhan	17171022	International conference on advanced materials for better tomorrow (AMBT-2021)	13-17 July, 2021	
39	Vaibhav chauhan	17171022	CONIAPS XXVII on Frontiers in Physics	26-28 October, 2021	
40	Vaibhav chauhan	17171022	CONIAPS XXVII on Hydrogen energy and nanomaterials.	28 October, 2021	
41	Vaibhav chauhan	17171022	RAFM-2022	14-16 March, 2022	
42	Raj Kumar	17171023	Sustainable Materials and Technologies for Bio and Energy Applications, (SMTBEA-2021)	21 May, 2021	
43	Raj Kumar	17171023	International conference on advanced materials for better tomorrow (AMBT-2021)	13-17 July, 2021	

Sl. No.	Name of student	Roll no.	Conference/Seminar/ Symposia/Workshop	Date & venue	Financial assistance from
44	Raj Kumar	17171023	4th Online International Conference on Science & Engineering of Materials (ICSEM-2021)	19-22 July, 2021	
45	Raj Kumar	17171023	27th International Conference of International Academy of Physical Science (CONIAPS XXVII) on Frontiers in Physics	26-28 October, 2021	
46	Raj Kumar	17171023	Skill development program on " various simulation tools used in research" organized by Sathyabama Institute of Science and Technology, Chennai, (AICTE-SDP)	28 February-05 March, 2022	
47	Raj Kumar	17171023	CSIR – National Physical Laboratory Online Training Program/Workshop on Scientific Communications	25-26 March, 2022	
48	Sambhab Dan	17171501	International Conference on "Advanced Materials for Better Tomorrow."	13-17 July, 2021, IIT(BHU), Varanasi, and Society for Interdisciplinary Research in materials and Biology (SIRMB)	Self
49	Sambhab Dan	17171501	2nd International Conference on "Processing and Characterization of Materials."	12-14 December, 2021, Metallurgical and Materials Engineering Department, NIT Rourkela	Self
50	Sambhab Dan	17171501	International Conference on the Topology in Condensed Matter Physics	21-23 February, 2022 S.N Bose National Centre for Basic Science.	NA
51	Harshita Trivedi	17171503	AMBT-2021	13-17 July 2021, IIT(BHU), Varanasi	NA
52	Prem Chandra Bharti	17171504	International Conference on Energy Materials and Devices (ICEMD-2022)	11-12 January, 2022 (Online Mode)	Self
53	Labanya Ghosh	17171505	7th Conference on Neutron Scattering (CNS-2021) Organized by Bhabha Atomic Research Centre & Neutron Scattering Society of India	25-27 November, 2021, BARC Mumbai (Hybrid mode)	NA
54	Labanya Ghosh	17171505	65th DAE Solid State Physics Symposium Organised by Bhabha Atomic research centre,Mumbai	15-19 December, 2021, BARC Mumbai (Hybrid mode)	Self
55	Koustubh Ashok Apte	17173007	Future Flavours: Prospects for Beauty, Charm and Tau Physics (ONLINE)	25 April 2022 to 06 May 2022, The International Centre for Theoretical Sciences, Bangalore	Self
56	Sanjeet Kumar Patel	18171001	A discussion on the cosmological principle	25-28 October, 2021. Pohang, Republic of Korea	- (Online mode)
57	Sanjeet Kumar Patel	18171001	Physics of Early Universe	03-12 January, 2022, ICTS, Bangalore	- (Online mode)

Sl. No.	Name of student	Roll no.	Conference/Seminar/ Symposia/Workshop	Date & venue	Financial assistance from
58	Srishti Sixit	18171006	7th Conference on Neutron Scattering (CNS-2021) Organized by Bhabha Atomic Research Centre & Neutron Scattering Societyof India	25-27 November, 2021, BARC Mumbai	NA
59	Srishti Sixit	18171006	65th DAE Solid State Physics Symposium Organised by Bhabha Atomic research centre, Mumbai	15-19 December, 2021, BARC Mumbai	Self
60	Ravi Pratap	18171009	AMBT-2021	13-17 July, 2021, IIT(BHU), Varanasi	NA
61	Uma Sharma	18171010	International Conference on Energy Materials and Devices (ICEMD-2022)	11-12 January, 2022 (Online)	Self
62	Satya Vijay Kumar	18171012	7th Conference on Neutron Scattering (CNS-2021) Organized by Bhabha Atomic Research Centre & Neutron Scattering Society of India	25-27 November, 2021, BARC Mumbai (Virtually)	NA
63	Satya Vijay Kumar	18171012	65th DAE Solid State Physics Symposium Organised by Bhabha Atomic research centre, Mumbai	15-19 December, 2021, BARC Mumbai, (Virtually)	Self
64	Ashish Kumar Ranjan	18171501	5th National symposium on Shaping the Energy Future : Challenges and Opportunities 2021	27 August 2021, CSIR- Indian Institute of Petroleum, Dehradun, Uttarakhand	Self
65	Ashish Kumar Ranjan	18171501	International Conference on Energy Materials and Devices (ICEMD-2022)	11-12 January, 2022, MMV, BHU, Varanasi	Self
66	Avinash Chauhan	18171504	Symposium on Current Trends in Non-Equilibrium Physics	22-27 November, 2021, JNU, New Delhi	Free
67	Avinash Chauhan	18171504	Workshop on LAMMPS and NAMD	25 February, 2022, IIT Delhi	Free
68	Avinash Chauhan	18171504	Advanced Materials for Better Tomorrow (AMBT-2021	13-17 July, 2021, IIT BHU	Free
69	Avinash Chauhan	18171504	Interdisciplinary Topics in Materials Science (ITAM-2021)	27-30 July, 2021, IISC Bangalore	Free
70	Avinash Chauhan	18171504	One-day research facility training program at the Department of Physics, BHU (Hybrid mode)	30 January, 2022 BHU (Hybrid Mode)	Free
71	Dheeraj Kumar	18171506	7th Conference on Neutron Scattering (CNS-2021) Organized by Bhabha Atomic Research Centre & Neutron Scattering Society of India	25-27 November, 2021, BARC Mumbai	NA
72	Dheeraj Kumar	18171506	65th DAE Solid State Physics Symposium Organised by Bhabha Atomic research centre, Mumbai	15-19 December, 2021, BARC Mumbai	Self
73	Pawan Kumar	18171507	Astronomical Society of India	25-29 March, 2022	
74	Pawan Kumar	18171507	STP 15, SCOSTEP	21-25 February, 2022	ISRO Project
75	Kartika Sangal	18171509	The 40th Annual Meeting of the Astronomical Society of India – 2022 (ASI)	25-29 March, 2022, IIT Roorkee	

Sl. No.	Name of student	Roll no.	Conference/Seminar/ Symposia/Workshop	Date & venue	Financial assistance from
76	Rishabh Singh Sisodia	18173021	Future Flavours: Prospects for Beauty, Charm and Tau Physics (ONLINE)	25 April 2022 to 06 May 2022, The International Centre for Theoretical Sciences, Bangalore	Self
77	Samiksha Shrivastav	19171001	Symposium on Current Trends in Non-Equilibrium Physics	22-27 November, 2021, JNU, New Delhi	Free
78	Samiksha Shrivastav	19171001	Workshop on LAMMPS and NAMD	25 February, 2022; IIT Delhi	Free
79	Samiksha Shrivastav	19171001	Advanced Materials for Better Tomorrow (AMBT-2021	13-17 July, 2021, IIT BHU	Free
80	Santosh Kachhap	19171008	Advanced Materials for Better Tomorrow	13-17 July, 2021, IITBHU (Online)	The Society for Inter Disciplinary Research in Material and Biology
81	Santosh Kachhap	19171008	National Workshop on Fluorescence and Raman Spectroscopy	29 November -04 December 2021, IISER Thiruvanthapuram and RGCB Thiruvanthapuram (Online)	Fluorescence Society
82	Santosh Kachhap	19171008	Probing Materials using Spectroscopic Tools: Basics and Applications	28 February-04 March 2022, MGSU Motihari (Online)	Mahatma Gandhi Central University, Motihari
83	Neelam Singh	19171011	Future Flavours: Prospects for Beauty, Charm and Tau Physics (ONLINE)	25 April 2022 to 06 May 2022, The International Centre for Theoretical Sciences, Bangalore	Self
84	Manisha Sharma	19171015	Fluorescence society - 2021, Thiruvanthapuram	29 November - 04 December 2021	
85	Manisha Sharma	19171015	E-workshop on "Advanced spectroscopy for emerging materials" CSIR-NPL-2021	22-23 December, 2021, New Delhi	
86	Manisha Sharma	19171015	International conference on energy materials and devices - 2022	12 January, 2022, MMV, BHU	
87	Swarnima Singh	19171020	International conference on energy materials and devices - 2022	12 Jan. 2022, MMV, BHU, Varanasi	
88	Swarnima Singh	19171020	Workshop on "Solar cell simulation using Open- Source TCAD Software (SCAPS)"	22nd to 25 july 2020, Chitkara University (ONLINE MODE)	
89	Swarnima Singh	19171020	Online Workshop on Rietveld Refinement Method	22-24 September 2021, UGC- DAE (Online)	
90	Vindya Vashishth	19171018	Astronomical Society of India	25-29 March, 2022	
91	Vindya Vashishth	19171018	STP 15, SCOSTEP	21-25 February, 2022	ISRO Project
92	Ashish Kumar Singh	19171023	Symposium on Current Trends in Non-Equilibrium Physics	22-27 November, 2021, JNU, New Delhi	Free

Sl. No.	Name of student	Roll no.	Conference/Seminar/ Symposia/Workshop	Date & venue	Financial assistance from
93	Ashish Kumar Singh	19171023	Workshop on LAMMPS and NAMD	25 February, 2022; IIT Delhi	Free
94	Ashish Kumar Singh	19171023	Advanced Materials for Better Tomorrow (AMBT-2021	13-17 July, 2021, IIT BHU	Free
95	Shweta Didel	19171024	The 40th Annual Meeting of the Astronomical Society of India – 2022 (ASI)	25-29 March, 2022, IIT Roorkee	
96	Sachin Singh	19171026	Advanced Materials for Better Tomorrow	13-17 July, 2021, IITBHU (Online)	The Society for Inter Disciplinary Research in Material and Biology
97	Sachin Singh	19171026	National Workshop on Fluorescence and Raman Spectroscopy	29 November -04 December 2021, IISER Thiruvanthapuram and RGCB Thiruvanthapuram (Online)	Fluorescence Society
98	Sachin Singh	19171026	Probing Materials using Spectroscopic Tools: Basics and Applications	28 February-04 March, 2022, MGSU Motihari (Online)	Mahatma Gandhi Central University, Motihari
99	Sachin Singh	19171026	Topological Matter Conference	28 June-01 July 2021, Spain (Online)	TOCHA (GA:824140) and SKYTOP (GA:82423)
100	Sanjeev Sanyal	19171501	Physics of the Early Universe	03-12 January, 2022, ICTS, Bangalore	ICTS, Bangalore
101	Anshul Verma	19171502	Physics of the Early Universe	03-12 January, 2022, ICTS, Bangalore	ICTS, Bangalore
102	Vartika Singh	19171503	Future Flavours: Prospects for Beauty, Charm and Tau Physics (ONLINE)	25 April 2022 to 06 May 2022, The International Centre for Theoretical Sciences, Bangalore	Self
103	Tarun Katheriya	19171506	27th International Conference of International Academy of Physical Sciences, Hydrogen Energy and Nano materials, Department of Physics, Banaras Hindu University, Varanasi	26-28 October, 2021	NA
104	Anu B Sreedevi	20171502	Astronomical Society of India	25-29 March, 2022	
105	Anu B Sreedevi	20171502	STP 15, SCOSTEP	21-25 February, 2022	ISRO Project
106	Shruti	20171503	Advanced Materials for Better Tomorrow	13-17 July, 2021, IITBHU (Online)	The Society for Inter Disciplinary Research in Material and Biology

Sl. No.	Name of student	Roll no.	Conference/Seminar/ Symposia/Workshop	Date & venue	Financial assistance from
107	Shruti	20171503	National Workshop on Fluorescence and Raman Spectroscopy	29 November -04 December 2021, IISER Thiruvanthapuram and RGCB Thiruvanthapuram (Online)	Fluorescence Society
108	Shruti	20171503	Probing Materials using Spectroscopic Tools: Basics and Applications	28 February-04 March 2022, MGSU Motihari (Online)	Mahatma Gandhi Central University, Motihari
109	Akash Biswas	20171506	Astronomical Society of India	25-29 March, 2022	
110	Akash Biswas	20171506	STP 15, SCOSTEP	21-25 February, 2022	ISRO Project
111	Harish Verma	20171512	Workshop On Sensor Organized by INDO –SOUTH KOREA Joint Network Center for Environmental Cyber Physical System	23-26 November, 2021	Self
112	Harish Verma	20171512	Advances in Nanosensors & Nanomedicine Organized by Bennett University, Greater Noida (DELHI), India	22 December, 2021	Self
113	Devendra Kumar Verma	21171003	Workshop on LAMMPS and NAMD	25 February, 2022, IIT Delhi	Free
114	Devendra Kumar Verma	21171003	Conference on Radiation in Health Care (CRHC 2021)	26-27 April, 2021	Free
115	Sumana Khamrai	21171014	Energy Storage and Conversion	04-06, August, 2021, IIT Roorkee	Self
116	Mayank	20177014	Topology and Differential Geometry for Physicists	July 2021, IIT Gandhinagar, India (Online)	
117	Mayank	20177014	LQG(Loop Quantum Gravity) Summer School	07-25 June 2021, Quantum Gravity teams of the CPT (Marseille) and ENS Lyon, France (Online)	
118	Abhinav Prasad	17173002	The 40th Annual Meeting of the Astronomical Society of India – 2022 (ASI)	25-29 March, 2022, IIT Roorkee	NA
119	Kushagra Sharma	17173008	The 40th Annual Meeting of the Astronomical Society of India – 2022 (ASI)	25-29 March, 2022, IIT Roorkee	NA
Abroad					
1	Jais Kumar	16171010	4th Global 21-cm workshop	11-14 October 2021, NESS, University of Colorado Boulder (Online)	Self
2	Digvijay Nath Dubey	17171006	Poster presentation at "IUCr 2021- XXV General Assembly and Congress of the International Union of Crystallography"	14-22 August, 2021, organised by Czech and Slovak Crystallographic Association, Ostricová 668/5, Stodulky, 155 00 Praha 5 Czech Republic	

Sl. No.	Name of student	Roll no.	Conference/Seminar/ Symposia/Workshop	Date & venue	Financial assistance from
3	Digvijay Nath Dubey	17171006	Rigaku School for Practical Crystallography	10-21 January, 2022, organised by Rigaku Japan	
4	Abhinav Prasad	17173002	Specialist Discussion Meeting of the Royal Astronomical Society	14 May, 2021 (Online Mode)	NA
5	Abhinav Prasad	17173002	National Astronomy Meeting (NAM), UK	19-22 July, 2021 (Online Mode)	NA
6	Abhinav Prasad	17173002	European Solar Physics Meeting	06-10 September, 2021	NA
7	Avinash Chauhan	18171504	Combining particle-based and continuum modeling in soft matter physics with ESPResSo, PyStencils, and LbmPy	11-15 October, 2021, University of Stuttgart, Germany	Free
8	Pawan Kumar	18171507	2nd International Symposium on Space Science 2021 (ISSS 2021)	14-15 November, 2021	Free
9	Pawan Kumar	18171507	16th European Solar Physics Meeting (ESPM-16)	06-10 September, 2021	Free
10	Samiksha Shrivastav	19171001	Combining particle-based and continuum modeling in soft matter physics with ESPResSo, PyStencils, and LbmPy	11-15 October, 2021, University of Stuttgart, Germany	Free
11	Vindya Vashishth	19171018	2nd International Symposium on Space Science 2021 (ISSS 2021)	14-15 November, 2021	Free
12	Vindya Vashishth	19171018	16th European Solar Physics Meeting (ESPM-16)	06-10 September, 2021	Free
13	Ashish Kumar Singh	19171023	Combining particle-based and continuum modeling in soft matter physics with ESPResSo, PyStencils, and LbmPy	11-15 October, 2021, University of Stuttgart, Germany	Free
14	Anu B Sreedevi	20171502	First summer school on space research Technology & application, NAO, Bulgaria	05-11 July, 2021	Free

Names of students/scholars who got prizes and awards outside the Institute

Sl. No.	Name of student	Roll no.	Name of prize	Date & venue	Prize awarded by
1	Mahima Singh	16171009	3rd Prize in the Oral Presentation	04-06 March, 2022, IIT Kanpur, Hybrid Mode	IIT Kanpur
2	Khyati Anand	17171008	1st Prize in 3 Minute Thesis Presentation	04-06 March, 2022, IIT Kanpur, Hybrid Mode	IIT Kanpur
3	Manisha sharma	19171015	Best paper presentation award	12 January, 2022	International conference on energy materials and devices- 2022
4	Prashant Dixit	17171019	First place in Poster presentation	15-17 May 2021, HNBGU Uttarakhand	ICRAMS-2021 organized by HNB Garhwal university
5	Vaibhav Chauhan	17171022	Second place in Oral presentation	15-17 May 2021, HNBGU Uttarakhand	ICRAMS-2021 organized by HNB Garhwal university
6	Shruti	20171503	Prime Minister Research Fellowship	22 October, 2021	MHRD, Government of India

Names of Students/Scholars who went for foreign Internship

Sl. No.	Name of student	Roll No.	Name of the organization	Place of internship	Country	Duration
1	Kritika Bansal	20177010	Dr. Ravi Kanbur (Cornell University), Dr. Yonatan Berman (King's College London)	Online [Auto regressive modelling of wealth evolution - Summer Studentship]	-	July 2021
2	Abhinav Prasad	17173002	SOLARNET International Project under European Union's Horizon 2020 Research and Innovation Programme under Grant Agreement No. 824135	Sheffield University (Remote Connection)	United Kingdom	15 May-30 August, 2021

Faculty & their activities

Faculty and their areas of specialisation

Sl. No.	Name, Qualification, Employee No.	Date of Award of PhD Degree	Major Areas of Specialization (Max. 3 Areas)
PROFESSORS			
1	Prof. Debaprasad Giri, Ph.D., 17048	January 1997	Statistical Physics; Soft Condensed Matter Physics; Computational Bio-Physics
2	Prof. Prabhakar Singh, M.Tech., Ph.D., 18366	16th June 2005	Condensed matter physics Materials Science and Technology
3	Prof. Sandip Chatterjee, Ph.D., 18478	May 1997	Topological Insulators, Multiferroic Materials, Magnetism.
4	Prof. Rajendra Prasad, Ph.D., 17276	1998	Remote Sensing, Satellite image analysis, crop growth variables and soil moisture retrieval algorithms development for their monitoring
ASSOCIATE PROFESSORS			
1	Dr Anita Mohan PhD, 17041	1996	Physics and Diagnostics of Solar, EUV and X-Ray Emission Processes; Synthesis of composites; Tribology
2	Dr. Praveen Chandra Pandey, Ph.D., 18359	2001	Fiber Optics & Photonic Crystal Fibers, PBG and Metamaterials, Photonic materials.
3	Dr. (Mrs.) Shail Upadhyay, Ph.D., 18536	March 2000	Experimental Condensed Matter; Electro ceramic
4	Dr. Abhishek Kr. Srivastava, Ph.D., 19771	2006	Solar Physics
5	Dr. Rakesh Kumar Singh, Ph.D., 50222	8th August 2009	Optics: Experiment, Theory & Computation
6	Dr. Avanish Singh Parmar, Ph.D., 50021	7th August 2009	Biophysics, Nanotechnology, Hybrid Materials
ASSISTANT PROFESSORS			
1	Dr. Sunil Kumar Mishra, Ph.D., 50020	2nd June 2012	Quantum Infomation, Quantum Spins systems, Frustrated Magnets
2	Dr. Saurabh Tripathi, Ph.D., 50028	2012	Structural Phase Transitions in ferroics, Short and long range ordering in functional materials, Experimental Condensed Matter & Materials Science
3	Dr. Swapnil Patil, Ph.D., 50029	30th July 2010	Experimental Condensed Matter Physics; ARPES investigations of the electronic structure of materials
4	Dr. Shradha Mishra, Ph.D, 50033	February 2009	Condensed matter theory, soft matter and statistical physics
5	Dr. Prasun Dutta, Ph.D., 50036	2011	Physics of Interstellar Medium Radio Astronomy Observations and Interpretations, Statistical astrophysics and cosmology
6	Dr. Rajeev Singh, Ph.D., 50170	21st December 2013	Quantum Physics, Quantum Optics, Quantum Information

Sl. No.	Name, Qualification, Employee No.	Date of Award of PhD Degree	Major Areas of Specialization (Max. 3 Areas)
7	Dr. Somnath Nag, Ph.D., 50173	20th July 2014	Nuclear Physics (Gamma Ray Spectroscopy, Nuclear structure model calculations - cranked Nilsson Strutinsky Model, Shell Model calculations)
8	Dr. Sunil Kumar Singh, Ph.D, 50182	28th September 2011	Spectroscopy Lasers Nanophotonics
9	Dr. Gauhar Abbas, Ph.D., 50199	14th December 2012	Theoretical High Energy Physics
10	Dr. Awaneesh Kumar Singh, Ph.D.; 50213	11th October 2011	Soft Matter Physics, Statistical Physics, Physical Chemistry
11	Dr. Bidya Binay Karak, 50217	August 2013	Solar Physics; Magnetohydrodynamics (MHD) and its application in Sun and other stars; Astrophysical Fluids, Turbulence, and Convection; Dynamo Theory, Sunspot and Solar Cycle, Chaotic behaviours of Astrophysical Objects
12	Dr. Pavan Kumar Aluri, Ph.D., 50219	5th June 2013	Cosmology - Cosmic Microwave Background : Statistical isotropy, Component separation methods; Alternate theories of Gravity
Visiting Faculty			
1	Dr. Arvind Kumar Tripathi, FAC-VF-17	2000	Planetary & Space Sciences, Planetary Space Weather

Technical and Non-Teaching Staff

Sl. No.	Name, Qualifications	Designation, Employee No.	Date of Appointment in the department
1	Rahul Kant Chaudhary, M. Tech.	Jr. Assistant	13.05.2017
2	Awadhesh Kumar Srivastava, B.Com & B. Lib	Skilled Clerical Staff	10.06.2016
3	Vikash Singh, B.Sc.	Skilled Staff	21.12.2010
4	Ramji Ram, High School & Agricultural Diploma	Technical Superintendent	30.05.1987
5	Manjul Tiwari, B.Sc. & Diploma in Applied Videography	Technical Superintendent	15.12.2008
6	Bhanu Pratap Prasad, Intermediate Science	Technical Superintendent	19.11.1990
7	Sujeet Kumar Bose, BA & Diploma in Electrical Engineering	Jr. Technical Superintendent	22.02.2007
8	Pankaj Kumar Asthana, B.Sc.	Jr. Technical Superintendent	05.08.2008
9	Upendra Prasad, M.Sc.& M.Ed.	Jr. Technical Superintendent	16.08.2008
10	Kumar Vikram, Intermediate Commerce & DCA+Tally	Senior Technician	27.08.2004
11	Uma Shankar Pandey, Intermediate	Multi Tasking Staff	16.12.2016
12	Anil Pal, BA & ITI Diploma	Multi Tasking Staff	05.05.2017

Short-term courses/ workshops/seminars/symposia/conferences organised by faculty members

Sl. No.	Coordinator	Title	Period
1	Dr. Avanish Singh Parmar	Advanced Materials for Better Tomorrow (AMBT-2021)	13-17 July, 2021
2	Dr. Bidya Binay Karak	Long-term Study of the Solar Activity, Workshop at ASI 2022	25 March, 2022

Short-term courses/workshops/seminars/symposia/conferences/training programmes attended by faculty members in academic institutions and public sector undertakings

Sl. No.	Name of faculty member	Title	Period and venue
Seminars/Symposia/Conferences			
1	Prof. Prabhakar Singh	International Conference on Energy Materials and Devices (ICEMD-2022) organised by MMV, BHU	Online mode, 11th January 2022

Sl. No.	Name of faculty member	Title	Period and venue
2	Prof. Prabhakar Singh	46th International Conference and Expo on Advanced Ceramics and Composites (ICACC2022), Florida	Online mode, 28.01.2022.
3	Prof. Prabhakar Singh	National conference on recent trends in academic research organised by CIIR	Online mode, 31.08.2021
4	Prof. Prabhakar Singh	International conference on Advanced Materials for Better Tomorrow (AMBT-2021) organised by Society for Interdisciplinary Research in Materials and Biology & IIT(BHU)	Online mode, 15.07.2021
5	Dr. Abhishek K. Srivastava	National meet on Aeronomy Research, with theme 'Science of Near-Earth Space & Applications' organized by ISRO	10 May, 2022 (On-line mode)
6	Dr. Abhishek K. Srivastava	PLUTO Symposium	28-29 June 2021 (On-line Mode)
7	Dr. Abhishek K. Srivastava	Future Mission Discussion Meeting by ISRO	06-07 July 2021 (Online mode)
8	Dr. Abhishek K. Srivastava	The 40th Annual Meeting of the Astronomical Society of India – 2022 (ASI), IIT Roorkee	25-29 March, 2022 (Online mode)
9	Dr. Rakesh Kumar Singh	CLEO Meeting Laser Science to Photonics Applications; Optical Society of America, San Jose,USA – Online mode	15-20 May, 2021
10	Dr. Rakesh Kumar Singh	Optical Society of India (OSI) meeting – online; IIT Delhi	24-27 September, 2021
11	Dr. Rakesh Kumar Singh	IEEE Photonics Conference, Vancouver, Canada; Online Mode	18-21 October, 2021
12	Dr. Avanish Singh Parmar	International Symposium on Advances in Nanosensors and Nanomedicine (Invited talk)	22 December, 2021 Organised by Centre for Nanosensors and Nanomedicine Bennett University
13	Dr. Swapnil Patil	Topological Matter Conference	28 June-01 July, 2021 (Online)
14	Dr. Swapnil Patil	Advanced Materials for Better Tomorrow (AMBT-2021)	13-17 July, 2021 (Online)
15	Dr. Somnath Nag	Workshop on Indian National Gamma Array (INGA) Recent results and future perspectives	28-29 June, 2021 IUAC New Delhi
16	Dr. Somnath Nag	Accelerator Users Workshop -70th IUAC New Delhi	05-07 July, 2021 IUAC New Delhi
17	Dr. Somnath Nag	Accelerator Users Workshop -71st IUAC New Delhi	15-18 December, 2021, IUAC New Delhi
18	Dr. Somnath Nag	Safety Aspects in Radiation Safety Aspects in Research Applications of ionising radiation' RA-53	24 May-02 June, 2021
19	Dr. Gauhar Abbas	Anomalies 2021	10-12 November, 2021, IIT Hyderabad
20	Dr. Awaneesh Singh	Current trends in Non-Equilibrium Physics	22-26 November, 2021, School of Physical Sciences, Jawaharlal Nehru University, New Delhi,
21	Dr. Awaneesh Singh	The klog W series	Attending since 12 March 2020, Seminars Online mode (GSNP and APS sponsored)
22	Dr. Bidya Binay Karak	ESPM 16	06-10 September, 2021
23	Dr. Bidya Binay Karak	XVIIth Hvar Astrophysical Colloquium Programme	20-24 September, 2021
24	Dr. Bidya Binay Karak	STP 15, SCOSTEP	21-25 February, 2022
25	Dr. Bidya Binay Karak	Astronomical Society of India, 2022	25-29 March 2022

Sl. No.	Name of faculty member	Title	Period and venue
26	Dr. Pavan Kumar Aluri	A Discussion on the Cosmological Principle	25-28 October, 2021, Asia Pacific Center for Theoretical Physics, Pohang, South Korea (Online)
Meetings			
1	Prof. Prabhakar Singh	Confidential meeting at UPSC, New Delhi	3 to 6 March, 2022
2	Prof. Prabhakar Singh	Confidential meeting at UPSC, New Delhi	6 to 8 September, 2021
3	Prof. Prabhakar Singh	NAAC meeting (Online)	29 to 30 December, 2021
4	Prof. Prabhakar Singh	AICTE online expert committee visit meeting	26.11.2021
5	Prof. Prabhakar Singh	AICTE online expert committee visit meeting	05.07.2021
6	Dr. Somnath Nag	Discussion meeting in the Workshop on Nuclear Photonics and Research Opportunities at ELI-NP IIT Ropar	09 September, 2021
7	Dr. Somnath Nag	PAC meeting for presenting experimental proposals, IFIN-HH, Bucharest, Romania	14-15 October 2021
8	Dr. Somnath Nag	DAE Symp. On Nuclear Physics (Phd Student had oral presentation)	01-05 December 2021

Special lectures delivered by faculty members in other institutions

Sl. No.	Name of faculty member	Topic of lecture	Institution	Date
1	Prof. Debaprasad Giri	Modeling and Simulations of Polymers and Biopolymers	Refresher course on "Advances in Mathematical and Physical Sciences" in UGC-HRDC, Dr. H.S. Gour University, Sagar	15-30 November, 2021
2.	Prof. Sandip Chatterjee	Magnetic Topological materials	International Conference on the Topology in Condensed Matter Systems (ICTCMS - 2022) at SNBNCBS, Kolkata	February 21 – 23, 2022
3	Prof Prabhakar Singh	Materials for renewable and green energy	Ewing Christian college, under the college Lecture Series Scheme	4th February 2022
4	Prof Prabhakar Singh	Electromagnetic theory	U.P. College under DBT star college Scheme	8th January 2022
5	Prof Prabhakar Singh	Novel Materials and their applications	Under AICTE Training & Learning -Faculty Development Program organised by by Maharaj Ranjit Singh Panjab Technical University Bhatinda in online mode	22nd July, 2021
6	Prof Prabhakar Singh	Post-Independence Scenario of Renewable Energy Resources in India	Central University of Hariyana under Azadi Ka Amrit Mahotsav in online mode	02.06.2021
7	Dr. Anita Mohan	Why Science is Important	Sunbeam College for Women, Varuna, Varanasi	28 February, 2022
8	Dr. Praveen Chandra Pandey	Multilayered photonic band gap structure for sensing application	2-Days Online Workshop on Thin Film Technologies for Sensors and Opto-electronic Applications, IIIT Allahabad	18 July, 2021

Sl. No.	Name of faculty member	Topic of lecture	Institution	Date
9	Dr. Praveen Chandra Pandey	Luminescence Study of Some Doped Molybdates	International Conference on Environment and Energy materials (INCEEM-2021), Sharda University	26-31 July, 2021
10	Dr. Praveen Chandra Pandey	Structural and Optical study of some doped molybdates for wLED application	27th CONIAPS XXVII on Frontiers in Physics	26-28 October, 2021
11	Dr. Praveen Chandra Pandey	Study of one-dimensional photonic crystals composed of graded index materials	International Conference AIPRSM-2021, Department of Physics, L.N. Mithila University, Darbhanga	25-26 October, 2021
12	Dr. Praveen Chandra Pandey	Expert Science talk in Science Awareness Mela	Kunwar Inter College Narwar Ghazipur	30 December, 2021
13	Dr. Praveen Chandra Pandey	OPTICAL FIBERS – Waveguiding Fundamentals	Star College Scheme, Physics Department, Udai Pratap College, Varanasi	07 January, 2022
14	Dr. Praveen Chandra Pandey	Historical Development of Quantum Mechanics	Online Workshop on "Foundations of Quantum Mechanics" organized by Department of Physics, DBT Star College Scheme, K.N. Govt. P.G. College, Gyanpur, Bhadohi	30 January- 01 February, 2022
15	Dr. Praveen Chandra Pandey	Study of Some Novel Crystal Fibers for Sensing Applications	National Symposium on Laser in Biology, Medical Science, Atmospheric Science and Climate Change, Physics Department, Udai Pratap College, Varanasi	14 March, 2022
16	Dr. Shail Upadhyay	27th International Conference of International Academy of Physical Sciences (CONIAPS XXVII) on Frontiers in Physics	University of Kashmir (Online)	26-28 October, 2021
17	Dr. Abhishek K. Srivastava	The Dynamic Sun	St. Xavier's College, Pallayamkottai, Tamilnadu	16 August, 2021
18	Dr. Abhishek K. Srivastava	Magnetohydrodynamics: A tool to understand the dynamics of magnetized plasma	Refresher Course on "Advances in Mathematical & Physical Sciences", Dr. HS Gour University, Sagar, MP, India	22 November, 2021
19	Dr. Abhishek K. Srivastava	Grand Challenges in Understanding the Magnetically Active Sun	IEC College of Engineering, Noida	09 December, 2021
20	Dr. Rakesh Kumar Singh	Sensing vector and Orbital angular momentum (OAM) modes from the randomly scattered light fields (Invited)	CLEO Meeting Laser Science to Photonics Applications Optical Society of America, San Jose, USA – Online mode	10 May, 2021
21	Dr. Rakesh Kumar Singh	Holographic polarization microscope-challenges and opportunities (Invited)	Optical Society of India Meeting at IIT Delhi-Online	26 September, 2021
22	Dr. Rakesh Kumar Singh	Quantitative phase recovery in Ghost Imaging (Invited)	IEEE Photonics Conference (IPC) 2021 Canada- Online	20 October, 2021
23	Dr. Sunil Kumar Mishra	Introduction to Quantum Algorithms	IIIT Dharwad	21 July, 2021
24	Dr. Sunil Kumar Mishra	Quantum gates and circuits	ABV-IIITM Gwalior	06 October, 2021
25	Dr. Sunil Kumar Mishra	Introduction to Quantum Computing	Tripura University	09 February, 2022
26	Dr. Saurabh Tripathi	Unambiguous evidence of three coexisting ferroelectric phases in a lead-free $Li_xNa_{1-x}NbO_3$ system	HRDC, Pt. Ravishankar Shukla University (PRSU), Raipur	27 August, 2021

Sl. No.	Name of faculty member	Topic of lecture	Institution	Date
27	Dr. Saurabh Tripathi	Unambiguous evidence of three coexisting ferroelectric phases in a lead-free $Li_xNa_{1-x}NbO_3$ system	MPRI Seminar at University of the Witwatesrand, Johannesburg.	17 June, 2021
28	Dr. Swapnil Patil	Angle Resolved Photoemission Spectroscopy (ARPES): Fundamentals and Applications	Online mode	12 December, 2021
29	Dr. Prasun Dutta	Large scale Structure and Dynamics of the interstellar medium	IISC, Bangalore	01 September, 2021
30	Dr. Prasun Dutta	Large scale Structure and Dynamics of the interstellar medium	Centre for Astrophysics and Supercomputing at Swinburne, Australia	24 February, 2022
31	Dr. Somnath Nag	Evolution and Interplay of Shapes in a Nucleus	Midnapore City College Webinar series (Invited Speaker)	28 July, 2021
32	Dr. Somnath Nag	To probe collectivity in nuclei using high intense photon beam at ELI-NP	Workshop on Nuclear Photonics and Research Opportunities at ELI-NP (Invited Speaker)	09 September 2021
33	Dr. Somnath Nag	Multi-dimensional Applications of Particle Accelerators (a review in the field of medical sciences)	IIT-NIMS materials science online workshop (Invited Speaker) National Institute for Materials Science (NIMS), 1-2-1 Sengen Tsukuba, Ibaraki 305-0047, Japan (Online mode)	06-10 December, 2021
34	Dr. Somnath Nag	Extra lectures series on all the Nuclear structure for Semester III Msc. Students (Invited Speaker)	Department of Physics, Bombay University	17 January- 05 February, 2022
35	Dr. Sunil Kumar Singh	Photon upconversion in lanthanide doped nanostructures & their applications	IIT (BHU) and NIMS Japan Materials Science Workshop (Online mode)	09 December, 2021
36	Dr. Sunil Kumar Singh	Photoluminescence spectroscopy and its applications	Hari Singh Gour Vishwavidyalaya, Sagar, India (Online mode)	23 February, 2022
37	Dr. Sunil Kumar Singh	Upconversion Spectroscopy	Mahatma Gandhi Central University, Motihari, Bihar (online mode)	04 March, 2022
38	Dr. Sunil Kumar Singh	Laser Spectroscopy for Biological Applications	Physics Department, Udai Pratap College, Varanasi	14 March, 2022
39	Dr. Gauhar Abbas	Flavour from the $Z2 \times Z5$ symmetry	Indian Institute of Technology, Hyderabad	10-12 November 2021
40	Dr. Bidya Binay Karak	Dynamo & solar cycle RSWG meeting	Max Planck Institute of Solar System Research, Germany	28 February, 2022

Visits abroad by faculty members

Sl. No.	Name of faculty member	Country visited	Date of leaving India	Date of returning India	Purpose of visit	Funding from
1	Dr. Bidya Binay Karak	Germany	April 6, 2021	July 1, 2021	Research work	Humboldt fellowship

Honours and awards

Sl. No.	Name of faculty member	Details of award
1	Dr. Abhishek Kumar Srivastava	This is the first best teacher award constituted by IIT (BHU) in 2021. Dr. A.K. Srivastava is awarded by it on 5th September 2021.
2	Dr. Rakesh Kumar Singh	Received Best teacher award constituted by IIT (BHU) in 2021.
3	Dr. Bidya Binay Karak	Humboldt Research Fellowship, Germany (April 2021 – July 2021)

Fellowships of academic and professional societies

Sl. No.	Name of faculty member	Details of fellowship
1	Dr. Rakesh Kumar Singh	Promoted to Senior Member in 2021; Society of Photo Optical Instrumentation Engineers (SPIE) USA
2	Dr. Avanish Singh Parmar	President, Society of Interdisciplinary Research in Biology and Materials
3	Dr. Bidya Binay Karak	Ramanujan Fellowship, Gov. of India (2018-2022)

Books, monographs authored/co-authored

Sl. No.	Name of author/co-author	Title	Publisher
1	Chourasiya S. K., Gautam G., Kumar N., Mohan A., and Mohan S.	Tribology and Surface Engineering for Industrial Applications , Tribology of Spray-Formed Aluminum Alloys and Their Composites (Book Chapter)	Edited by Catalin I. Pruncu, Amit Aherwar, and Stanislav Gorb, First edition published 2022 by CRC Press 6000 Broken Sound Parkway NW, Suite 300, Boca Raton, FL 33487-2742 and by CRC Press 2 Park Square, Milton Park, Abingdon, Oxon, OX14 4RN 2022 Taylor & Francis Group, LLC CRC Press is an imprint of Taylor & Francis Group, LLC
2	A.K. Srivastava, Marcel Goossens, I. Arregui	Magnetohydrodynamic Processes in Solar Plasmas	The contract has been signed with ELSEVIER and book is under development.
3	A.K. Srivastava, R. Erdelyi, S. Poedts, P.-F. Chen, Yihua Yan	Special Topical Issue titled "Data-driven MHD: Novel Applications to the Solar Atmosphere"	Frontiers in Astronomy & Space Sciences, 2021
4	Priyam Singh, Sachin Singh, P Singh, SK Singh	Application of Upconversion in Photocatalysis and Photodetectors	Wiley ISBN: 9783527349654
5	Priyam Singh, P Singh, SK Singh	Photon Upconversion Spectroscopy	Springer Nature ISBN 9789813360839
6	AK Singh, SK Singh	Optical Properties of ZnO	Elsevier ISBN: 9780128189009

Editorial boards of journals

Sl. No.	Name of faculty member	Position (editor/ member)	Name of journal
1	Prof. Prabhakar Singh	Associate Editor	Frontiers in Electronic Materials (for the Dielectric Materials section)
2	Prof. Prabhakar Singh	Associate Editor	International Journal of Multidisciplinary Innovative Research (IJMIR)
3	Dr Praveen Chandra Pandey	Associate Editor	Journal Int Acad of Physical Sciences
4	Dr. Abhishek K. Srivastava	Associate Editor	Frontiers in Astronomy and Space Sciences
5	Dr. Abhishek K. Srivastava	Guest Editor	Frontiers in Astronomy and Space Sciences, section Stellar and Solar Physics
6	Dr. Bidya Binay Karak	Guest Editor	Frontiers in Astronomy and Space Sciences, section Stellar and Solar Physics

Design and Development Activities

New facilities added

Sl. No.	Details (Infrastructure, equipment, etc.)	Value (in lakhs of rupees)
1	Gamma ray spectrometer based on NaI scintillation detector system and single channel analyzer	4 Lakh

Sl. No.	Details (Infrastructure, equipment, etc.)	Value (in lakhs of rupees)
2	Rack Server	5 Lakh
3	Workstation	1 Lakh

Research and Consultancy Sponsored research projects (Ongoing only)

Sl. No.	Title	Period	Funding agency	Amount (in lakhs of Rs.)	Project P.I
1	Investigations of new lead free perovskite materials for solar cells	2019-2022	SERB	Rs. 38,09,391/-	Prof. Prabhakar Singh
2	Fabrication of Cathode materials and SOFC for energy applications	2021-2024	UPCST	Rs. 11,44,000/-	Prof. Prabhakar Singh
3	High Proton conducting metal phosphonate electrolytes for fuel cell applications	2022-2024	NRB	Rs. 41,20,378/-	Prof. Prabhakar Singh
4	Novel Observations and Modeling of the Heating and Dynamical Plasma Processes in the Localized Solar Atmosphere	2022 onward	ISRO	28.03 Lakhs	Dr. Abhishek K. Srivastava
5	Study of polarimetric parameters from laser speckle	2020-2023	CSIR	29.73 Lakhs	Dr. Rakesh Kumar Singh
6	Scattering assisted imaging- exploiting randomness of the light	2020-2023	SERB	34.21 Lakhs	Dr. Rakesh Kumar Singh
7	Spatially resolved digital holography polarization microscope for diagnosis applications	2021-2024	DBT	41.44 Lakhs	Dr. Rakesh Kumar Singh
8	Tailoring correlations of light using plasmonic and nano structures	2021-2024	BRNS	33.70 Lakhs	Dr. Rakesh Kumar Singh
9	Tuning Self- assembly of Fluorescent Protein Nanodots for Melanoma Skin Cancer	31 Dec., 2019 – 30 Dec., 2022	SERB	36.68 Lakhs	Dr. Avanish Singh Parmar
10	Study of Quantum Chaos and multipartite entanglement using Quantum Circuits	2022-2025	DST-SERB	21.55 Lakhs	Dr. Sunil Kumar Mishra
11	Tailoring properties by altering long and short-range structures in eco-friendly, Pb-free ferroelectric perovskite oxides for energy harvesting	3 years	DST-SERB	18.53 Lakhs	Dr. Saurabh Tripathi
12	Analytical study of hydrodynamic theory of wet active fluid	2022-2025	DST SERB Matrics	6 Lakhs	Dr. Shradha Mishra
13	Active polar flock in quasi two-dimensional geometry: role of confinement and boundary condition	2022-2025	DST SERB CRG	31 Lakhs	Dr. Shradha Mishra
14	Thermalization and Non-Equilibrium Dynamics in Quantum Systems	2016-21	DST-SERB	38 Lakhs	Dr. Rajeev Singh
15	Modeling self-assembly and phase separation kinetics in the complex soft materials	Nov 2018 to May 2022	SERB	46.54 Lakhs	Dr. Awaneesh Singh
16	Exploring the origin and dynamics of magnetic cycles of low main sequence stars	2018-2022	SERB/DST	38.00 Lakhs	Dr. Bidya Binay Karak
17	On understanding the solar activity and preparing for space weather prediction using a state-of-art dynamo model	2020-2023	ISRO/ RESPOND	30.99 Lakhs	Dr. Bidya Binay Karak

Sl. No.	Title	Period	Funding agency	Amount (in lakhs of Rs.)	Project P.I
18	What Determines The Dynamo Effectivity Of Solar Active Regions?	2019 - 2022	International Space Science Institute, Bern, Switzerland	Cost for Two international travels	Dr. Bidya Binay Karak

Industrial consultancy projects (Ongoing only)

Sl. No.	Name of faculty member	Title	Industry	Amount (in lakhs of Rs.)
1				

Faculty members' participation with other universities under MoUs (Ongoing only)

1. Rakesh Kumar Singh: Bar Ilan University, Israel and Nigata University, Japan

Research publications

Total number of papers published in refereed National journals	0
Total number of papers published in refereed International journals	106
Total number of papers presented in National conferences	5
Total number of papers presented in International conferences	3

Refereed International journals

1. Senapati S., Upadhyaya A., Dhruw S., Giri D., Maiti P. (2021) Controlled DNA delivery Using Poly (lactide) nanoparticles and understanding the binding interactions, J. Physical Chemistry B 125 (35), 10009-10017.
2. Kumar S., Singh J.P., Giri D., Mishra S. (2021) Effect of polydispersity on the dynamics of active Brownian particles, Phys. Rev. E 104 (2), 024601.
3. Mohanta D., Giri D. and Kumar Sanjay (2022) Effect of solvent gradient inside the entropic trap on polymer migration, Phys. Rev. E 105 024135 (1-8).
4. Sharma P., Singh P., Kamni (2021) Study of synthesis mechanism, structural, optical and luminescent properties of bluish-violet rare earth doped KSrVO4: Nd_{3+} nano powders, Materials Science & Engineering B, 276, 115564.
5. Tomar V., Pandey R., Singh P. (2021) Influence of quenching rate and quenching media on formation of TeO2 Glasses, Journal of Materials Science: Materials in Electronics, Volume- 32, Issue- 13, May 2021, Pages 17726-17740.
6. Singh S.; Singh P., Parkash O., Kumar D. (2021) Studies on Diffuse Phase Transition in Co and La doped BaTi0.85Sn0.15O3, Journal of Materials Science: Materials in Electronics, Volume- 32, Issue- 12, May 2021, Pages 16494-16504.
7. Singh P., Pandey R, Srivastava K.K., Singh P. (2022) Examining the consequences of calcium substitution on the physical properties and conduction mechanism of Y3GaO6, Journal of Materials Science: Materials in Electronics, DOI: 10.1007/s10854-022-08022-1.
8. Chauhan M., Jha P.K., Jha P.A., Singh P. (2022) Influence of crystalline phase on electrocatalytic behaviour for Sm2-xSrxNiO4-δ (x = 0.4 to 1.0) Ruddlesden Popper based system: A comparative study of bulk and thin electrocatalysts, Phys. Chem. Chem. Phys., 24, 5330-5342. DOI: 10.1039/D1CP05955F.
9. Bangwal A.S., Chauhan M., Singh P. (2022) Catalytic behavior of Pr1-xBa1+xCo2O6-δ in alkaline medium, International Journal of Hydrogen Energy, 47, 12582-12591. https://doi.org/10.1016/j.ijhydene.2022.02.002.

10. Kumar M., Pawar V., Jha P.K., Jha P.A., Singh P. (2022) Compositional degradation with Br content in Cesium lead halide CsPbBrxI3-x, J. Solid State Chemistry 308, 122893.

11. Sharma U., Kailash Veerappan U.K., Jha P.K., Jha P.A., Singh P. (2022) Bandgap and electrochemical engineering for disordered LaFeO3, J. Appl. Phys. 131, 024901.

12. Saurabh Y.K., Jha P.A., Dubey P.K., Jha P.K., Singh P. (2022) Bandgap engineering in TiO2/rGO 1D photonic metasurfaces as broadband Solar absorber, J. Appl. Phys. 131 023106.

13. Pal D., Kumar S., Shahi P., Dan S., Verma A., Gangwar V.K., Singh M., Chakravarty S., Uwatoko Y., Saha S., Patil S. and Chatterjee S. (2021) Defect induced ferromagnetic ordering and room temperature negative magnetoresistance in MoTeP. Scientific reports. 11 (1): 1-9.

14. Anand K., Pal A., Alam M., Dan S., Kumar S., Ghosh S., Kumari S., Das A., Sawada M., Mohan A., Sathe V.G. and Chatterjee S. (2021) Emergence of metamagnetic transition, re-entrant cluster glass and spin phonon coupling in Tb2CoMnO6. Journal of Physics Condensed Matter. 33 (27): 275802.

15. Anand K., Alam M., Pal A., Singh P., Kumari S., Joshi A.G., Das A., Mohan A. and Chatterjee S. (2021) Existence of Griffiths phase and unusual spin dynamics in double perovskite Tb2CoMnO6. Journal of Magnetism and Magnetic Materials. 528: 167697.

16. Gangwar V.K., Kumar S., Singh M., Singh P., Ghosh L., Pal D., Shahi P., Uwatoko Y., Schwier E.F., Shimada K., Sharma D.K., Kumar S. and Chatterjee S. (2021) Observation of antiferromagnetic ordering from muon spin resonance study and the Kondo effect in a Dy-doped Bi2Se3 topological insulator. Journal of Physics D: Applied Physics. 54 (45): 455302.

17. Pal D., Sharma B.B., Gangwar V.K., Dan S., Singh M., Garg N., Patil S. and Chatterjee S. (2021) Pressure induced topological and structural transitions in iron and sulphur doped Sb2Te3. Materials Letters. 302: 130401.

18. Singh R., Kumar S., Jain A., Singh M., Ghosh L., Singh A., Banik S., Lakhani A., Patil S., Schwier E.F., Shimada K., Yusuf S.M. and Chatterjee S. (2021) Competition between axial anomaly and ferromagnetic ordering in Bi2-xFexSe3–xSx topological insulator: A study of magnetic and magnetotransport properties. Journal of Materiomics. 8 (3): 669-677.

19. Dwivedi G.D., Kumawat S.M., Shyu W.S., Chien Y.H., Su P.F., Huang Z.H., Haw S.C., Chen J.M., Chou H. and Chatterjee S. (2021) Correlating X-ray absorption spectra and ultraviolet photoelectron spectra to understand magnetic and transport properties of charge-ordered perovskite manganites. Applied Surface Science. 569: 151131.

20. Singh M., Kumar S., Alam M., Gangwar V.K., Ghosh L., Pal D., Singh R., Shahi P., Chaudhary P., Shimada K. and Chatterjee S. (2021) Evidence of surface and bulk magnetic ordering in Fe and Mn doped Bi2(SeS)3 topological insulator. Applied Physics Letters. 118 (13): 132409.

21. Dan S., Kumar S., Dan S., Pal D., S. Patil, Verma A., Saha S., Shimada K., and Chatterjee S. (2022), Unraveling the obscure electronic transition and tuning of Fermi level in Cu substituted Bi2Te3 compound. Applied Physics Letters. 120: 022105.

22. Yadav V.P., Prasad R. & Bala R. (2021) Leaf area index estimation of wheat crop using modified water cloud model from the time-series SAR and optical satellite data, Geocarto International, 36(7), 791-802

23. Bala R., Prasad R., & Yadav V.P. (2021) Quantification of urban heat intensity with land use/land cover changes using Landsat satellite data over urban landscapes, Theoretical and Applied Climatology, 145(1), 1-12.

24. Yadav V.P., Prasad R., Bala R., Srivastava P. K. & Vanama V.S.K. (2021) Appraisal of dual polarimetric radar vegetation index in first order microwave scattering algorithm using sentinel–1A (C-band) and ALOS-2 (L-band) SAR data. Geocarto International, 1-19.

25. Srivastava P.K., Petropoulos G.P., Prasad R. & Triantakonstantis D. (2021) Random Forests with Bagging and Genetic Algorithms Coupled with Least Trimmed Squares Regression for Soil Moisture Deficit Using SMOS Satellite Soil Moisture, ISPRS International Journal of Geo-Information, 10(8), 507.

26. Chaudhary S.K., Gupta D.K., Srivastava P.K., Pandey D.K., Das A.K. & Prasad R. (2021) Evaluation of Radar/ Optical Based Vegetation Descriptors in Water Cloud Model for Soil Moisture Retrieval, IEEE Sensors Journal, 21(18), 21030-21037.

27. Chaudhary S.K., Srivastava P.K., Gupta D.K., Kumar P., Prasad R., Pandey D.K. & Gupta M. (2022) Machine learning algorithms for soil moisture estimation using Sentinel-1: Model development and implementation, Advances in Space Research, 69(4), 1799-1812.

28. Yadav S.A., Prasad R., Yadav V.P., Verma B., Singh S.K., Sharma J. & Srivastava P.K. (2022) Far-field bistatic scattering simulation for rice crop biophysical parameters retrieval using modified radiative transfer model at X-and C-band, Remote Sensing of Environment, 272, 112959.

29. Sharma J., Prasad R., Srivastava P.K., Yadav S.A. & Yadav V.P. (2022) Improving Spatial Representation of Soil Moisture through different downscaling approaches, IEEE Transactions on Geoscience and Remote Sensing.

30. Verma B., Prasad R., Srivastava P.K., Yadav S.A., Singh P. & Singh R.K. (2022) Investigation of optimal vegetation indices for retrieval of leaf chlorophyll and leaf area index using enhanced learning algorithms, Computers and Electronics in Agriculture, 192, 106581.

31. Pandey A., Kumar N., Gautam G., Mohan A., Mohan S., Padapa A.K. (2021) Processing and wear characterisation of self-lubricating AA6082/TiC/Gr composites, Advances in Materials and Processing Technologies.

32. Kumar V., Mishra A., Ankit, Mohan S., Mohan A. (2021) Utilization of waste graphite crucible for the fabrication of ex-situ AA1100/Graphite composite via stir casting route, Materials Today Proceedings, 46, Part 3, 1481-1486.

33. Kumar V., Mohan S., Gautam G., Mohan A. (2022) TRIBOLOGY OF INSITU Zn-Al/ZrB2 COMPOSITES IN RECIPROCATING MOTION. International Journal of Metalcasting, 01-13.

34. Kumar Hemant, Ramani Umang, Singh Bipin K., Pandey Praveen C. (2021) Investigations on the Highly Sensitive MetalCoated Broad Range DShaped Optical Fiber Refractive Index Sensor, Plasmonics 1-9.

35. Pandey Prashant K, Chauhan Vaibhav, Dixit Prashant, Pandey Praveen C. (2021) Correlation of enhanced photocurrent with structural and optical properties of Ag–ZnO nanocomposites synthesized by a facile chemical route, Physica B: Condensed Matter, 412937.

36. Singh B.K., Bambole V., Tiwari S., Shukla K.K., Pandey P.C., Rastogi V. (2021) Photonic band gap consequences in one-dimensional exponential graded index photonic crystals, Optik 240, 166854.

37. Ramani U., Kumar H., Singh B.K., Pandey P.C. (2021) Design of surface plasmon resonance based both side polished photonic crystal fiber for highly efficient refractive index sensor, Optik 248, 168062.

38. Kumar P., Chauhan V., Pandey P.C. (2021) Role of dysprosium doping concentration on structural deformation of zinc oxide nanoparticles, Physica B: Condensed Matter 621, 413313.

39. Kumar R., Pandey P.C., Singh B.K. (2021) Tungsten-Based Broadband Perfect Metamaterial Absorber in Visible to Near-Infrared Region for Solar Cell Applications, Journal of International Academy of Physical Sciences 25 (3), 427-446.

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42. Pandey P.K., Pandey P.C. (2022) Reddish-orange luminescence enhancement via Li+ co-doping in Sm3+ doped Bi2O3 nano-sheets, Journal of Luminescence 242, 118600.

43. Tiwari S., Dixit A., Pandey P.C. (2022) Temperature-based dispersion compensating ability of a photonic crystal fiber, Optical Engineering 61 (1), 016105.

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45. Nirala G., Yadav D., Katheriya T., Upadhyay S. (2022) Temperature dependent negative permittivity in solid solutions Sr2Mn1-xSnxO4 (x= 0, 0.3, 0.5), Journal of the European Ceramic Society, 42 (2022) 453-461.

46. Rast, M.P. et al. Incldуing Srivastava A.K. (2021) Critical Science Plan for the Daniel K. Inouye Solar Telescope (DKIST), Solar Physics. 296, Issue 4: article id.70.

47. Srivastava A.K., Ballester J.L., Cally P.S., Carlsson M., Goossens M., Jess D.B., Khomenko E., Mathioudakis M., Murawski M., Zaqarashvili T.V. (2021) Chromospheric Heating by Magnetohydrodynamic Waves and Instabilities, Journal of Geophysical Research -- Space Physics. 126: e2020JA029097.

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49. Zimovets I.V., McLaughlin J.A., Srivastava A.K., Kolotkov D.Y., Kuznetsov A.A., Kupriyanova E.G., Cho I.-H., Inglis A.R., Reale F., Pascoe D.J., Tian H., Yuan D., Li D., Zhang Q.M. (2021) Quasi-periodic pulsations in solar and stellar flares: A review of underpinning physical mechanisms and their predicted observational signatures. Space Science Reviews, 217: 66.

50. Mishra S.K., Singh Balveer, Srivastava A.K., Kayshap P., Dwivedi B.N. (2021) Evolution of Kelvin-Helmholtz Instability in the Fan-Spine Topology, The Astrophysical Journal: 923, 72.

51. Srivastava A.K., Mishra Sudheer K., Jelinek P. (2021) The prominence driven forced reconnection in the solar corona and associated plasma dynamics, The Astrophysical Journal: 920, 18.

52. González-Avilés J.J., Murawski K., Srivastava A.K., Zaqarashvili T.V., González-Esparza J.A. (2021) Numerical simulations of macrospicule jets under energy imbalance conditions in the solar atmosphere. Monthly Notices of the Royal Astronomical Society: 505, Pages 50–64.

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55. Srivastava A.K., Erdelyi R., Poedts S., Chen P.F., Yihua Y. (2021) Editorial: Data-driven MHD – Novel Applications to the Solar Atmosphere, 2021, Frontiers in Astronomy and Space Sciences (FrASS): 8, 140.

56. Prasad Abhinav, Srivastava A.K., Wang T.J, Sangal K. (2022) Role of Non-Ideal Dissipation with Heating–Cooling Misbalance on the Phase Shifts of Standing Slow Magnetohydrodynamic Waves. Solar Physics: 297, 5.

57. Chen L., Singh Rakesh Kumar, Vinu R.V., Chen Z. and Pu J. (2021) A wavefront division multiplexing holographic scheme and its application in looking through diffuser, New J. Phys (IOP) 23, 113034.

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2. Singh P., Pandey R., Singh P., (2022).Insight into structural and electrical properties of potassium and lithium doped non-stoichiometric sodium bismuth titanate ($Na_{0.54}$ $Bi_{0.46}TiO_{3-\delta}$), Springer Proceedings in Materials, 14, 171–185, International Conference on "Advanced Functional Material and Devices" (AFMD-2021).

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Distinguished Visitors

Sl. No.	Name of the visitor & designation	Date of visit	Purpose of visit
1	Prof. Dipankar Banerjee	28-29 November, 2021	Institute talk and MoU between ARIES and IIT (BHU)

Other activities

International collaboration/achievements by the Department/School

Dr. Abhishek K. Srivastava Lead and work with many distinguished colleagues across the globe on various cutting edge scientific problems and related research. Some notable names are: Prof. K. Murawski (UMCS, Poland), Prof. M. Mathioudakis (QUB, Belfast, UK), Prof. R von-fay Siebenburgen (Sheffield University, UK), Dr. Eamon Scullion (Northumbria University, UK), Prof. P.-F. Chen (Nanjing University, China), Prof. Paul Cally (Monash University, Australia); Dr. P. Jelínek (University of South Bohemia, Czech Republic), Prof. J.-G. Doyle (Armagh Observatory, UK), Profs. T.-J. Wang and L. Ofman (NASA-GSFC, USA), Dr. J.J. González-Avilés (Instituto de Geofísica, Mexico), Prof. T.V. Zaqarashvili (University of Graz, Austria), Profs. Marcel Goossens and Tom Van Doorsselaere (KU Leuven, Belgium), Prof. S.-W. McIntosh (NCAS-High Altitude Observatory, Bulder, USA), Dr. S.K. Tiwari (Lockheed Martin Solar and Astrophysics Laboratory, Palo Alto, USA), Prof. Z. E Musielak (The University of Texas, USA), Dr. I. V. Zimovets (Space Research Institute of the Russian Academy of Sciences (IKI), Moscow, Russia), Dr. Yuan Ding (Institute of Space Science and Applied Technology, Harbin Institute of Technology, China), and many other colleagues across the globe.

Any other Information

1. Dr. Abhishek Kumar Srivastava, Member on SUIT Science Management Panel (SSMP) for Aditya-L1 Space Mission, 2021.

2. Dr. Abhishek Kumar Srivastava, Lead the Aditya-L1 SUIT (Solar Ultraviolet Imaging Telescope) Science Management Panel (SSMP) on "Chromospheric Jets and Transient Brightening". Team Members:- A.K. Srivastava; Tanmoy Samanta (IIA, Bangalore); Durgesh Tripathi (IUCAA Pune); Elena Khomenko (IAC, Spain); Ramit Bhattacharya (USO, PRL); Pradeep Kayshap (VIT, Bhopal).

3. Dr. Abhishek Kumar Srivastava, Part of the World's Largest 4m-Daniel K. Inouye Solar Telescope (DKIST) Critical Science Plan Paper, which is Published in "Solar Physics" in 2021. This led the path to further explore the novel science on various DKIST observations in coming future. (Link:- https://link.springer.com/article/10.1007%2Fs11207-021-01789-2).

4. Dr. Abhishek Kumar Srivastava, The part of European Solar Physics Online Seminar Group (ESPS) with other EU institutions. See here: https://espos.stream/about/

5. Dr. Abhishek Kumar Srivastava, Participating in the International Team for planning and discussion of research on "Effects of Coronal Heating/Cooling on MHD Waves" (https://warwick.ac.uk/fac/sci/physics/research/cfsa/people/kolotkov/webinar-coronal-heating-cooling-mhd-waves/).

6. Dr. Abhishek Kumar Srivastava, Member, Curriculum Review Committee for UG and PG Courses; From 2 April 2019- till date.

7. Dr. Abhishek Kumar Srivastava, Member, Regional Coordination Council; Region Academic Centre for Space, IIT (BHU); From 28th January 2021 to till date.

8. Dr. Abhishek Kumar Srivastava, Member, A Joint Policy and Management Committee (JPMC); From 19th March 2021 to till date. Roles: - Works as per the MoU signed between Indian Space Research Organisation (ISRO) and IIT (BHU) this committee has been constituted. This is a committee having members both from IIT (BHU) and ISRO to finally evaluate the peer-reviewed ISRO grant proposals and related projects; Execution, evaluation, and approval on project related presentations.

9. Dr. Abhishek Kumar Srivastava, Faculty Coordinator (Academic), Student Counseling Services (SCS); From 20 November 2011 to till date.

10. Dr. Abhishek Kumar Srivastava, Member, Institute Core Courses Monitoring Committee of IIT (BHU); From 2 November 2017 to till date.

11. Dr. Abhishek Kumar Srivastava, Member, Advisory Committee for the Central Instrument Facility

Key Instruments:

Fig.: Rheometer, Dynamic Light Scattering, ultracentrifuge, UV-Vis, Optical microscope (Biophysics and Nanotechnology Laboratory)

24. Centre for Computing and Information Services (CCIS)

Year of Establishment: April, 2017

Head of the Department during the year 2021-22: Prof. Rajeev Srivastava **w.e.f.** 01.08.2017

Background:

Centre for Computing and Information Services inaugurated on 6th April 2017 has been established as a central facility to provide 24x7 digital backbone to the Computing, Web, Email and Network services of the institute. Centre for Computing and Information Services offers high-end computational servers, high availability web servers, network services and provides a robust platform for various academic and research importunities of the institute. Licensed software, email services and in-house software development for the institute needs are also managed by the Centre. CCIS is one of the growing unit and projects are in early stage for developing it into a facility centre poised horizontally to meet the crescent demand of computerization and software solution required for scientific and research infrastructure of the institute.

Services Offered

Computing Services:

Management of the user login and authentication to all the compute nodes. Running multiple software and their license servers.

We have licenses of following software running on our servers:

- MATLAB Suite of solutions – 50 User licenses with appropriate number numbers of toolboxes.
- Mathematica Software (Perpetual software, network version): 30 User licenses
- CST Studio Software (Perpetual) with basic components: 01 No each.
- Origin Lab Software (100, Network version, Perpetual license)
- MedeA VASP – 01 User (MedeA core GUI, Job/Task Server, VASP, VASP GUI, LAMMPS GUI, Infomatica, COD & COD GUI)
- ANSYS- Academic Multiphysics solution with following licenses:
    - ANSYS Academic Multiphysics Campus 50/500
    - ANSYS Academic Research Chemical Kinetics (5 Tasks)
    - ANSYS Academic Research Scade Suite (1 Tasks)
    - ANSYS Academic Teaching Scade Suite (25 Tasks)
    - ANSYS Academic Ensight Post Processing tool (5 Tasks)
    - ANSYS Additive Suite (5 tasks)
    - ANSYS Discovery Ultimate Enterprise (5 Tasks)
    - ANSYS Academic Spaceclaim tool (25 Tasks)
    - ANSYS Academic Research Ls-Dyna (25 Tasks)
    - CasaXPS – Unlimited Pack (Windows desktop)

- Statistica Ultimate Academic Pack software: 50 users network for 5 years licenses.
- Simulia ABAQUS- 2 Users license (Research Edition)
- Gaussian, GaussView and TCP Linda Software: Site License for Linux Platform.

User can login to the compute nodes and run their application using available purchased licensed software or open source software.

Hardware:

Three Compute Servers are available for providing the computing facility to all the students and faculty members of the Institute. Server are having following configuration:

- 1x Dell R-930 Server: Populated with 4x18 core of Intel Xeon E7-8870 v3 @ 2.10 GHz processor with 45MB L3 Cache, 256GB DDR4 RAM, 8 x 1.2TB 15K hot plug SAS, 01 NVIDIA Tesla P4 GPU
- 3xDell R-730 Server: Populated with 2x10 core of Intel® Xeon® processor E5- 2660v3 @ 2.60 GHz with 25MB L3 Cache, 2U Form factor, 128 GB DDR4 RAM, 3 X 600GB 15K hot plug SAS, 01 NVIDIA Tesla K 40C
- 1xDell R-540 Server: 2 X Intel® Xeon® Silver 4114 2.2G, 10C/20T, 9.6GT/s, 96GB RAM, 3 X 600GB 10K RPM SAS 12Gbps HDD
- 1xDell R-440 Server: 2 X Intel® Xeon® Gold 6132 2.6G,14C/28T,10.4GT/s, 12 X 16GB RAM, 3 X 600GB 10K RPM SAS 12Gbps HDD
- GPU Computer Server: Populated with 2 x Intel Xeon E5-2609 v4 (8 Cores,20M Cache, 1.70 GHz), 128GB DDR4 RAM, 8 Nos. NVIDIA GeForce GTX-1080Ti 11GB GDDR5x, 3584 CUDA cores.

Storage:

Services:

Providing space for the storage requirement for running scientific and research applications of the faculty and students. It is integrated with webservers to provide space for Institute website and other portals, network Servers/ Switches over NAS, being managed by CCIS.

Hardware:

- **Dell SC4020 Storage with FS8600 NAS:** Two controllers running in an active-active mode with automatic failover to each other in case of one controller failure with 20 TB on SAS 10K RPM drives and 100 TB on NL-SAS drives with 105 TB raw capacity (Approx. 70TB usable considering the RAID overhead).

Web Services

Services:

Two primary web servers are running in High Availability for hosting our Institute website. These servers are configured with RHEL Operating System. In the session 2018-19, two more web servers were installed and configured with Centos and Windows Server Operating Systems. There are multiple web servers running on virtual and physical servers catering the needs of web hosting facilities for various portals of the institute.

Applications:

New applications are designed, developed and deployed at CCIS on the regular basis as per the institute needs. Recently, CCIS has designed a new website for the institute to replace the older one. The Institute's website is built in-house and it has replaced several small websites running earlier on different domain and servers making it a truly one website of IIT(BHU). It incorporates all the departments, school, units, offices and covers all the activities governed by the institute placing a uniform structure throughout. In addition, it has decentralized access for website content modification and individual login for all the faculties to maintain their profile. Apart from institute website

few of the many websites their test and backup are hosted on these servers. Some of the developed and hosted applications are listed below-

- Alumni Registration Portal.
- Alumni Giving Back Portal
- Best Faculty Award Portal
- Instrument Booking System
- Faculty appraisal portal.
- Guest housing booking system.
- Intellectual Property Rights (IPR) Portal
- Non faculty recruitment portal.
- Admin information management System.
- ERP IIT BHU.
- Rajbhasha Portal.

Hardware:

- 2xDell R-730 Server: Populated with 2x10 core of Intel® Xeon® processor E5- 2660v3 @ 2.60 GHz with 25MB L3 Cache, 2U Form factor, 128 GB DDR4 RAM, 3 X 600GB 15K hot plug SAS
- 2xDell R-440 Server: 2 X Intel® Xeon® Silver 4114 2.2G, 10C/20T, 9.6GT/s, 96GB RAM, 3 X 600GB 10K hot plug SAS

Email Services

Facilitating with email services to the all faculty members, students and staff of the institute using G Suite for Higher Academic Institution. Services includes email services, classroom, unlimited google drive space etc. The entire users are allocated in various groups as per their department, section, offices, and designation, restricting them access over individual groups for sending emails.

People at CCIS

S. No.	Name	Designation
1	Prof. Rajeev Srivastava	Professor & Head of the Department
2	Dr. Roshan Singh	System Analyst
3	Mr. Mahesh Pandey	System Analyst

Conclusion

As per the available statistics, the students, faculty members and other research staff of the Institute are heavily using the software facilities hosted on the servers. After establishment of the unit, further, an extended server area has been created for hosting more servers. In addition to this new web portal are regularly developed and deployed as per the institute needs. We are continuously in process of enhancing the services available at CCIS to meet the compute and web hosting facilities available at CCIS.

25. Main Library, IIT (BHU), Varanasi

Introduction

The Indian Institute of Technology (Banaras Hindu University), Varanasi library system consists of the Main Library and five departmental libraries, supporting the Institute's teaching, research, and extension programs. All students, faculty members, and employees of the Institute are entitled to use the library facilities to take library membership. Besides having an excellent print collection of over 1,45,000 volumes of books, journals, theses, dissertations, reports, standards, and pamphlets, the library also provides access to over 15,000 electronic journals, more than 3,000 e-books and databases in science, engineering, and technology. The library offers various facilities like a collaborative learning space, Document delivery service, Remote Access facility, e-library, Modern reading room, etc. The library opens on weekdays from 09:30 am to 09.30 pm, including Saturday and Sunday. Also, it is open from 09:30 am to 6:00 pm on Government holidays.

Manpower

Sl. No	Name	Designation
01	Dr. Navin Upadhyay	Deputy Librarian
02	Shri. Kanu Chakraborty	Assistant Librarian
03	Shri Abhishek Shukla	Junior Assistant (Office)
04	Shri Kumar Karn	Senior Technician (Deputed from the workshop)

Library collection

Collection building is one of the vital works of the library that supports the academic and research work of the students, faculty, staff, and other users. Library collection comprising books, journals, theses, reports, standards, pamphlets, and other reading material in science, engineering, technology, humanities, social sciences, and management is considered one of the best and is its greatest asset. The total collection of the library as of March 31 2022, stands as follows:

Sl No	Category	Number
1	Books (Reference and General)	92,740
2	Text Book Bank	23,729
3	ST/SC Book Bank	8,740
4	Bound Volume of periodicals	17,925
5	Theses	789
6	Dissertation	1018
7	Compact Disc	1722

The library added 691 books under reference and general collection, including 245 books received as donations in FY 202122.

Journals/Databases/Standards/E-books

- The Periodical section procures and maintains print and online journals for the academic need of the Institute. In this financial year, the library added more than 150 selective titles of e-books (Textbooks and Reference Books) of publishers Taylor & Francis, Wiley, CBS - Architecture Planning and Design, Bloomsbury Architecture Library, etc. Some new e-journals, Magazines & Databases have been added, like DELNET Database, Project MUSE, Begell House, PressReader, Bloomsbury Architecture Library, The Indian Institute of Architects (IIA) and Project MUSE. Also added Sage - Urban Studies & Planning Collection, all titles in this financial year. The following databases, Standards, e-books and e-journals are accessible.

Database

- Begell House
- DELNET Database
- Derwent World Patents Database
- MathSciNet
- PressReader
- SciFinder Scholar
- Scopus
- Springer Materials
- Web of Science

Standards

- ACI MCP
- Indian Standards(BIS)
- ASTM Standards

E-Books

- ASM Handbook Online
- Begell House
- Bloomsbury Architecture Library
- CBS - Architecture Planning and Design
- Elsevier (selected titles)
- Taylor & Francis (selected titles)
- McGraw Hill (selected Text and Reference books)
- Springer (selected titles)
- Wiley Online (selected titles)
- Royal Society of Chemistry (All e-books published up to 2016).

The Main Library provides web-based access to more than 15,000 full-text journals 24x7 on the institute-wide network and remotely as follows:

Online e-Journal

Publisher	Description
ACM Digital Library	ACM journals (42+), conference proceedings, magazines, newsletters, and multimedia titles.
Actapress	International Journal of Power and Energy Systems
American Concrete Institute	Materials, Structural, Concrete International & Symposium Volume ACI MCP, Materials Journals, ACI Structural Journal, ACI Concrete International, ACI Symposium Volumes
American Chemical Society	49 journals with Legacy Archive for Universities.
American Institute of Physics	It provides access to 19 full-text journals in the area of physics. Backfiles Access: 1997 onward
American Mathematical Society	The AMS journals package includes 15 online journals published by AMS, including 6 open access journals. Backfiles Access: 1999 onwards
American Physical Society	The current collection includes access to 13 leading peer-reviewed research journals. Backfiles Access: All
American Society of Civil Engineers (ASCE)	It publishes 33 journals and contains over 1, 70,000 bibliographic records of everything ASCE has published since 1970.
American Society of Mechanical Engineers (ASME)	ASME collection provides access to 29 journals, including a complete package for ASME journals + AMR.
ASTM Journals	Full package of ASTM journals.
Begell House (Engineering Research Collection) (newly added)	Begell House is a STM academic publisher of medical and scientific journals and books, with a concentration on engineering and biomedical sciences. Engineering Research Collection has access of 29 e-Journals, 3 Databases, 3 Reference titles, 1 e-book & 2 Proceedings titles.
Bentham Science	Bentham Life science collection 59 titles.
Bloomsbury Architecture Library (newly added)	Bloomsbury Architecture Library is a leading digital resource for the study of architecture, urbanism, and interior design. Its dynamic digital platform offers access to wide-ranging text and image content collections, from architectural history to cutting-edge design guidance.

Publisher	Description
Canadian Science Publishing	Canadian Journal of Civil Engineering Backfiles access: 1996 onward
Cambridge University Press	Journal of Fluid Mechanics, Backfiles Access: 2000 Onwards (Newly Added)
CIM Magazine	The Canadian Institute of Mining, Metallurgy and Petroleum (CIM) is an association for minerals industry professionals
De Gruyter	1. International Journal of Nonlinear Sciences and Numerical Simulation 2. Functional calculus and Applied Analysis
Economic and Political Weekly	The Economic and Political Weekly, published in Mumbai, is an Indian institution which enjoys a global reputation for excellence in independent scholarship and critical inquiry.
Emerald Engineering Collection	59 Journals of Engineering collection. Backfiles Access: 1994 Onwards
Foundry Trade Journal	Foundry Trade Journal
IEEE - IEEE/IET Electronic Library (IEL)	The IEEE Xplore digital library provides access if more than 467 journals, 72 magazines, more than 8000 conference proceedings and standards.
Inderscience	1. International Journal of Exergy 2. International Journal of Nanomanufacturing
Indian Geotechnical Society	Indian Geotechnical Journal
Informa Healthcare	1. Drug Development and Industrial Pharmacy 2. Pharmaceutical Biology 3. Expert Opinion on Drug Delivery
Institute of Materials, Minerals and Mining	Advances in Applied Ceramics: Structural, Functional and Bioceramics
Informs	The entire 16-journal INFORMS PubsOnLine Suite package (newly added)
IOP	It provides access to 76 full-text journals in the area of physics. Backfiles Access: 10 years rolling back
Jove	1. Jove Bio-Engineering 2. Jove Engineering
JSTOR	JSTOR Archive provides access to more than 2500 journals and primary content on an access fee basis.
Microwave Journals	Microwave Journals
NACE International	Corrosion
Nature	Nature
PNAS	Proceedings of the National Academy of Sciences of the United States of America publish more than 3200 papers annually.
Project MUSE (newly added)	Project MUSE promotes creating and disseminating essential humanities and social science resources through collaboration with libraries, publishers, and scholars worldwide—more than 733+ journal access. Backfiles Access: All access
Royal Society of Chemistry	It provides access to RSC Gold 2018 Excluding Archives with 51 full-text journals/magazines/ alerting services. Backfiles Access: 2008
SAGE	Imech collection 17 titles. Urban Studies & Planning Collection all titles
ScienceDirect	Nine Subject collections (Access to 1233 titles) Chemical Engineering Chemistry Computer Science Engineering Environmental Science Material Science Mathematics Pharmacology, Toxicology and Pharmaceutics Physics and Astronomy Energy (Newly added)
Science Online	Only Science Magazine

Publisher	Description
SIAM	SIAM publishes 17 peer-reviewed journals. Backfile Access: 1997 onwards
SPIE Digital Library	Journal of Applied Remote Sensing
Springer	Springer: 1700 titles
Springer Nature	Access of 17 selected titles.
Taylor & Francis	Access of 57 selected titles
The Indian Institute of Architects (IIA) (newly added)	The Indian Institute of Architects (IIA) is the National body of Architects in the country. IIA is represented on various national and international committees connected with architecture, art and the building industry and is also actively associated with International Union of Architects (UIA) Commonwealth Association of Architects (CAA) and South Asian Association for Regional Co-operation of Architects (SAARCH).
The Optical Society of America	17 flagship, partnered, and co-published journals; OSA's magazine, Optics & Photonics News; and the conference proceedings from all of OSA's Topical Meetings Backfiles Access: Vol 1. Issue 1
Wiley Online Library	Access of 144 selected titles.

Print Journals

Title	Subjects	Publisher
Aluminium International Today	Raw materials, Energy suppliers, Extrusion	Quartz Business Media Ltd
Architectural Digest	Interior, style, design, art & architecture	Conde Nast
Coal International	Mining, Coal, Power Installation	Tradelink publication Ltd
Foundry Trade Jl. (Formally British Foundry)	Cast metals industry	Foundry Trade Journal
Mineral And Metal Review	Steel, Mineral & Metal	Binani Metals Pvt. Ltd.
Modern Costing	Waste Stream	American Foundry Society
Nano Trends: A Journal Of Nano Technology & Its Application	Nanoscience and technology	STM Journal
Welding Journals	Metal fabrication and construction.	American Welding Society

Details of software available (Research Support Tools)

The library provides several Research Support Tools and software to support the research activities. We have also implemented a remote access (Remotex) facility to access all the e-resources from outside the campus network. Grammarly, Turnitin, Ouriginal, and EndNote are the most popular research tools among the faculty and research scholars. There are more than 5800 regular users of Grammarly. We have Instructor and student accounts on Turnitin for all faculty and Research Scholars. More than 250 users are currently using another Plagiarism detection software Ouriginal (URKUND). More than 3400 users are availing of remote access facilities to access e-resources outside the campus. The research support tools and software available are as follows:

- Grammarly (Writing Enhancement Tools)
- Turnitin (Anti-Plagiarism Software)
- Ouriginal **(**Anti-Plagiarism Software**)**
- Endnote (Reference Tool)
- RemotXs (Remote Access platform)
- **Infrastructure/Services/Facilities added**

  The complete library is fully Air-conditioned, Wi-Fi enabled, under CCTV surveillance and equipped with an alarming fire system. New reading hall with modern equipment with power backup and laptop charging connectivity on the reading tables, etc.

- **Collaboration learning space:**

  The library has created Collaborative Learning Space on the ground floor. The collaborative learning space has been designed to facilitate space for the user,s who wants to learn/discuss together/in a group to solve problems, work on a project, or have a meaningful discussion. In this space, we provided comfortable furniture and other facilities for the users.

- **Meeting/presentation space:**

  The library has created a meeting/presentation space on the first floor. This space can be used by the faculty/ Research Scholar/Students for presentations or academic meetings among groups of students. The room has more than 25 sitting capacity with comfortable furniture and other facilities like a whiteboard, projector, sound systems, computer, etc.

  Apart from this, the library has created a separate property counter for depositing students' belongings, a capacity of 500 bags at a time.

- **e-Library:**

  In this space, 50 PC is meant for users to access e-books, e-databases, e-journals, and other e-resources installed in the e-Library section. All systems are highly configured modern systems with high-speed LAN connections. Some of the systems are dedicated to software testing and project implementation. The library provided comfortable furniture and other facilities to the users in this space.

- **Computer-Aided Reference Service**

  To date, we are not able to develop a computer-aided reference service unit. However, the email **"libraryservies@iitbhu.ac.in"** and "**Ask the Librarian**" link on the library website is dedicated to all types of ready reference services. Also, the library introduces the "**Request Call Back"** service for quick response for all the users. The library, on average, responds to more than 30 queries daily to users related to plagiarism checks, article requests and other library and research-related issues.

Creation of Scholarly Profile of faculty and maintenance of Institutional Digital Repository

The library recently created Scholars Profile IRINS (Indian Research Information Network System) and added more than 360 faculty publications on this platform, which is being regularly added and updated. The library is also enriching the IDR (Institutional Digital repository), which have currently 425 PhD thesis, 1230 articles, 20 videos, etc., which is linked to the National Digital Library and globally accessible.

Any Other Information/Activities/participation in conferences/lectures delivered

Seminar /Conference/Workshop Organized by the Main Library

- Elsevier **Author Workshop** on **"Understanding research metrics & How to find relevant journals to publish in"** on September 25, 2021.
- Webinar: **"IEEE Authorship and Open Access Symposium: Best Practices to Get Published to Increase the Exposure and Impact of Your Research"** on Thursday, August 26 2021.
- Author Workshop on **`How to Publish in Books' and `How to Publish in Academic Journals and Succeed with your Publication'** on July 21 2021.

Session1: How to Publish Books with Taylor and Francis.
Session2: How to Publish in Academic Journals and Succeed with your Publication.

- ACS India Webinar: **"Making the Most Out of Your Ph.D. Journey: Research, Skills, and The Great Beyond"** Wednesday, July 14, 2021.
- Online workshop on **"Innovation generation through utilizing patent knowledge"** on Saturday, June 26 2021 (demonstration using the «Derwent Innovation Database»)
- SciFinder-n produced by Chemical Abstracts Service (CAS) Training - webinar series during Jun, 15-Jul 9, 2021

Research publication by Deputy Librarian

- Gupta B.M., Chakraborty, K., **Upadhyay, N**., Chkaraborty, M. (2022). Covid-19 and Kidney Disease: A Bibliometric Assessment of Global Literature. Library Herald. 60(1).
- Kureshi, Parvin S L; **Upadhyay, Navin**; and Chakraborty, Kanu, "Evaluating the Research Funding Opportunities for Library & Information Science Professionals: An Evaluative Study " (2021). Library Philosophy and Practice (e-journal). 5386. https://digitalcommons.unl.edu/libphilprac/5386
- Chakraborty, Kanu; **Upadhyay, Navin**; and Upadhyay, Shambhu Raj, "Explored publication pattern of the top twenty NIRF-2020 ranked Indian institutions: An evaluative study" (2021). Library Philosophy and Practice (e-journal). 5385. https://digitalcommons.unl.edu/libphilprac/5385

Seminar/Conference/Workshop attended by Deputy Librarian

- Attended five days Online National Workshop on "Web-Based Library Services" Jointly organized by the Central Library BHU and INFLIBNET, Center, Gandhinagar 4th to 8th October 2021.
- Attended 15-day online workshop on "Skill & Expertise in Digital Information Landscape" by TLC Ramanujan College & University of Delhi Library System from 10-25 April 2021.

Lecture Delivered in Conference/ Webinar /Workshop by Assistant Librarian

- Delivered lecture and presentation on "Use of plagiarism detection software like Turnitin & Ouriginal (Urkund)" in Faculty Development Programme (FDP) in Research Publication & Ethics: Issues and Challenges for Research Scholars and Faculty from 24-29 March, 2022. Jointly Organized by Dr. Harisingh Gour Vishwavidyalaya, Sagar (MP), Mahatma Gandhi Kashi Vidyapith, Varanasi, Uttar Pradesh, and SS Khanna Girls' Degree College, Prayagraj.
- Delivered lecture and presentation on "Scope, Opportunities and Future in Library & Information Science" in Workshop on Multidisciplinary Approaches of NEP 2022 in HEI, January 20 2022 – January 28 2022, Thakur Someshwar Singh Govt. College Naigarhi (MP).
- Presented a paper on "Knowledge Graph Management Platforms: A Feature Based Review" Third International Conference on Science & Technology Metrics (STMet 2021), held online on 6th - 8th December 2021 [http://www.socio.org.uk/stm]

- Delivered lecture and presentation on "Citation Database: Needs & Importance for Research Scholar", September 17, 2021, to Research Publication & Ethics for Research Scholars from 15-22 Sep, 2021. Organized by IGNOU Main campus, New Delhi.
- Presented a paper on "GNU GPL Patients Information Management Systems to Manage NGOs and Charitable Trust Hospitals: A Study" to Virtual International Conference (VICLIS2021) on "Challenges of Library and Information Science Profession in New Normal Context." August 23, 2021 organized by The Sri Lanka Technological Campus in collaboration with the Department of Library and Information Science, University of Kelaniya, National Science Library and Resource Centre (NSLRC) of the National Science Foundation of Sri Lanka, and the University of Kerala, India.
- Delivered lecture and presentation on Citation Database: Web of Science & Scopus, July 30, 2021, to One Week Online Faculty Development Programme(FDP) on Research Publication & Ethics: Issues and Challenges for Research Scholars and Faculty from 26-31 July, 2021. Organized by MGKV, Varanasi & TLCSS, DHSGU, Sagar, MP.

Research publication by Assistant Librarian

- Gupta B.M., Chakraborty, K., Upadhyay, N., Chkaraborty, M. (2022). Covid-19 and Kidney Disease: A Bibliometric Assessment of Global Literature. Library Herald. 60(1).
- Sahoo, S., Chakraborty, K. & Madalli D. P. (2021). COVID-19 Research Publications in India: A Bibliometric Study. IASLIC Bulletin. 66 (2), P 67-77. http://www.iaslic1955.org.in/fckeditor/userfiles/file/IASLIC%20Bulletin%20June%202021%20(ABSTRACT)_compressed.pdf
- Sinha, P. K., Gajbe, S. B., Debnath, S., Sahoo, S., Chakraborty, K., & Mahato, S. S. (2021). A review of data mining ontologies. Data Technologies and Applications. https://doi.org/10.1108/DTA-04-2021-0106
- Chakraborty, M. & Chakraborty, K. (2021) GNU GPL Patients Information Management Systems to Manage NGOs and Charitable Trust Hospitals: A Study, VICLIS-2021.
- Kureshi, Parvin S L; Upadhyay, Navin; and Chakraborty, Kanu, "Evaluating the Research Funding Opportunities for Library & Information Science Professionals: An Evaluative Study " (2021). Library Philosophy and Practice (e-journal). 5386. https://digitalcommons.unl.edu/libphilprac/5386
- Chakraborty, Kanu; Upadhyay, Navin; and Upadhyay, Shambhu Raj, "Explored publication pattern of the top twenty NIRF-2020 ranked Indian institutions: An evaluative study" (2021). Library Philosophy and Practice (e-journal). 5385. https://digitalcommons.unl.edu/libphilprac/5385
- Shah, T.A., Gul, S., Bashir, S. et al. Correction to: Influence of accessibility (open and toll-based) of scholarly publications on retractions. Scientometrics 126, 4607 (2021). https://doi.org/10.1007/s11192-021-04041-7

Seminar/Conference/Workshop attended by Assistant Librarian

- DELNET webinar on "Remote Access to E-Resources using Shibboleth, an Open Source Software", by Dr Francis Jayakanth, IISc, on January 29, 2022.
- Virtual Conference on Library and Information Science (VICLIS2021) organized by the Sri Lanka Technological Campus in Collaboration with the University of Kelaniya, Sri Lanka, the National Science Library & Resource Centre (NSLRC) of the National Science Foundation of Sri Lanka and the Department of Library and Information Science, University of Kerala, on or before July 25 2021.
- Third International Conference on Science & Technology Metrics (STMet 2021), held online on 6th - 8th December 2021 **[http://www.socio.org.uk/stm]**
- Webinar on "Role of Digital Libraries and Knowledge Collaboration to Advance Sustainable Mobility Research" on October 28, 2021 conducted by The Energy and Resources Institute (TERI) and GIZ India.
- Webinar on "How to publish in academic journals and succeed with your publication" organized by Taylor & Francis Group on July 21, 2022.

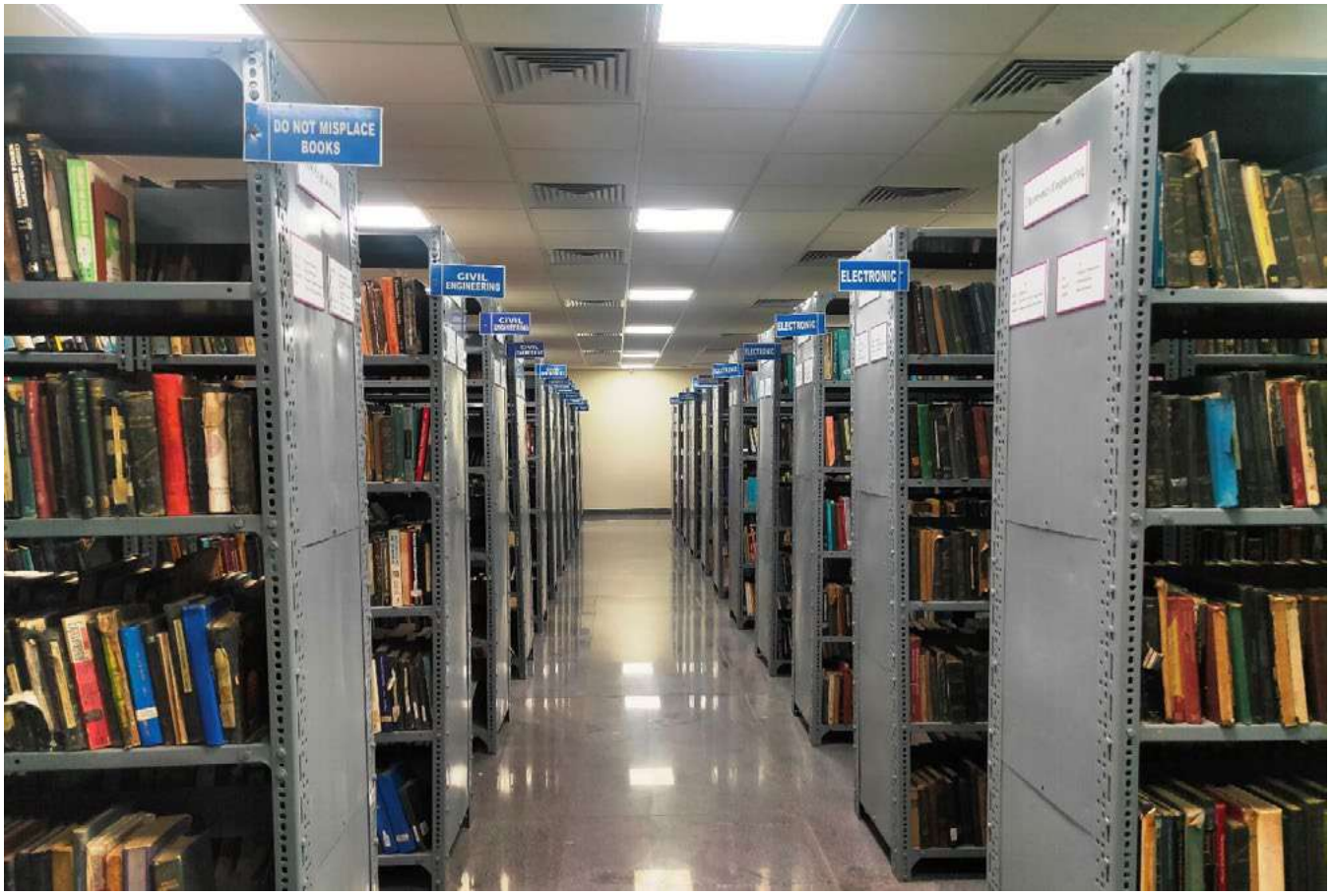
- Webinar on "How to publish Scholarly books with Taylor and Francis" organized by Taylor & Francis Group on July 21, 2022.
- online talk on "Archival Science Education and Training in India: Issues and challenges" organized by Kala Nidhi Division of Indira Gandhi National Centre for the Arts (IGNCA) on June 8, 2021

Budget allocated and expenditure details for the F.Y. 2021-22

Plan OH-35 (Purchase of books, journals & e-subscriptions) - Allocation Rs. **8,35,36,308/-**Expenditure Rs. **8,35,36,249/-**, Plan OH-35 (Repair & Maintenance of Equipment)- Allocation Rs. **7,22,000/-** Expenditure Rs. **6,88,266/-** and Plan OH-31 (Library Other Charges/Miscellaneous)- Allocation Rs. **1,25,900/-** Expenditure Rs. **1,06,425/-**

Key Instruments:

Library Pictures (Reading Hall, e-Library and Periodical Section)


DO NOT MISPLACE BOOKS
CIVIL ENGINEERING
ELECTRONIC

26. Students Life

Games and Sports Council:

Although the year 2021 was full of problems because of the pandemic, where our college was fully held online. But this didn't stop the Games and Sports Council from being active. In the beginning of the year 2021, the Games and Sports Council organized a chess tournament followed by a talk by Ms. Harshita Guddanti, Women International Master. The Institute was also in the Top 20s in the All-India Chess League. The Council also took part in the Fit India Cyclothon, a part of the Fit India Movement.

In February, the Games and Sports Council conducted Basic Fitness Challenges for freshers and the Games and Sports Council conducted the 'Girls' Weekend' from 20th to 21st March, 2021.

In June, the Games and Sports Council conducted a 'Diet and Nutrition Webinar' in collaboration with 'Biomarked' for awareness about lifestyle diseases. Daily yoga sessions are being conducted. On national sports day on 29th August 2021 Gymkhana organized a 6 km Cycle Run where almost 100 plus students took part.

The Games and Sports Council conducted PLOG RUN under Fit India Freedom Run 2.0 as part of the 'Azadi ka Amrit Mahotsav' initiative.

The Games and Sports Council also saw the establishment of the Cycling Club, IIT (BHU). Soon after the inception of the Cycling Club, the members were motivated to take part in the Road to Pan-IIT Event - 4 week-long event, which spanned from 29th November to 26th December. Our members topped the categories of Men's Amateur (All Top 3 and few more in top 10) and Men's Elite (2nd position). On 2nd January 2022, the club conducted an informal Workshop session exclusively for the participants of the Pan-IIT Cycling Event, where the people who topped the Road to Pan-IIT Event and a few experienced riders talked about their cycling experience, some tips and practices for efficient cycling. From 3rd January to 7thJanuary, the Pan-IIT Cycling Event was conducted where IIT(BHU) played a crucial role, with many freshers taking part in it. The team grabbed the 3rd position in Distance (2801.5Km) and 4th in Elevation Gain (11,777m). Our team came 4th in the Overall category.

As we were closing in towards the reopening of our college after almost two years, so to regain our sporting spirit with full energy and enthusiasm it was preferred and encouraged that the students start from their homes by doing exercises and running so that our body becomes fit for playing any sports they wanted when they got back into the college.

Therefore, a 4 week long fitness month (14th February to 12th March 2022) was organized in which each week was assigned with 7 different exercises or drills and each of these activities had some points associated with them so that students could earn points and rise to the top of a leaderboard maintained by the council.

Cultural Council:

The Cultural Council, one of the established bodies in Gymkhana, is the beating heart and melodious soul of IIT (BHU) Varanasi. During the 2020-21 session, the 7 clubs of the Cultural Council, Dance Club, Fine Arts Cub, Indian Music Club, Quiz Club, Theatre Club, The Literary Club and Western Music Club successfully organized a number of workshops, showcases, events and competitions in the online mode to promote and enhance the cultural activities among the students.

The Cultural Council is indebted to Hon. Dean of Student Affairs Dr. LP Singh, Hon. Associate Dean of Student Affairs Dr. Rajesh Kumar, Hon. Cultural Councillor Dr. Amitesh Kumar, Acting Vice President Mr. Vatsal Dwivedi, Acting Astt. Vice President Mr. Shashwat Khare, General Secretary Mr. Ishaan Dhyani, Joint General Secretaries Sanskriti Choudhary and Abhirup Goswami and the respective club position holders for their consistent support and direction in the organising of the activities.

KASHI UTSAV' 21:

The Cultural Council together with AIBA, the Association of IIT BHU Alumni, initiated the Kashi Utsav Cultural Event on 14th November, which saw immense participation from both the students as well as the prestigious alumni of

IIT BHU. From dance, music to art and crafts, Kashi Utsav 21 - Diwali Special was a celebration of a wide range of cultural arts on the festival of lights. With participation from both current students and alumni across the world, it served as a unique occasion for our students to interact with the alumni and vice versa.

The various clubs of the cultural council also organized year long activities which are listed below.

IIT BHU MUN'22:

A total of 253 delegates from across the globe experienced international diplomacy through academic debating in this year's conference. The Opening Ceremony was held on the 4th of March 2022. It was graced by Shri L P Singh, Hon. Dean of Students' Affairs, keynote address by Shri Akhilesh Mishra, the Hon. Ambassador of India to Ireland, was held on 2 March, keynote address by Shri M K Mohapatra, the Hon. Ambassador of India to Guatemala, was held on 2 March, keynote address by Shri Abhay Kumar, the Hon. Ambassador of India to Madagascar and Comoros, was held on 3 March and an extensive discussion, diplomacy, and debate across 3 days within the following committees:

- AIPPM- Discussion on the freedom of speech and expression with special emphasis on laws like sedition, UAPA and NSA
- UNCSW- Addressing gender-based violence in emergencies and post-disaster recovery.
- UNHRC- Deliberation on Children's Rights Violations, with a Special Emphasis on Child Slavery in South East Asia
- SPECPOL- A review of the functional capabilities of the Peacekeeping Forces to augment its operationality
- Crisis Committee- September 11, 2001
- ECOSOC- Post-conflict economic remodelling and infrastructure development in areas of conflict, with special reference to the Occupied Palestinian Territory (OPT).
- DISEC- Preventing Non-State Actors from Acquiring Weapons of Mass Destruction

AAGMAN: INTRA FRESHERS EVENT (18-20 FEBRUARY, 2022):

The annual intra-freshers cultural competition Aagman'21 was organised with immense success from [] for the first-year students through the Google Meet and Microsoft Teams platforms. Conducted in the online mode, this 3-day long extravaganza, by the 7 clubs of the cultural council, witnessed **an all-time high, 700+ participation** from first-year students in 31 different categories of the cultural events.

The categories of the events were:

- Indian Music (Group song, Solo singing, Solo Instrumental, Duet)
- Western Music (Battle of Bands, Solo/Duet Instrumental, Solo Vocals)
- Fine Arts Series
- Aagman Quiz
- Literary Arts (English Poetry Slam, English Debate, Hindi Poetry Slam, Hindi Debate, Just a minute, Shipwreck, Story Telling, English Prose, English Poetry, Hindi Poetry, Hindi Creative Writing, English Word Games, Hindi Word Games, Ashubhashan, Stand-up, Meme-It, Kissagoi)
- Theatre (Monoact, Inter Branch Skit, Mimicry, Stand-up)
- Dance (Group Dance, Solo Dance)

ONLINE EVENTS:

While the institute was running in online mode the clubs conducted various online events without losing enthusiasm and used the opportunity to its full potential. With Quiz Club conducting 10+ quizzes including online quiz fest "Almanack", Fine Art Club conducting Kalakriti'21 and Inktober, Literary Club's Hindi Mahotsav'21, Meme Fest'21,

Le Début'22 and Tarksangat'22, Dance Club's Move 4.0, Xhibit'22, the Theatre Club conducting Mimic'It'21, Indian Music Club's Symphony'21, 5th edition of Tarang and WMC's intra club competitions, all the clubs kept their cultures alive in the desparate times of the pandemic era and also managed to bring many sponsors for the respective events.

WORKSHOPS:

The Fine Arts Club, the Dance Club and the Theatre Club conducted interactive workshops to increase the scope of knowledge and learning throughout the session. These included the likes of highly renowned artists, Ms Chiara collizzolli and Dr. Suresh Chandra Jangid, Shubhrajyoti Barat (popular actor and writer), Ms Neeru Gandhi (a renowned artist & wellness entrepreneur), Nihar Dongre and Dheeraj Soni (dancers and choreographers).

KASHIYATRA'22:

Conducting in a hybrid mode this session's Kashiyatra saw many online competitions and offline showcase events. A number of events were conducted under headings like Enquizta by Quiz Club, Toolika by Fine Arts Club, Abhinay by Theatre Club, Bandish by Indian Music Club, Crossroadz by Western Music Club, Natraj by Dance Club and Samwaad by literary club. Many renowned personalities like Daulat Vaid, Karunesh Talwar, Srijan Mahajan, Arvind Gaur, Shashank Dixit, Reuben Lama, Lokesh Kaza, Sabeena Karnik, Ahsaas Channa and many more bestowed us with their online presence. The fest saw around 300+ participants.

EBSB:

The Cultural Council also helped in the conduction of Central Government Scheme of 'EBSB' or 'Ek Bharat Shreshth Bharat' in collaboration with IIT Delhi. Many competitions were held under the event such as poetry and essay competitions, Debate and competition in Acrylics genre and charcoal. This helped to further strengthen the cultural integrity between the students and the respective institutes.

Science & Technology Council:

Inter College Achievements:

- **Inter IIT Tech Meet 10.0:** Hosted by IIT Kharagpur. The IIT BHU contingent finished **6th overall in the General Championship amongst 22 participating IITs, with a total of 5 medals**. **Gold Medal** in Blue Yonder's **Sustainable Supply Chain**, **Silver Medals** in Bosch's Model Extraction Attack for Video Classification, Mercari's **Large Scale System Design Hackathon**, Gmetri's Growth Strategy for **Metaverse**, **Bronze Medal** in Silicon Labs' Social **Entrepreneurship** Challenge.
- **Google Summer of Code** - 23 students have been selected, matching our highest selection numbers from last year. Three other students were selected as mentors, while another was selected as Org Admin. One girl student achieved GSoC selection in her first year.
- Three students got selected for Summer of Bitcoin
- One student (Sanyu Daver) got selected in Outreachy
- One student (Divyansh Srivastava) was selected as a Processing Fellow
- Two students bagged internships based on their significant open source contributions
- Two students have been selected for The Linux Foundation - LFX Mentorship Program, one of the most prestigious open source programs
- Two teams, 'IIT (BHU) Cybersec' and 'IITVaranasiSec', were selected for the finals of the Cyber Security Awareness Week (CSAW). They secured AIR 4 and 8, respectively competing against the top 15 teams worldwide.
- Team Protobot and Team Cybernauts of the Robotics Club participated in the event 'Vischesta' of IIT (ISM) Dhanbad and secured the 2nd and 3rd ranks, respectively.
- Moulik Ketkar of the Astronomy Club won first place in BAHfest, Anveshan, IISER Thiruvananthapuram.
- Pratyush Singh, Neeraj Kamal and Praveen Kumar bagged 2nd Position at NSSC '21 hosted by IIT KGP.

- Team Indiza secured 2nd position in the AT-VTOLA event at Techfest IIT Bombay.
- A team of 14 members qualified the first stage of the Flipkart Grid Challenge 3.0.
- 6 students have received DAAD WISE Scholarships and are visiting German Universities to conduct research in the summer.
- Team RNG topped Kanpur-Mathura Regionals of ACM-ICPC, while Freshers' team semicolonsus achieved 1st rank in college and 14th rank overall in Gwalior-Pune regionals. 23 teams from our college qualified for Amritapuri Regionals.

Events:

- Hardwired event by Robotics Club
- The SAE Club organized a 3D CAD Modeling event
- The Aeromodelling Club presented a glider-making competition to provide exposure of the technical working of gliders.
- The SAE conducted TRIATHLON, a series of events and workshops on F1 car modeling and simulation in collaboration with Tech Analogy.
- The Club of Programmers successfully conducted COPS Week, a week-long flagship event consisting of four sub-events, DebugIT, NP Compete, Wannahack, and Ctrl-Shift Intelligence.
- Aeronav, a drone navigation competition by The Aeromodelling Club.
- Bravo Airfoil, an airfoil design and simulation event by The Aeromodelling Club.
- Multi Agent Aerial Construction Challenge by The Aeromodelling Club.
- SARC Tank, an event in collaboration with SAIC IIT BHU and E Cell IIT BHU.
- **BASH 4.0** - Business Club's Flagship event consisting of 3 events - Prodnosis (the Product Management Event), Consultia (the Consulting event), Bearish Bull (the Portfolio Management event), in collaboration with Industry giants like UXReactor and ICICI.
- La Robo Liga, an Introductory Robotics Event by Robotics Club
- AutoNav Challenge, the Autonomous Navigation event based on ROS and AGVs by RoboReG
- Case Study event on Automotive Technology by SAE
- Competitive Programming Event "Squid Cup" by Club of Programmers
- UI/UX Design Challenge by Club of Programmers

Guest Speaker Sessions:

- Talk on "Introduction to Supply Chain Management" by Mr, Manansh Thakur.
- AMA Session on "Product Management and Strategy" by Mrs. Paridhi Mishra (CER '16).
- Robotics Club hosted a RoboReG Talk with Mr. Harsh Agarwal (EEE '18), a research engineer at rephrase.ai.
- Ms. Chanchal Bhoorani (AVP, West Bridge Capital), Mr. Yash Khandelwal (MS in CS, UCSD), Ms. Ayushi Bansal (SDE, Amazon), Mr. Nikhil Khatavkar (PhD, IISc), Mr. Anurag Nidhi (IIT BHU '20), Mr. Anmol Agrawal (IIT BHU '20), Mr. Mohan Aditya (IIT BHU '21), Mr. Shivam Anand (SWE, Google) under Pioneers of SNTC series
- Prof. Deshdeep Sahdev (Advisor, Device Development Program, Dept of S&T, GoI) on "Some Interesting Experiments with STMs and CVDs)
- Mr. Soutik Nandy and Mr. Aniket Prasad of Spaceonova on "Python for Space Applications" and "Introduction

to AI in Space Robotics"

- Mr. Soumyadeep Das (PhD, University of Hertfordshire) on "Radio Interferometry"
- Mr. Vivek Gupta (PhD, Swinburne University of Technology) on "Introduction to Pulsar Astronomy and Pulsar timing"
- Dr. Avinash Deshpande (Retd, RRI Bangalore) on "Fascinating Life - Stories of Cosmic Lighthouses"
- Mr. Anshul Raje & Mr. Tanmay Sharma, Space Nova experts on "AI with Space Applications"
- Dr. Yogesh C. Joshi, (Scientist, ARIOS) on "Quest for new habitable worlds"
- Flipkart APM Deck workshop by Mr. Vishant Batta (IIT BHU '21)
- Mr. Arindam Mukherjee (CEO, NextLeap) under the Mavericks Series of The Business Club
- Webinar by Mr. Amitava Saha (CEO Xpressbees, COO FirstCry.com)
- Mr. Sanket Dantara (Director, Digital and Emerging Partnerships South Asia, Mastercard) on "Digital Payment Trends and Future)
- Mr. Punit Chawla (Founder, DesignWings) on "Careers in Design"
- Ms. Toshi Prakash (Head of Products, xto 10x) on "0-1 Journeys of a Product"
- Mr. Ravinder Singh Chawla (Founder. RSC Skillbuilding and Consulting Solutions LLP) on "First Step to Wealth Creation"
- Mr. Sushim Srivastava (Senior Director Engineering, Qualcomm) on Compiler Design

Initiatives:

- Reinstating the synergy cell, which oversees the Technical, PR, Branding, Content and Design teams of the council.
- "Pioneers of SNTC" - A series of talks to connect the distinguished alums of SNTC to the current students.
- Second Edition of the Case Book
- The Club of Programmers started GSoC Mentorship for session 2022 with 500+ mentees guided by 20+ previous GSoCers.
- SAE began a course on Ansys to familiarize students with intermediate Engineering simulations.
- Summer Camps by Astronomy Club, Club of Programmers, Robotics Club, SAE.
- Multiverse of Languages - Series of workshops by COPS on Dart, Flutter, Javascript, Go, C++, Kotlin
- The Jay Chaudhry Lecture Series on Software Best Practices in association with IBGAA and IIT BHU Foundation
- Workshop on Stellar Evolution, Cosmic Inflation, Telescope handling by The Astronomy Club
- SAE organized quizzes on various topics
- Astropedia - Series of workshops by Astronomy Club
- Autofy - Automobile information series by SAE
- The Astronomy Club organized workshops on astrophotography and Space Flight Simulator.
- Workshop on "Basics of Automobiles" for freshers.
- Workshop on detailed analysis of airfoil using XFLR5 software.

- Star party observation session & space documentary screening as part of Yuri's Night.
- Messier Marathon Workshop session
- Workshops on Introduction to Quant finance, Product Management, Consulting, Finance.
- Workshop on How to apply for product roles
- Workshops on DSA Road Map, CTF, Game Development, Google Summer of Code, APIs by COPS
- Decipher Quiz series and Innosights information series by Club of Sustainability and Innovation
- "Robots are Awesome" weekly news series by Robotics Club
- Workshop on Pybullet, Control Algorithms, Computer Vision, ROS, Gazebo by The Robotics Club
- Workshop on Intro to CAD Design, Basics of Assembly and Motion Study by SAE Collegiate Club

Social Service Council:

Throughout 2021 we conducted online school meets for an MCD school and generated awareness on personal hygiene, COVID19, First Aid Kit, and many others. We also ran a waste to best activity where they made various things like puppets, pencil stands etc.

Social Media Awareness - Along with our other endeavours, we began to raise awareness through our social media handles by sharing posts about our assistance and diet.

We continued our work of calling and creating awareness of education among children.

- Volunteers called them weekly, interacted with them and their parents and took updates.
- Volunteers told stories, recited poems, and taught shapes through objects.
- We conducted weekly meetings with volunteers to understand and solve the volunteers' issues during weekly calls.

The Health and Hygiene club made regular visits to schools to emphasize the importance of hygiene, good health, a balanced diet, sanitary practices, and Yoga. They also discussed remedies to common household injuries.

Sahyog aimed to post works of different NGOs who work for education and desire for children welfare. We started a series of "Eddunovation-Restyling Education".

- Through this, we highlighted the efforts of Akanksha Foundation, a non-profit organization working on the mission to make a network of innovative and creative schools that primarily focus on utilizing their full potential.
- Similarly, we acknowledged NGOs Bhumi and Educated Girls, which provide holistic education, create sustainable livelihoods, and work towards girls' education, respectively.
- We made regular visits to Guria Foundation, where volunteers teach science experiments and typing and painting on the computer to the children.
- We at Sahyog started making offline visits to Tikri schools. And are in the process of collaborating with an NGO to provide BYJU's subscription for school students.

Brainstorming Session -

- In this session, we addressed and pitched new social issues.
- We analyzed the solutions presented by the students and selected the projects we could proceed with further in the club.
- Older projects were also discussed and brainstormed upon with the members presenting better and better ideas, following which the scope of the projects was diversified to larger scales.

- We received a lot of ideas to work with.

Regular Basti Activities -

- Calling activities: Each volunteer was assigned 3 to 4 students, and they called Basti children from Lehartara Basti and Kakarmatta Basti regularly. Volunteers shared art and craft videos, explained subjective lessons, interesting crossword puzzles, and science projects as per the students' interests.
- Weekly Basti Meets: Alternate week video calls are conducted in both the Bastis. We told them the importance of several occasions like Indian Navy Day, Vijay Diwas, Teacher's Day, and many more. Students are taught about different topics, along with some quizzes & interactive questions.
- Kashi Utkarsh started with offline Sunday visits by February. Regular studies, physical exercise, quizzes and science experiments were conducted to enhance the learning of the children.
- The volunteers prepared the Basti children for the Navodya exam on 30th April.
- A survey was conducted to count the number of children not going to schools in Bastis, followed by their admission. Several Basti children in Patiya Basti were admitted to schools.

Social Projects -

- Easy-Connect: An application that connects food-delivery NGOs with organizations and excess food suppliers to provide food to the needy. It also had a disaster management alert system to provide food in those areas with emergency needs. The project qualified for the semi-finals of H-Social Creator.
- Eye Gaze System: The system helps neurologically disabled students read and write by controlling their eyes.
- Agri-Tech: Designing integrated QR codes for farming products to track their supply chain and other helpful information such as expiry dates, product usability. It also consists of a recommendation system to recommend useful machinery, pesticides, and herbicides to the farmers.
- A team of six students cleared the college hackathon round of SIH 2022 and are selected for the 2nd round
- Social Projects' Club, projects, Gardeino, Terrific lights, Krishi, AgTech, and Eye gaze, were proposed to the DIC Committee and were subsequently shortlisted and were ready to be started/resumed under DIC.
- Team Terrific Lights represented IIT BHU in the Inter IIT Tech Meet 10.0.

Events

Healthy Food Crush -

- We made healthy and delicious dishes to change our daily bland diets and make them exciting and full of nutrition.
- The photos, videos and recipes shared by our volunteers were posted to the Instagram handle of the Health and Hygiene club through which many other students participated and also tried these recipes.
- The motive of this activity is to make some healthy dishes. For many people, eating habits have altered immensely in this pandemic. Many people have slipped to an unhealthy diet, so this was an attempt towards retrieving our healthy food habits.

Hay the Stray -

- Seeing the plight of stray animals around us, some starving, some infected because of unhygienic conditions. Some homeless animals were even abused; we launched Hay the stray, seeing all this.
- The goal of this social awareness event was to encourage the participants and the people in the neighbourhood to help stray animals in whatever capacity they could. They were encouraged to feed them, provide shelter, etc.

- Hay the Stray was a three-week-long event since we wanted the participants to develop the habit of helping stray animals.
- We asked the participants to take pictures or videos of them helping the stray animals, which were shared on our social media to inspire others and increase our event's reach. We need to show people that a true, selfless act always sparks another.

Yoga Awareness -

- The goal of this programme was to teach each child the habit of performing yoga every day. Every core member of HHC chose a Yogasan like Suryanamaskar, Sukhasan etc. and made a video on it with a detailed explanation of each step, which was then shared with various kids at schools and bastis.
- When the students saw the videos, they were very keen on making their own yoga videos which they later shared with us. Now everyone performs yoga daily.

Daan Utsav -The best way to celebrate the birth anniversary of the "Father of Nation" is to celebrate the joy of giving. People come together to donate their time, skills, resources, knowledge and education to celebrate India's most prominent festival **f**rom October 2 to October 8. We came forward and celebrated this week with students too as 'Daan Utsav'. We organized some activities via calls such as goal telling, gratitude card making, a Plantation drive, wishtree and story thinking.

Abhipraya 2022:

- Abhipraya is the annual freshers' competition to introduce the club to the freshers. It consists of a series of events to showcase and glimpse work at the Social Projects' Club.
- This year a case study event was held with 4 case studies. The topics of the case studies were: Disposable Masks, Med-Ease, Air for Future, Secure India.
- It focused on the problem-solving ability of the group. Each team was asked to provide a valuable solution, plan of action, or a business model in front of judges.
- We received an overwhelming participation of 250+ (90+ teams) freshers in the events, with 83 abstract submissions.

Vigyan Sarvatra Pujyate:

The week-long Vigyan Sarvatra Pujyate programme at Varanasi started with the local inaugural ceremony with Prof. D.S. Chauhan (former Vice-Chancellor, APJAKTU Lucknow) as the chief guest. Also, a press conference was convened media persons were briefed about the total 7 days' events of the Vigyan Sarvtra Pujyate Programme. The inaugural ceremony concluded with the live streaming of the inauguration of the mega fest in New Delhi.

On the second day of the programme, there were lectures by Prof. L.P. Singh (IIT (BHU)) on History of Computing and lecture by Dr. V. Ramanathan (IIT BHU) on Origin of Science in India.

On the third day, Dr. Sumit Ghosh (CIMAP Lucknow) gave lecture on Nature's Biochemical Sciences and Prof. V.V. Menon (Retd. Prof, IIT (BHU)) shared his views on science and technology in India during 75 years after independence.

On the fourth day of the programme, various literary events were held like poetry writing and citation, rangoli making, poster making and debate competition based on science and technology. In poetry, 14 students from various schools and colleges participated and three winners were selected with 1st, 2nd and 3rd positions. In poster making, 47 students from various schools and colleges participated and three winners were chosen as 1st, 2nd and 3rd. In rangoli making, six teams each comprising five students from various schools and colleges participated and three winners were chosen as 1st, 2nd and 3rd. In debate competition, eight teams from various schools and colleges participated and three winners were chosen as 1st, 2nd and 3rd. In essay writing competition, 30 students from various schools and colleges participated and three winners were chosen as 1st, 2nd and 3rd and all the winners of all competitions were given prizes and certificates on the valedictory function.

On the fifth day, there was lecture by Prof. A.D. Singh (BHU) on Climate Change Science and lecture by Dr. N.S. Tripathi (Institute of Medical Sciences, BHU) on the Concept of Personality and Personalized Medicine in Ayurveda.

On the sixth day, Dr. Rajashree Bothale (Scientist at NRSC, ISRO, Hyderabad) gave lecture and she shared the programs of ISRO, India with the audience. Dr. Vidisha Tripathi (NCCS, Pune) also gave lecture on the role of Varanasi in shaping Modern India. There was another lecture by Dr. Sukhada (IIT (BHU)) on Linguistic Sciences and Bhasha Vigyan.

Valedictory: Live Screening of the valedictory event from New Delhi including a recorded message from the director of ISRO and Department of Atomic Energy about the challenges and opportunities in science, digital health and the Ayushman Bharat Digital Mission was streamed. The local closing ceremony was held wherein Prof. P.K. Jain (Director, IIT(BHU)) and Prof. K.P. Singh (former Director, IT BHU) were present and they shared their views on the week-long mega event Vigyan Sarvatra Pujyate.

Programmes - Exhibition on various topics related to science and technology including Robotics, Astronomy and Business, book stall displaying the books related to science and technology including Computer Science and Biology, display of 75 posters of scientists and 75 posters of scientific achievements, display of posters related to innovations and inventions, display of posters of traditional items of Varanasi, display of posters related to cleaning of the Ganga water and Project Varanasi. Also, there were various competitions like, poster making, rangoli making, quiz competition etc.

Hands on Experiments - Astronomical, Automotive and Robotic equipment were displayed and participants were encouraged to use them.

Footfall – Around 12,000 persons visited the week-long festival and more than 2,000 persons visited the mega science festival on daily basis. It included students from various schools like Jawahar Adarsh Inter College, 'O' Grove Public School, Guru Nanak English School, Central Hindu Boys School, Central Hindu Girls School, KV BHU, Children's Academy, Basant Kanya Inter College and higher educational institutes like Harishchandra Post Graduate College, IIT (BHU), Institute of Science, BHU, Faculty of Arurveda, BHU, Faculty of Arts, BHU and Dhirendra Mahila PG College, Varanasi. General public from Varanasi and nearby areas also visited various events and participated in various lectures.

27. Training and Placement Cell

Overview

The Training and Placement Cell of the Indian Institute of Technology (BHU) was developed as a separate unit in the Institute as early as 1977-78. Since its inception, the Cell has been coordinating the placement of final year students in various industries and research organizations and making arrangements of summer internship for B.Tech./ IDD/M.Tech. students every year as part of their academic curriculum. More than 21,000 students of B.Tech./ IDD and M.Tech./M.Pharm./Ph.D. have been placed through this Cell with lucrative compensation packages in leading industries in the country and abroad.

Large numbers of prestigious companies, both from the public and private sector, have visited our institute and their number has greatly increased from mere 16 in 1977 to 303 in academic session 2021-22. During this session, the recruitment process started on 1st December, 2021. Companies such as Uber (International), UiPath, Eightfold.ai, Microsoft, Observe.ai, Rakuten, Harness, ADLOID SDE, Dream 11, Safe Security, Zomato, Walmart DS, Amazon, Uber (Domestic), Meesho SDE, Paypal, Navi, Plutus Research (Quantitative Analyst), Quicksell Backend, Quicksell Frontend, Cisco, Udaan, Urban Company, Confluent, JP Morgan Chase (QR), Slice, Rippling, Oracle (APPS), Oracle (NetSuite), Oracle (ST), MindTickle, Gameskraft, Unacademy, Swiggy, Google, AQR Capital, InMobi, Limechat, Qualcomm HW, Razorpay, SAP Labs etc.

Apart from this, around 101 students from other institutes were given internships through the Cell.

List of staff members associated with Training and Placement Cell.

Sl. No.	Name	Designation
1	Dr. Anil Kumar Agrawal	Professor Incharge
2	Sri. Ghanshyam Gupta	Junior Assistant
3	Sri. Mohit Srivastava	Office Assistant (Highly-Skilled)
4	Sri. Shravan Kumar Dubey	Office Assistant (Highly-Skilled)
5	Sri. Surendra Kumar	Attendant (Semi-Skilled)
6	Sri. Jaswant Lal Roshan	Attendant (Semi-Skilled)

Number of students who enrolled for the campus placement during 2021-22: **1332**

Number of companies that visited for campus recruitment:

2020-21	2021-22
255	303

List of top 40 most reputed companies that visited and recruited students. (**Annexure – I** attached).

6. Number of offers made:

Domestic Offers : 1322

International Offers : 35

Average CTC Package (in LPA):

2020-21	2021-22	Increment over the previous Year
17.93	21.54	20.13%

Highest (or top few) CTC package offered (Rs.)

1. 2,15,00,000
2. 78,50,000
3. 61,00,000
4. 52,50,000
5. 46,08,000

Number of paid internships earned by the students :

2020-21	2021-22	Increment over the previous Year
428 (Paid Internship) 126 (Unpaid Internship) Total 554	534 (Paid Internship)	24.77%

Any other achievements or highlights (in a paragraph).

In comparison to the last year, this year (academic session 2021-22) has witnessed percentage increase in:

i) Number of visiting companies by 18.82%

ii) Number of paid internship by 24.77%, and

iii) Average CTC by 20.13%

Annexure-I

Sl. No.	Name of Companies	Offers
1	Uber (International)	1
2	UiPath	2
3	Eightfold.ai	1
4	Microsoft	20
5	Observe.ai	2
6	Rakuten	21
7	Harness	1
8	ADLOID SDE	3
9	Dream 11	8
10	Safe Security	6
11	Zomato	9
12	Walmart DS	3
13	Amazon	11
14	Uber (Domestic)	4
15	Meesho SDE	17
16	Paypal	3
17	Navi	1
18	Plutus Research (Quantitative Analyst)	1
19	Quicksell Backend	1
20	Quicksell Frontend	1
21	Cisco	8

22	Udaan	2
23	Urban Company	4
24	Confluent	4
25	JP Morgan Chase (QR)	9
26	Slice	7
27	Rippling	6
28	Oracle (APPS)	6
29	Oracle (NetSuite)	3
30	Oracle (ST)	9
31	MindTickle	4
32	Gameskraft	1
33	Unacademy	4
34	Swiggy	3
35	Google	7
36	AQR Capital	2
37	InMobi	7
38	Limechat	1
39	Qualcomm HW	4
40	Razorpay	3
41	SAP Labs	4

28. Resource & Alumni

Dean (Resource and Alumni Affairs):

Prof. Rajeev Srivastava- (w.e.f 01/12/2020 - till date)

1. **Introduction:** The Resource & Alumni office of the Institute works for the functions as delineated by the Director of the Institute (Vide letter No. IIT (BHU)/2014-15/504/L Dated 9th September 2014 and Subsequent modification. The following works/functions are carried out as

   - Alumni Processes and Functions [through dedicated office and Student Alumni Interaction Cell (SAIC)]
   - Gandhi Technology Alumni Centre-Guest Houses. (Through Coordinator, GTAC).
   - Alumni Interactions: Coordinating with alumni at regional, national, and international level for overall development of the Institute. Identifying and recognizing the alumni and organizing alumni reunions with the help of alumni.
   - Seeking and Raising Donations and Endowments for student scholarship/ awards, medals, Faculty chairs and facility development.
   - Newer Dimensions.

2. Objectives:

Developing effective mechanism of communication through all alumni by creating complete database, developing and using tools and technologies, websites, portals and keeping them updated with their Alma matters.

Some ongoing activities related to above:

- Alumni Registration portal developed for registration of alumni and collecting their contact details for enriching the database for effective communication. 10300+ Alumni have already registered on the portal.
- Alumni Newsletter: Being published since January and communicated to all alumni groups.
- Regular Communications to alumni through Group Email IDs (~25000), Institute Website, Alumni Website, and Social Media Platforms (LinkedIn, Facebook, Twitter, Instagram etc.).
- Keeping all the alumni updated with their Alma matters through Alumni Newsletters and posting the information on website and social media platform on regular basis.
- Honoring the alumni through distinguished alumnus awards and facilitating them at various occasions. Nine (09) alumni were awarded distinguished alumnus award in different categories during 2021-2022.
- Organizing regular meetings/ reunions etc.
- Engaging the alumni for overall development of the Institute fraternity through intellectual talks, seminars, workshops, online classes etc.
- Interacting with alumni groups for:
- Creation of Scholarships, endowment funds, angel funds etc.
- Creation of Alumni funded Institute Chair Positions in various Depts./ Schools/ Centers.
- Exploring the possibility for minor/ major donations for Infrastructural development, development of centers, schools, facility etc.
- Recently the Institute has signed a MoU with IIT (BHU) Foundation, USA established by the IIT (BHU) Alumni to achieve above goals.

3. Alumni Association of IIT (BHU), Varanasi

Alumni Association of IIT (BHU), Varanasi a centralized alumni association of the Institute having its office at the Institute is also now fully functional. It is registered under Societies Act, 1961 and all other alumni associations of IIT (BHU) at different places in India and around the world are considered its chapters.

4. IIT (BHU) Foundation, USA

IIT (BHU) Foundation, a non-profit body based in Albany, New York, USA, was a specific response to the need for a capital campaign to support IIT (BHU). Started by our highly passionate alumni to enable IIT (BHU)'s transformation into a trendsetting pioneer of technical education over the next century. Through the benevolence of alumni donor network contemporized with the strategic plans of their beloved alma mater, the Foundation seeks to foster the development of the Institute by capital raised through generous gifts, bequests, grants, and donations of the alumni.

5. Student Alumni Interaction Cell (SAIC):

SAIC is dedicated to providing avenues for three-fold interaction among the students, the alumni, and the Institute to develop a vibrant community, creating opportunities to thrive for the benefit of the commonwealth. Under the guidance of the Dean (Resource and Alumni Affairs), Prof. Rajeev Srivastava, the new SAIC team for session 2021-2022 was formed in January 2022. The Alumni Visiting Faculty (AVF) Program was continued in the online semesters with renowned alumni from different industries teaching full-credit courses as visiting faculty. The initiative saw 10 alumni faculty teach four different courses in the odd & even semester with 600+ students opting for them in the session 2021-22. The inaugural drive for the alumni-guided Mock Interviews Initiative witnessed 110+ alumni coming together to help 400+ students through 450+ interviews. SAIC strengthened its online presence among alumni and students by launching various online initiatives, including a series of posts of IIT (BHU) Bingo and Lingo-Wordle, and a 'you know you are from IIT (BHU)' video series. Celebrating the alumnae community during Women's Week, SAIC hosted 2 webinars and started the #IAmRemarkable series, a Google initiative empowering underrepresented groups to celebrate their achievements.

Student volunteers from SAIC also assisted in organizing offline alumni events like AIBA AGM, AASSII Bangalore meet-up, and the Western India Alumni Association meet-up.

Collaborating with the Training & Placement Cell, E-Cell, Research Community, Alumni Cell (IIT Bombay), IITBHU MUN, Technex, and more, SAIC organized informative talks and educational webinars. Two new books written by IIT (BHU) alumni were added to the Alumni Bookshelf. Volunteers from SAIC organized a booth, during the 10th Convocation Ceremony, with initiatives like 'Wall of 2021', 'Map your memories', and a photo booth for the 2021 graduands who became the alumni of IIT (BHU). SAIC's booth also motivated the graduands to register themselves on the official alumni registration portal.

SAIC's LinkedIn page gained 4000+ followers in the last 1 year, and the Instagram account amassed 1500+ followers. A Youtube channel and Twitter handle of SAIC were initiated as well. Moving forward, SAIC aims to build more alumni connections and closely knit the Institute's vast alumni network together.

6. Alumni Connect:

With the mission to strengthen the bond between the alumni and the students, frequent engaging sessions and formal/informal meets were organized in the form of ABBA's chaupaal sessions, SAIC's guidance sessions, and the alumni lectures series.

The yearly Student-Alumni Mentorship Program is aimed at providing personalized guidance to students from the Alumni. The program provided one-on-one mentorship to over 400 students by our accomplished alumni mentors in various career domains.

To update our alumni community about the various developments in the Institute, Student Alumni Interaction Cell (SAIC) released 13 editions of its monthly alumni newsletter - Alma Communiqé, since April 2021. Covering information related to each section of the Institute, each had an overall readership of 2500+ alumni from across the globe.

In the online setting, the Institute has successfully facilitated the delivery of 500+ documents, including transcripts, copies of migration certificates, etc, to alumni worldwide. SAIC's website (saic.iitbhu.ac.in) acted as the single-point platform for all alumni services and updates throughout the year. Blogs written by alumni were also added to SAIC's website. It hosted 11,000+ users and touched a total of 49,000+ page views. Apart from increasing the awareness of the newly developed Alumni Registration Portal through its social media platforms, SAIC also converted its database to add 3,000+ members to the portal. The current registration stands at 10,300+. Moving forward, SAIC aims to build more alumni connections and closely knit the Institute's vast alumni network together.

7. Lecture Series:

Sl. No.	Speaker	Affiliation	Topic and Date of the lecture
1	Prof. M. Vidyasagar	IIT Hyderabad	27/08/2021 Modelling COVID-19 in India and Elsewhere: The SUTRA
2	Prof. Gautam Sen	Former Professor at London School of Economics	29/09/2021 Paramount importance of the integrity of the Indian State for the survival of the nation
3	Prof. Rama Jayasundar	AIIMS, New Delhi	27/10/2021 Ayurveda and allopathy: How they differ and why it matters
4	Prof. A. V. Balasubramanian	Director, Centre for Indian Knowledge Systems, Chennai	10/11/2021 The Nature and Social Organization of Traditional Knowledge: An Introduction for Students of Modern Science and Technology
5	Prof. Dipankar Banerjee	Director Aryabhatta Research Institute of Observational Sciences (ARIES), Nainital	29/11/2021 India's own Aditya L1 space mission to learn about the nearest star "The Sun
6	Ambassador Akhilesh Misha	Indian Ambassador to Ireland	24/01/2022 Evolving role of Engineering and Technology in Indian diplomacy
7	Dr. Anand Venkatraman M.D.	Neurologist South Carolina, USA	17/02/2022 How Hinduism anticipated modern neuroscience?
8	Dr. Sanjeev Sanyal	Member of EAC, PMO	10/03/2022 Why Indian history textbooks need to be revisited

Endowment Scholarship, Medals, Awards and Other Donations:

Sl. No.	Name of Person/Trust	Amount of Donation	In favour of	Type	Purpose
1	Aridaman and Jagdish Nath Endowment Fund	Rs. 30,00,000/-	Registrar, IIT (BHU)	Endowment	Scholarship
2	Shri Om Prakash Aggarwal Medal & Cash prize and Bimla Aggarwal Medal & Cash Prize	Rs. 20,00,000/-	Registrar, IIT (BHU)	Endowment	Scholarship
3	BENCO'64 Corpus Fund	RS. 14,76,884/-	Registrar, IIT (BHU)	Endowment	Scholarship
4	Late Aditya Kumar Awasthi Endowment Award	Rs. 14,00,000/-	Registrar, IIT (BHU)	Endowment	Scholarship
5	Late Sudha Prasad Endowment Scholarship	Rs. 30,00,000/-	Registrar, IIT (BHU)	Endowment	Scholarship
6	IIT(BHU) FOUNDATION, USA	Rs.7,03,03,613/-	Registrar, IIT (BHU)	Infrastructure	Infrastructure Projects
7	1994 BATCH DONATION	Rs. 64,54,363/-	Registrar, IIT (BHU)	Endowment	Scholarship
8	P.S. Narayana Gold Medal	Rs. 5,00,000/-	Registrar, IIT (BHU)	Endowment	Scholarship

Sl. No.	Name of Person/Trust	Amount of Donation	In favour of	Type	Purpose
9	ANSYS SOFTWARE PVT. LTD.	Rs. 13,20,000/-	Registrar, IIT (BHU)	Endowment	Scholarship
10	KAF 1981 Scholarship	Rs. 57,011/-	Registrar, IIT (BHU)	Scholarship	Scholarship
Total		**Rs. 8,95,11,871/-** (*Rupees Eight Crore, Ninety-Five Lacs, Eleven Thousand, Eight Hundred, Seventy-One Only)*			

Year- Wise Funds & Donors:

Session	Total Funds from Alumnus (in lakhs of Rupees)	Total No. Of Donors
2009-10	NA	NA
2010-11	NA	NA
2012-13	NA	NA
2013-14	NA	NA
2014-15	Rs. 60	1 (IBGAA)
2015-16	Rs. 524.55	10
2016-17	Rs. 122.14826	9
2017-18	Rs. 60.53644	6
2018-19	Rs. 89.41317	16
2019-20	Rs. 104.98871	11
2020-21	Rs. 191.87632	06
2021-22	**Rs. 895.11871**	**10 Groups of Donors**

29. Research and Development Activities

Introduction: Institute has a mission to fulfil the needs of the nation through Research and Innovation. Faculty members and students are engaged in cutting edge research under various schemes. To inculcate research culture in the students, the institute has set up Tinkering Labs in various departments. Students are involved in research projects from almost the early stage of their education. The institute gives partial support to the research initiatives of faculty members through grants like Seed Money, Research Support Grant, and R & D Thrust Area Grants. The institute also provides Lab Grants for up-gradation of teaching labs and supports Central Instrument Facility acquisitions. Faculty members of the institute are active in frontier areas of research, and Govt. research sponsoring agencies and many reputed industries have supported their efforts. A new initiative of IIT (BHU) Varanasi, green and sustainable technology initiative, aims at promoting interdisciplinary research with industry collaboration for developing indigenous green, clean, and sustainable technologies that may be cost-effective, fulfill the local needs, and can be scalable to a global scale. The initiative aims to achieve excellence in research and capacity building on green & sustainable technologies and related applications, and leverage these technologies for the benefit of India. The list of new and ongoing projects as well as consultancy/testing projects are shown below

Sl. No.	Title of Project	Period of the Project Sanction	Name of Funding agency	Total cost of Project in Rs	Name of the PI
School of Biochemical Engineering					
1	Characterization of indigenous cow's dung and urine for scientific advancement and development of utility items	3 years	DST - SUPRA	3104162.00	Dr. Abhishek Suresh Dhoble
2	Integrated computational and experimental studies to potential therapy of kala-azar targeting Dephosphocoenzyme A Kinase (LdDPCK) of the pathogen as a target	2 Years	I-DAPT, IIT(BHU)	2000000.00	Prod. Vikash Kumar Dubey
3	Bioengineering of living materials to fabricate functionalized bacterial nanocellulose for high performance applications	5 Years	DBT	4250000.00	Dr. Prodyut Dhar
4	Design and Validation of field deployable miniaturized Nano-Bio-Sensing System for Detection of the Parasitic liver fluke fasciola gigantica	3 years	ICMR	4537996.00	Dr. Pranjal Chandra
5	Human IL-2 fused leishmanial trypanothione synthesis (TS) as protein vaccine candidates	22 month	ICMR	4613829.00	Prof. V.K. Dubey
School of Biomedical Engineering					
6	Early stage detection of Non-small cell lung cancer by developing aptamer-graphene microarray	3 Years	ICMR	5000000.00	Dr. Marshal
7	Development of Cardiac Model for Prediction of Human Heart Failure using Noninvasive medical imaging and Computational Fluid Dyanamic techniques	03 Yrs	ICMR	5231900.00	Dr. Sanjay Kumar Rai-PI Prof. B.V.R. Kumar-Co-PI Dr. Ashish Verma-Co-PI Dr. Om Shankar-Co-PI
8	Development of Sparse Inverse Co-variance based fuctional brain connectivity scheme fo rhte assessment of shared autistic tarits in autism and typical development	02 yrs	SERB	1576300.00	Dr. Jac Fredo AR
9	Cyber security of critical infrastructure: National Level Medical Grid System	3 Years	DST-TIH, IIT-Kanpur (Ihub Ntihac Foundation)	3067000.00	Prof. Prasun K. Roy-PI Dr. Jac Fredo-Co-PI

Sl. No.	Title of Project	Period of the Project Sanction	Name of Funding agency	Total cost of Project in Rs	Name of the PI
10	Hybrid EEG-EMG based Prostheti hand for transradial amputees to perform reach and grasp tasks	2 Years	DST	3714782.00	Dr. Shiru Sharma-PI Prof. Neeraj Sharma-Co-PI
11	Portable smart in vitro diagnostic platform for monitoring thyroid disorders	3 years	CST-UP	1194000.00	Dr. Sanjeev Kumar Mahto & Dr. Manoj Kumar
Department of Ceramic Engineering					
12	Surface charge induced antibacterial and cellular reponse of Hydroxyapatite-preovskite composites for orthopedic implant application	03 Yrs	UPCST	1092000.00	Dr. Ashutosh Kumar Dubey
13	Seasonal study on photocatalysis experiments in India enviornment	02 Yrs	IAA-RIF-2020 Grant Project, Swansea University, U.K.	15,000 Pound = 15,14,500	Dr. Santanu Das
14	Development of Nitride Ceramics thin-film for soft x-ray applications	02 YRS	UGC-DAE	45000.00	Dr. Santanu Das
15	Complex of online and onsite lectures on materials for hydrogen generation by solar water splitting	4 Year	Norway Council of Education and Research, Norway	207000.00	Dr. Santanu Das
Department of Chemical Engineering & Tech.					
16	Study the BioCNG production potential of different feedstocks	01 Year	TransBharat Biofuel Pvt. Ltd.	584448.00	Dr. J.P. Chakraborty
17	Production of high-purity methane from renewable biomass through anaerobic digestion	01 Yr	TransBharat Biofuel Pvt. Ltd.	120000.00	Dr. J.P. Chakraborty
18	Preparation of Dense Palladium/ Palladium-alloy Membranes and Optimization of Multi-pass Membrane Seprator to Generate Ultra-Pure Hydrogen for On-site Applications	03 Yrs	SERB	4257260.00	Dr. R.K. Upadhyay
19	Novel integrated engineering approach for effective carbon dioxide removal using biphasic amine blends for coal-based thermal power plant	03 Yrs	SERB	2167240.00	Prof. Monoj Kumar Mondal
20	Investigation on Hydrogels and Development of Multi-Responsive Polymers for Healthcare Applications	02 Yrs	SERB	2214340.00	Dr. Debdip Bhandary
Department of Chemistry					
21	Development of photoactivated transfer hydrogenration in catalysis for heat generation cancer transfer	05 Years	DST	3500000.00	Dr. Samya Banerjee
22	Design, Function, and Utilization of Multifunctional Surface Coatings for Next-Generation Lithiumion Batteries	2 Year	SERB	3306610.00	Dr. Rosy
23	Bioactivation of cyclopentadienyl rings in organometallic complexes	18 months	The Royal Society, London	588761.00	Dr. Samya banerjee
24	New "metabolite-amyloids" hypothesis for the origin of life	2 Year	SERB	2871126.00	Dr. Pandeeswar Makam
25	Towards alkaline aqueous battery and fuel cell application: Synthesis, kinetics and Operando spectroelectrochemical studies of mixed metal selenide and polypyrrole composites as potential oxygen electrocatalysts	3 Years	SERB	3206764.00	Dr. Manisha Malviya

Sl. No.	Title of Project	Period of the Project Sanction	Name of Funding agency	Total cost of Project in Rs	Name of the PI
Department of Civil Engineering					
26	Improvement of delamination fracture toughness in nao-graphene particles reinforced polymer composite laminates: An experimental- numerical approach	3 years	SERB	1830400.00	Dr. Rosalin Sahoo
27	Experimental and Numerical Investigation on Strength Behaviour of FRP Retrofitted Beam	1 years	Dhirendra Group of Company	500000.00	Dr. P.R. Maiti
28	A System for Quality Control and Certification of Geospatial Data for NSDI	1 years	DST	1844554.00	Dr. Anurag Ohri
29	Utilization of Industrial Wastes in Dense and Gap Graded Asphalt Mixes as Fillers	1.5 Years	DST	6004955.00	Dr. Ankit Gupta
Department of Computer Science & Technology					
30	Investigation risk factors and predicting complications in COVID-19 patients with Machine Learning Algorithms	08 Month	ICSSR	450000.00	Dr. Prasenjit Chanak
31	An Artificial Intelligence supported Instrusion Detection & Behavior Monitoring System for Crucial Data Servers against Novel Cyber Attacks	02 Yrs	SERB	2693540.00	Dr. Mayank Swarnkar
32	Investigation and development of mobile sink based intelligent data routing scheme for IoT-enable wireless sensor networks	02 yrs	SERB	3171340.00	Dr. Prasenjit Chanak
33	Optimal transport derivations in regularized wasserstein space for non-linear & linear transformations of deep neural networks	03 Yrs	SERB	660000.00	Dr. Tanima Dutta
Department of Electrical Engineering					
34	Prototype development of fuel cell and photovoltaic based innovative hybrid DC power pack for remote application	03 Yrs	SERB	3810000.00	Dr. Kalpana Chaudhary
35	Development of Cyber Resilient Protection scheme for AC Microgrid	03 Years	SERB	4576264.00	Dr. S.R. Mohanty
36	Design, development and demostration of solar-IV integrated on board and off board electric rickshaw charging Infrastructure	03 Yrs	DST	8781020.00	Dr. V.N. Lal-PI Dr. R.K. Singh-Co-PI Dr. S.K. Singh-Co-PI
37	Demonstrable Prototype of IoT enable DC/ AC smart grid at Library Building, IIT(BHU), Varanasi with solar photovoltaic Integration	02 Yrs	I-DAPT, IIT(BHU)	1975000.00	Dr. Rajeev Kr Singh-PI Dr. V.N. Lal-Co-PI
38	Data-driven battery sizing for standalone solar electric drive system for river boats	01 Yr	I-DAPT, IIT(BHU)	660000.00	Dr. Sandip Ghosh-PI Dr. Amritesh Kumar-Co-PI Dr. D.K. Singh-Co-PI Dr. Shyam Kamal-Co-PI Dr. N.K.S. Naidu-Co-PI Prof. Devendra Singh-Co-PI
39	Design and development of Cybersecured Smart Power interface for Energy-Local Area Network (ELAN)	03 Yrs	IHUB-NTIHAC Foundation, IIT Kanpur	1464000.00	Dr. Santosh kumar singh

Sl. No.	Title of Project	Period of the Project Sanction	Name of Funding agency	Total cost of Project in Rs	Name of the PI
40	Development of a real-time cyber-attack detecion module and its hardware-in-loop testing for an integrated power network	01 Yr	CPRI	4992000.00	Dr. S.R. Mohanty-PI Dr. Avirup Maulik-Co-PI Prof. S.P. Singh-Co-PI Dr. Sandip Ghosh-Co-PI Dr. Sukomal Pal-Co-PI Prof. Devendra Singh-Co-PI Prof. R.K. Mishra-Co-PI
41	Development of energy efficient and compact electric drive train for fuel cell electric vehicle	03 Yrs	SERB	4917264.00	Dr. Kalpana Chaudhary
42	Reliability evaluation and performance enhancement of grid integrated wind-solar-EV hybrid renewable energy systems	03 Yrs	SERB	4136264.00	Prof. R.K. Saket
43	Li-ion based inverter for household appliances	6 month	Ornate Agencies Pvt. Ltd.	595257.00	Dr. R.K Singh
Department of Electronics Engineering					
44	Analysis and design of sub-millimeter wave tuneable gyrotron for DNP- NMR Spectroscopy application	3 years	SERB	5016264.00	Dr. M. Thottappan
45	Indo- South korea Joint Network Center for Environmental Cyber Physical Systems	3 Years	DST- Bilateral Project	2487740.00	Dr. Sanjeev Sharma
46	Development of a scalable volatile organic compound (VOC) sensing based intelligent cyber physical system for near real-time vehicular pollution monitoring and recommendation for reduced emissions	2 years	I-DAPT, IIT(BHU)	1980000.00	Dr. N. S. Rajput, Dr. Abhisek Mudgal
47	Implementation of Terahertz Band Communication for Next generation wireless Netwroks	2 years	SERB	Rs. 23,67,240/-	Dr. Sanjeev Sharma
48	Design and development of cognitive small-world LPWAN for Internet of things towards health monitoring	02 yrs	SERB	3011080.00	Dr. Om Jee Pandey
49	Development of Hand Telerehabilitation Platform for Diagnostic and Therapeutic Purposes in Physiotherapy	3 years	SERB	2128764.00	Dr. Kishor Sarawadekar
50	Metasurface-based Sensor devices for mm-wave and sub-terahertz Applications	3 years	SERB	5621264.00	Dr. Somak Bhattacharyya
51	Design and Development of High Gain, Wide Bandwidth Beam Steered Reconfigurable Reflectarrray Antennas for 5Gmm Wave Applications	3 Years	SERB	5126231.00	Dr. Manoj Kumar Meshram
52	Design and Development of Composition engineered toxic free organic inorganic Perovskite Quantum Dots Based Flexible Spectrum Tunable Photodetectors	03 Years	SERB	4290234.00	Prof. Satyabrata Jit
Department of Humanities					
53	Analytical study of sansad adarsh gram yojana of JAyapur and Nagapur in Varanasi District	05 months	Mahatma Gandhi National Council of Rural Education	200000.00	Dr. Manhar Charan
54	Language Communicator Tool for End Users	3 Years	MeitY	17224784.00	Dr. Sukhada

Sl. No.	Title of Project	Period of the Project Sanction	Name of Funding agency	Total cost of Project in Rs	Name of the PI
Department of Mathematics					
55	Study and analysis of interfacial cracks in composite media	03 Yrs	DAE	230500.00	Prof. Subir Das
56	Pseudo-differential operators in partial differential equations, distribution and machine learning?	03 Yrs	SERB	660000.00	Dr. Santosh Kumar Updadhyay
57	Wavelets Adaptive Schemes for singular intergral equations	03 Yrs	SERB	660000.00	Dr, Vineet Kumar Singh
58	On developing polynimial-time interior-point methods for Robust Multiobjective Convex optimization problems	03 Yrs	SERB	660000.00	Dr. Debdas Ghosh
Department of Mechanical Engineering					
59	Prediction of Dose- Volume Histograms of Organs-at-risk in Prostate Cancer Radiation Therapy using Machine Learning	2 years	I-DAPT, IIT(BHU)	352000.00	Dr. Arnab Sarkar
60	Development of Optical Fibre Cable Coloring Machine	2 years	DST	2332381.00	Dr. Debashish Khan & Prof. Sandeep Kumar
61	3D Computatioanl and experimental study on layer dynamics and prediction of critical power law scales in double-diffusive finger convection	03 Yrs	SERB	4930992.00	Dr. Om Prakash Singh
62	Reactivity controlled compression ingition (RCCI) combustion engine for methanol itilization and its feasibility analysis to be adopted in hybrid electric vehicles (HEVs)	02 Yrs	SERB	2748680.00	Dr. A.P. Singh
63	Technology intervention for creative economy	1 year	Mindshare	935000.00	Dr. Lakshay & Dr. Saurabh Pratap
64	Development of a multiplex portable spinning disc for effective monitoring of women's health during different stages of pregnancy	3 years	DST	Rs. 72,94,173/-	Dr. Arnab Sarkar & Dr. Pradip Paik
65	Development of Friction Stir Welding for repair work of high temperature materials like EN-24 steel	1.5 years	NCL, Singrauli	Rs. 53,90,000/-	Dr. Mohd Zaheer Khan Yusufzai & Dr. Meghanshu Vahista
66	Localized Electricity generation through Modular Low Temperature ORC Units	2 years	CPRI Bangalore	Rs. 48,40,000/-	Prof. S. K. Shukla
67	Development of advanced nanocrystalline coatings and LASER cladding system for repair work related to HEMMS and other structural components	1.5 years	NCL, Singrauli	Rs. 85,80,000/-	Dr. Meghanshu Vahista & Dr. Mohd Zaheer Khan Yusufzai
Department of Metallurgical Engineering					
68	Art, science and technology of traditional "Koftgari" metal work in India	01 Yr	INSA, New Delhi	285000.00	Dr. K.K. Singh
69	Study on effect of temperature and mean stress on fatigue strength of turbine aerofoil alloy	04 Yrs	CARS, DRDO	28190000.00	Dr. G.S. Mahobia
70	Development of Mesoscale models to describe hot deformation and creep of low SFE materials	02 Yrs	DST	1090000.00	Dr. Surya Deo Yadav-PI Dr. Joysurya Basu-Co-PI

Sl. No.	Title of Project	Period of the Project Sanction	Name of Funding agency	Total cost of Project in Rs	Name of the PI
71	Chemical recycling of electronic waste for sustainable livelihoods and material consumption in India	02 Yrs	GCRF-EPSRC	4607126.00	Dr. K.K. Singh
72	Effect of composition and microstructure on mechanical properties of 7-9%NI steel for LNG tanker and Naval application	02 Yrs	SERB	3201000.00	Dr. Sudipta Patra
73	Microstructurea tailoring to develop biocompatible Cr-Fe-Mo-Nb-Ti based high entropy alloys for medical applications	02 Yrs	SERB	3062040.00	Dr. Subhasis Sinha
74	Development of industrial waste as mold material for sustainable development of developing countries	03 Yrs	SERB	2719200.00	Dr. Jayant Kumar Singh
75	Emergent phases in 2D quantum materials and Heterostructures	05 Yrs	DST	2450000.00	Dr. Joysurya Basu
Department of Mining Engineering					
76	Design of Protective Barrier Pillar Against Large Water Head in Underground Coal Mines	2 Years	CMPDI	8747000.00	Prof. G.S.P. Singh
77	Development of Laboratory Scale Bio-Grout Technology for Landslide Mitigation	3 Years	SERB	3295380.00	Dr. A.K. Verma
78	Development of prototype of early warning systems on impending goaf for underground coal mining.	3 Years	SERB	3691600.00	Dr. Ashok Jaiswal
Department of Pharmaceutical Engineering					
79	Exploring Anti-inefective potential of Panchagavya : Metabolomics and Proteomics Approaches	3 years	DST	6543378.00	Dr. Shreyans Kumar Jain
80	Design and development of Molecular hybrids on a multifunctional framework for regulating Cholinesterases, β- secretase 1, Amyloid-β, and Oxidative Stress Against Alzheimer's Disease	3 years	ICMR	8042685.00	Prof. Sushant Kumar Shrivastava
81	Discovery of novel selective inhibitors of choline acetyltransferase : Lead optimization and in vivo pharmacolinectic studies	2 years	SERB	Rs. 32,86,840/-	Dr. Rajnish
82	Development of toolkit for prediction of blood brain-barrier permeability using deep learning to expedite CNS drug discovery	3 years	SERB- Matrics	660000.00	Dr. Rajnish
83	Safety & Efficacy of the "PL05" capsule/ tablet in Animal in the treatment of gastric acidity	1 Year	Purobien Life Sciences Private Ltd.	1975000.00	Dr. Sunil Kumar Mishra-PI Dr. A.N. Sahu-Co-PI Dr. Ashutosh Dubey-Co-PI
84	Self-assembled smart nano medicine for targeted therapy of advanced non-small cell lung cancer	03 Yrs	ICMR	2180898	Dr. M.S. Muthu
85	Design and development of potential multufunctional molecular hybrid fo rthe treatment of Alzheimer's disease	03 Yrs	SERB	2828600.00	Prof. S.K. Shrivastava
86	Crystal Engineering of Dapagliflozin to improve its pharmaceutical properties	2 years	SERB	Rs. 31,40,367/-	Dr. Dinesh Kumar
Department of Physics					
87	Fabrication of Cathode meterials and SOFC for energy application	03 Years	UPCST	1144000.00	Prof. Prabhakar Singh

Sl. No.	Title of Project	Period of the Project Sanction	Name of Funding agency	Total cost of Project in Rs	Name of the PI
88	Tailoring correlations of light using plasmonic and nano structure	03 Yrs	BRNS	3369850.00	Dr. Rakesh Kumar Singh
89	Development of perovskite oxides SrCeO3 and SrCeO4 as high temperature thermal barrier coating (TBC) material for aerospace application	03 Yrs	DRDO	2979420.00	Dr. Shail Upadhyay
90	Analytical stufy of hydrodynamic theory of wet active fluid	03 Yrs	SERB	660000.00	Dr. Shradha Mishra
91	Experimental study of anisotropy in nuclear charge and current distribution that results in interplay of electric and magnetic rotation in Xe nuclei	03 Yrs	SERB	1674200.00	Dr. Somnath Nag
92	Active polar flock in quasi tow-dimensional geometry: role of confinement and boundary condition	03 Yrs	SERB	2849240.00	Dr. Shradha Mishra
93	Study of quantum chaos and multipartite entanglement using quantum circuits	03 Yrs	SERB	2155439.00	Dr. Sunil Kumar Mishra
94	Tailoring properties by altering long and short-range structures in eco-friendly, Pb-free ferroelectric perovskite oxides for energy harvesting	03 Yrs	SERB	1853500.00	Dr. Saurabh Tripathi
School of Materials Science & Technology					
95	Design and Development of Drone Mounted Optical Sensor for continuous monitoring of PM 2.5 & PM 10 in railway siding before, during and after loading operation	1 year	Advanced Materials Pvt. Ltd	1020000.00	Dr. Chandan Upadhyay & Prof. Rajiv Prakash
96	Fabrication of low power consuming inverted near-infra red AMOLED	3 years	DST	4782000.00	Dr. Bhola Nath Pal
97	Multifunctional NAnostructured Mn/Fe doped CeCro3 for Photocatalyst and Magnetic Switching	03 Years	SERB	4856764.00	Dr. Chandana Rath
98	Investigation of Anomalous Nernst Effect in Shape Memory Heusler Alloys	3 Years	SERB	6842000.00	Dr. Sanjay Singh

Running Sponsored Projects as on 31.03.2022 (other than 2021-22)

Sl. No.	Title of Project	Period of the Project Sanction	Name of Funding agency	Total cost of Project in Rs	Name of the PI
School of Biochemical Engineering					
1	Flow and segregation of granular materials out of hoppers and two & three dimensional devices	3 Years	CST-UP	1044000	Dr. Vishal Mishra
2	Screening of novel antibiotics from the metagenome of Himalayan glacial soil	3 Years	LSRB / DRDO	3987500	Dr. Ashish Kumar Singh
3	Targeted drug delivery of methotrexate/ gallic acid- folate conjugated Poly L-Lysine nanoparticles	3 years	DBT	3461200	Dr. Abha Mishra
4	Strategies towards generation of functional tissue engineered construct for orthopedic application	02 Yrs	SPARC-MHRD	2325950	Prof. Pradip Srivastav

Sl. No.	Title of Project	Period of the Project Sanction	Name of Funding agency	Total cost of Project in Rs	Name of the PI
5	How Beclin 1 mediates cross-talk between apoptosis and autophagy via ITS C-Terminal Fragment?	3 years	CSIR	3261600	Prof. Vikash Kumar Dubey
6	Re-purposing of approved drugs from Drug Bank database for possible treatment for COVID-19 by targeting SARS-CoV-2 main purpose	1 year Extended till 19.12.2021	SERB	1544664	Prof. Vikash Kumar Dubey
7	Development of bi-functional electrochemical nanobiosensors for bacterial exotoxin detection: Implication towards screening of toxin producing bacterial isolates	5 Years	SERB	3800000	Dr. Pranjal Chandra
8	Validation of Glutathione synthetase from Leishmania donovani as new drug target or discovery of new drug candidate	3 years	ICMR	4142000	Prof. Vikash Kumar Dubey
9	Screening of Novel Psychrophilic alkaline Protace from the metagenoime of Antartic soil	3 Years	SERB	1904410	Dr. Ashish Kumar Singh
10	Identification of Gene Responsible for Degradation of Poly (ethylene terephthalate) in Ideonella sakalensis	3 yrs	DBT	4043200	Dr. Ashish Kumar Singh
11	Development and evaluation of an innovative poly herbal Bi layer wound dressing material	3 Years	DRDO	3203200	Dr. Pradeep Srivastava
12	Construction of Cold Inducible Expression System	3Years	DBT, New Delhi	3610300	Dr. Ashish Kr.Singh
13	Enhancement of Lipid Content in Microalge Scenedesmus Obliquus Using Genetic Engineering Tool: a step towards biodiesel	3 Years	CST, U.P.	450000	Dr. Ashish Kr. Singh
School of Biomedical Engineering					
14	Nanoparticles supported self-Assembled Conducting Polymer Monolayer Based Platform for Rapid Detection of Monosodium Glutamate in Food Products	3 Years	DBT	8920000	Dr. Marshal
15	Neem seed based nanocapsules and nanomedicine for targeted drug delivery and cancer therapy	3 Years	SERB	4046000	Dr. Pradip Paik
16	Funcional-hollow-porous-bipolymer based Nanoformulations and Interventions for treatment of Cancer and prevention of Tuberculosis, concept of nanomedicine with multiple drugs for multiple diseases.	3 Years	DST	52,18 ,094	Dr. Pradip Paik
17	Developing Psyllium Husk Based Polysaccharide Hydrogel into Electrospinable and 3D Printable Materials : Towards Fabrication and Comparative Evaluation of Lyophilized, Electrospun and 3D Bioplotted Scaffolds for Liver Tissue Engineering	3 years	SERB	4252512	DR. Sanjeev Kumar Mahto
18	Design and Development of Affordable Myoelectric Prosthetic Hand	3 years	SERB-CRG	1001000	Dr. Shiru Sharma
19	Development of Microfluidic tools for neuromuscular synatogenesis and nanotoxicological studies	5 Years	DST	3500000	Dr. Sanjeev Kumar Mahto
20	Delineating the molecular interactome of Calcineurin, post phagosome formation in mycobacterial pathogenesis	3 Years	SERB-DST	2130000	Dr. Somdeb Das Gupta

Sl. No.	Title of Project	Period of the Project Sanction	Name of Funding agency	Total cost of Project in Rs	Name of the PI
Department of Ceramic Engineering					
21	Design Development & characterization of porous Ti/SiO2 composite with tailored microstructure fabricated by powder metallurgy using rice husk and sucrose as space holder for orthopaedic applications	1.5 Yrs	DBT	1560000	Dr. KalyaniMohanta
22	Novel Electrode Materials for Reversible alkali –ion (Li+/Na+) capacitors and Pseudocapacitors	3 Yrs	SERB	3665245	Dr. Preetam Singh
23	Development of glasses as plant nutrients	03 Yrs	SERB	4205520	Prof. Ram Pyare (PI) (Retired on 31/05/20) Dr. R.K. Chaturvedi-Co-PI Dr. Preetam Singh-Co-PI
24	Development of Hgh Alumina(Al2O3) & DOPED High Alumina materials for Ceramic Catridge Applications	06months	Yantransh Auto Pvt. Ltd	60500	Dr. Santanu Das
25	Development of high strength ceramic magnet for rotating machine applications	3 years	SERB-IMPRINT	2591600	Dr. Pradip Roy
26	Metal Nanostructure assited plasmonic hot electron induced phase transformation in 2D- Transition metal di- chacogenides for hydrogen evolution reaction	03 Yrs	STARS -MHRD	9790000	Dr. Santanu Das-PI Dr. Bratindranath Mukherjee-Co-PI
27	Development of high Thorough put Processing route for CIGS PV absorber films by spray pyrolysis of Pre-synthesised Nanoparticle Ink	3 Years	SERB	4603010	Dr. M.I. Ahmad/ Dr. S. Das
28	Cold sintered ferroelectric polymer Ceramic Nano composites for Energy Storage	3 Years	SERB	5491695	Dr. AkankshaDwivedi
29	Combined effect of dynamic electrical stimulation and surface charge on cellular functionality of electrovector and piezoelectrically toughened bioceramics	3 YEARS	SERB	4322680	Dr. Ashutosh Kr. Dubey
Department of Chemical Engineering & Technology					
30	A Stack development of untilized regenerative Proton Exchange Memberance Fuel Cell for Large Scale Production of Ultra Pure Hydrogen Fuel, Oxygen using Solar Energy & uninterrupted Power	03 Yrs	SERB	3761500	Dr. Hiralal Pramanik
31	Controlled synthesis of MoO3 nanoparticles inside mesoporous materials for oxidative dehydrogenation of organic moleciles with CO2	03 Yrs	SERB	3229430	Dr. Vijay Maruti Shinde
32	Direct cooling of the Silicon Photovoltaic Module Enabled by an Array of Micro channel built in the backside EVA -Layer	03Yrs	SERB	4152280	Dr. Ravi Prakash Jaiswal
33	Removal of Benzene, Toluene, Ethylbenzene and Xylene (BTEX) using Adsorption and Bioremediation	02 Yrs	SPARC-MHRD	5402420	Dr. RS Singh (Chemical)-PI Prof. B.N. Rai-Co-PI
34	Modelling & simulation of ultra-high temperature coating on sustrate using CVD/ CVI Process	02 Yrs	DRDO	981000	Dr. Vijay Maruti Shinde

Sl. No.	Title of Project	Period of the Project Sanction	Name of Funding agency	Total cost of Project in Rs	Name of the PI
35	Detailed study on the effect of mining as well as Thermal Power Stationss on Natural water bodies in Singrauli Region and Recommendation Thereof	03 Yrs	NCL	5877000	Prof PK Mishra
36	Novel integrated engineering approch for effective tar decomposition and its last minuts removal to fuel gas reforming in biomass pyro-grasification	03 Years	SERB	3562685	Prof. M.K. Mondal
37	RKVY-RAFTAAR, Agribusiness Incubators (R-ABI) under RKVY-RAFTAAR Scheme	02Yrs	DACFW	23300000	Prof. P.K.Mishra
38	Regional cheracterization of atmosphericx aerosols at Varanasi Region	INITIALLY FOR 03 YRS	ISRO	NA	Dr. RS Singh-PI Dr. Tirthankar Banrjee-Co-PI
39	Design and development of a Membrane reformer protype for production of ultra pure hydrogen from methanol for fuel cell based vehicle and power generators	04months at IIT(BHU)	DST	11436150	Dr. RK Upadhyaya
40	NOx Removal from Diesel Exhaust by combined NOx storage Reduction and NH3 SCR System	3 Years	SERB	2735000	Dr. Sweta
41	Development & Evaluation of Infrared Nanoparticles for Cellular-wide sensitive E-field Mapping	3 Years	DST Nano Mission	5152965	Dr. Manoj Kumar
42	Pyrolysis of Biomass for the Producation of Bio-oil: Experimental and Computational Study	3 Years	DST	23,50,000.00 (T/F Case)	Dr. J.P. Chakraborty
43	Fabrication of low-cost High-through out Flow Cytometer using tunable nanolenses.	3 Years	DST, New Delhi	5209600	DrAnkurVerma
Department of Chemistry					
44	Evaluation and Optimisation of Biodiesel Production from Microalgae	3 Years	DST	5192400	Prof. Yogesh Chandra Sharma
45	Photolabile Protected Monosaccharides: Syntehsis and Application to Oligosaccharides Synthesis Using a Continuous flow Photoreactor	3 year	Germany	4462460	Dr. JeyakumarKandasamy
46	Photolabile Protected Monosaccharides: Syntehsis and Application to Oligosaccharides Synthesis Using a Continuous flow	3 year	DST, New Delhi	4570400	Dr. JeyakumarKandasamy
47	Development of portable electrochemical sensor hydrogen peroxide	3 Yrs	BRNS Mumbai	3492750	P.C.Pandey
48	Detailed lacture based curriculum development for science subjects as part of Induction Programme in AICTE COLLEGES	2 YRS	AICTE	1152000	Dr. Indrajit Sinha
49	Metal hexacyanoferrate modified screen printed electrodes for the removal of radio nuclides	03 Yrs	DRDO	4171680	Prof. P.C. Pandey-PI Prof. Y.C. Sharma-Co-PI
50	Design, Synthesis and Biological evaluation of O- and C- derivatives of Phenylethanoid Glycosides as a Multi-targeting Neuroprotective disease modifying agents for AlZheimer's Disease	03 YRS	SERB	4807264	Dr. Jeyakumar Kandasamy-PI Dr. Gyan Prakash Modi-Co-PI Dr. Sairam Krishnamurthy-Co-PI

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51	Development of magnetically recyclable visible light photocatalysts for H2O2 Production	03Yrs	BRNS	3405850	Dr. Indrajit Sinha-PI Prof. Rajiv Prakash-Co-PI
52	Development of transition metal based nanocatalysts for bioinspired water oxidation	03 Yrs	CSIR	1600000	Dr. Arindam Indra
53	Developing Superior Nobel Metal free Oxygen Evolution Catalyst for Electrochemical Water oxidation and Metal -Air Battery	02 Yrs	SERB	2464000	Dr. Asha Gupta
54	Promoting water Oxidation Reaction with Electrochemically Synthesized ultrathin Layered double Hydroxide Nanosheets	02 Yrs	SERB	2651000	Dr. Arindam Indra
55	Noble multimetallics/ZnO photocatalyst for hydrogen production from green sources	1.5 years	NPIU	1323000	Dr. Indrajit Sinha
Department of Civil Engineering					
56	Propagation & Mitigation model of mixed road traffic noise for planning od mid- sized Indian Cities	3 Years	MHRD	37300000	Dr. Brind Kumar
57	INSPIRE Faculty Award	5 Years	DST	3500000	Dr. Manash Chakraboratory
58	Smart & Integrated Pedestrian System Design	3 Years	MHRD, MoUD, GMR Airport Developers (Ltd), Vikram Solar Pvt. LTd	21277100	Dr. Ankit Gupta (Co-P.I.)
59	Active Vibration Control of Smart Composite and Sandwich Structures in hydro-thermal Environment	3 years	SERB	1908940	Dr. Rosalin Sahoo
60	Investigation on dynamic response analysis of shallow foundation resting on pond ash deposits	3 years	SERB- ECRA	3614600	Dr. Supriya Mohanty
61	Development and assessment of asphalt mastic from typical Indian and Austrian filler materials with a new test method	2 years	DST	950000	Dr. Nikhil Saboo
62	River Aquifer exchanges & hydrogeological study for watershed management of betwa river basin	2 years	NRDMS	2451000	Dr. Shishir Gaur
63	Assessing the Suitability of warm mix asphalt (WMA) Technology Using Tribological and Performance Characteristics	3 years	SERB, ECRA	3670680	Dr. Nikhil Saboo
64	Rheophysics of semi-rigid road building materials and optimization of their composites for the perception of heavy transport load	2 years	DST	1040000	Dr. Nikhil Saboo
65	Safer Roads: Development of Mix Design Methodology for OGFC Mixes	3 years	CST-UP	1192000	Dr. Nikhil Saboo
66	Life cycle and performance of Waste Plastic roads	1.5 Years	NRIDA	2050000	Dr. Nikhil Saboo
67	Life Cycle and performance assessment of cold mix roads	1.5 Years	NRIDA	2050000	Dr. Nikhil Saboo
68	Understanding the engineering behavior of unsaturated geomaterials and implementing it in limit analysis for solving geotechnical problems	2 years	SERB	27,28,000/-	Dr. Manash Chakraborty

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69	Strategic Planning for Water Resources and Implementation of Novel Biotechnical Treatment Solutions and Good Practices (SPRING)	3 years	DBT	7127840	Prof. Prabhat Kumar Singh
70	Development of guidelines for use of waste reclaimed water in pavement construction	3 years	Ministry of Road Transport & Highway	2,756,160.00	Dr. Nikhil Saboo
71	Development of Performance based mix design process: A re-look at the Marshall Mix design process for the production of strong and durable	3 years	NHAI	9121000	Dr. Nikhil Saboo-PI Dr. Ankit Gupta-Co-PI
72	Factor affecting exhaust emissions of motorized two wheeler in an Indian Tier-II city: A case study of Varanasi	2 years	SERB	1944170	Dr. Abhisek Mudgal
73	Automatic Map Generation from High Resolution Images Applying Deep Learning Techniques	3 years	SERB	3322264	Dr. Anurag Ohri
Department of Computer Science & Engineering					
74	A Robust medical image forensics system for smart healthcare	02 Yrs	SERB	1407870	Dr. Tanima Dutta
75	Research & Experiment in the area of advanced data structures and methodologies to represent and process large terrain datasets for efficient rendering	07 MONTHS	DRDO	995000	Prof Rajiv Srivastav-PI Dr. N.S. Rajput-Co-PI
76	Intelligent system for computer assisted diagnosis (CAD) OF CANINE MAMMARY TUMORS	02 Yrs	DBT	2944859	Prof Sanjay Kumar Singh
77	Multilingual document summarization in quasi stationary environment	02 Yrs	DRDO	5556000	Dr. A.K. Singh
78	Resource-optimized fog computing for smart healthcare application in IoT-enable heterogeneous networks	02 Yrs	SERB	2906970	Dr. Ajay Pratap
79	Developing Improved Algorithms for Intelligent Video Surveillance	03 Yrs	SERB	2908345	Dr. Pratik Chattopadhyay
80	Incorporating Intelligence in Email System	2 Years	BRNS	1368000	Dr. Ruchir Gupta
81	Development of text based matching algorithms for bartering software	01 Yrs	ASCONSOFTECH	1162500	Dr. Sukomal Pal
82	Development of an energy –efficient wireless sensor networks for precision agriculture	3 Years	DST	3417130	Dr. H.P. Gupta
Department of Electrical Engineering					
83	Mix energy Source Electric Vehicle Charging System Design and its Impact on Indian Smart –distribution - grid	3 Yrs	DST	9449500	Dr. R.K.Singh
84	Design Modelling and simulation of linear Induction Drive for Propulsion Applications	02 Yrs	CARS, DRDO	1000000	Prof. R.K.Srivastava
85	Construction of Non-monotonic Lyapunov Function for the Dynamical Systems governed by differential inclusions	03Yrs	SERB	660000	Dr. Shyam Kamal
86	Virtual synchronous generator for microgrid applications	03 Years	SERB	4554930	Dr. N.Krishna Swami Naidu

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87	Output feed back controller design for linear parameter varying systems	03Yrs	SERB	5732760	Dr. Sandip Ghosh-PI Dr. Shyam Kamal-Co-PI Dr. N.K.S. Naidu-Co-PI Dr. S.K. Singh-Co-PI
88	Prospects of power converters for integration of electric vehicle charging stations witj the existing distribution system in India	02 YRS	SPARC - MHRD	4978635	Dr. Santosh kumar singh (PI),
89	Design and analysis of linear induction moter drive for electromagnetic aircraft launching system	2.5 YRS	DRDO	3000000	Dr. RK Srivastav
90	Development of a standalone solar electric drive system for boats	01 yrs	Ornate Agencies Pvt. Ltd.	500000	Dr. Sandip Ghosh-PI Dr. Shyam Kamal-Co-PI Dr. N.K.S. Naidu-Co-PI Dr. S.K. Singh-Co-PI Dr. Amitesh Kumar-Co-PI Prof. D. Singh-Co-PI
Department of Electronics Engineering					
91	Design Investigations of High Power MM Wave W Band Gyratron	2 Years	DRDO, CARS, Begalooru	990000	Prof. P.K. Jain/ Dr. M. Thottappan
92	"Design and development of miniaturized pattern/frequency reconfigurable MIMO antennas and its performance improvement using artificial electromagnetic material"	3 Years	SERB, New Delhi	4252000	Dr. Manoj Kr. Meshram
93	Development of Polymer and Quantum Dots Blended Tandem Solar Cells Using Low Cost Solution Processed Method	3 Years	SERB	4486000	Prof. Satyabrata Jit
94	Physical Layer Security for LTE based Wireless Networks to increase Jamming Margins	1 year	CRL- BEL	3360000	Dr. K.V. Srinivas
95	Study, Design and Implementation of Frequency Selective Metasurfaces for Microwave Applications	3 years	SERB-ECRA	4670620	Dr. Somak Bhattacharyya
96	Electromagnetic Analysis, Design and Simulation of Dual Frequency (S- and C-band) Relativistic Backward wave Oscillator – A HPM Source	3 years	DRDO	4685000	Dr. M. Thottappan & Dr. Somak Bhattarcharya
97	Development of Simulation Software for Spintronic Device & Circuit Simulation	2 years	SERB	1613600	Dr. Shivam Verma
98	Design development and characterization of Low loss frequency selective metamaterial waveguide coupler and antenna for 5 G Applications	3 years	SERB	660000	Dr. Smrity Dwivedi
99	Electromagnetic Analysis, Design and simulation of an X-band Gyro-Twystron Amplifier	3 Years	SERB	2910448	Dr. M. Thottappan Prof. P.k. Jain
Department of Humanities					
100	Cognitive Linguistic study of perception verbs in Hindi and English: In the context of machine translation	2 Years	DST (CSRI)	1364000	Dr. Swasti Mishra

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101	Integrative Environment View (IEV) for Sustainable Hyper Local Temporal & Spatial Environmental Pollution Monitoring : Case of Air Quality in Varanasi City		Google Asia Pacific Ptv. Ltd	Rs. 14,67,300/- ($20,000/-)	Dr. Puneet Kumar Bindlish & Dr. N.S. Rajput, Dr. Abhishek Mudgal, Dr. Amit Verma
102	NRDC Innovation Facilitation Centre	3 years	National Research Development Centre	8,00,000 per year	Prof. Rajiv Prakash
Department of Mathematics					
103	Schwarz waveform relaxation methods for singularly Perturbed Parabolic Problems	03 Years	SERB	660000	Dr. Sunil Kumar
104	Study and analysis of Mathematical Models of Moving Boundtry Problems	03 Yrs	SERB	2244000	Dr. Rajeev
105	Approximation methods for problems in fractional calculus of variations	03Yrs	SERB	2156264	Dr. Rajesh Kr. Pandey
106	Existence and Stability analysis of periodic solution of variable time implusive neural network	03 Yrs	SERB	660000	Prof. Subir Das
107	RobustAdaptive Mesh Methods for Singularly Perturbed Problems in Ordinary and Partial Differential Equations	03 Yrs	SERB	2095279	Dr. Sunil Kumar
108	Numerical methods for integral equations and differential equations by using Wavelets and operational matrix	3 Years	SERB, New Delhi	693000	Dr. Vineet Kumar Singh
109	Development of solution methods for Abel's integral equations and generalized Abel's integral equation	3 Years	DAE, Mumbai	332500	Dr.Rajesh Kr. Pandey
110	On characterizing and Obtaining the Complete Efficient Solution Set of an Interval Optimization Problem under a D-Dominance and a variable Dominance Structure	3 Years	SERB, New Delhi	1502500	Dr. DebdasGhosh
111	Applications of Spectral graph theory in analyzing the structural properties of large scale networks	03 Yrs	SERB	660000	Dr. Lavanya Silveganeshan
Department of Mechanical Engineering					
112	Design & Development of Combined Cooling and Power Generation system	2 Years	CST-UP	960000	Prof. S.K. Shukla
113	Development of an intelligent evaporative cooler for composite climate	2 years	DST	892243	Dr. Jahar Sarkar
114	Development of Ti alloy based composites by mechanical alloying and stirrer casting route for dental applications	3 YEARS	SERB	5021000	Dr. Rakesh kumar Gautam
115	Photonic radative cooler for passive sub-ambient cooling	3 years	SERB- IMPRINT	4188800	Dr. Jahar Sarkar
116	Development of complex Aluminium Shell Part High pressure die-casting	1 year	DRDL Hyderabad	2485000	Prof. Santosh Kumar
117	Development of ORC technology for waste heat utilization for the generation of electricity	3 years	BRNS	26,97,175/-	Dr. Jahar Sarkar
118	Assessment of Structural Vulnerability through Characterisation of Tornado for a NPP Site	3 years	BRNS	30,32,275/-	Dr. Arnab Sarkar

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119	Pathology on a Spinning Disc	3 years	MHRD - STARS	9410000	Dr. Arnab Sarkar
120	Impact of a microspray on a bio-mimicking surface	2 years	SERB	3173060	Dr. Binita Pathak
121	Effect of Jet Pulsation on Reacting Jet in Crossflow	2 years	SERB	3201000	Dr. Anubhav Sinha
122	Assessment of Vulnerability of structures in Regard to Cyclonic Wind loads	2 years	Bureau of Indian Standards	1676000	Dr. Arnab Sarkar
123	Development of a Rubber based sheet Hydro forming setup	2 Years	DRDL, CARS Hyderabad	984000	Prof. Santosh Kumar
124	Development of Sheet Hydro-forming Process for missile Components	2 Years	Defence Research & Development Lab (DRDL), Hyderbad	980000	Prof. Santosh Kumar
125	Technology and Fabrication of Tabletop CNC Machine for Micro-Tubular Hydro forming Setup	2 Years Extended till 2018	BARC, Mumbai	4932000	Prof. Santosh Kumar
126	Assessment of residual stress upon friction stir welding of steel	3 Years	SERB	4500000	Dr. Mohd. Zaheer Khan Yusufzai
127	Quenching behavior of dry heated ord with nanofluid	2 Years Extended till 2018	BRNS	3356800	Dr. Pradyumna Ghosh
128	Design of High Temperature Facility for Graphite Dust Formation and Transport.	2 years Extended till 2018	BRNS (DAE)	5184000	Dr. Prasant Shukla
129	Centre for Energy and Resources Development	2 Years Extended till 2018	MHRD FAST Scheme	40000000	Dr. S.K. Shukla
130	Design Development and Fabrication of an Incremental Sheet Hydro forming Machine Setup	3 Years	SERB	4800000	Dr. Santosh Kumar
131	Characterization and validation of Schlieren Technique for Capturing Shock Wave	2 Years	DRDO. New Delhi	1784800	Dr. Amitesh Kumar
132	Study of tool wear in Diamond turn Mechining & Micro Machinig Process	2 years	BARC Mumbai	2405800	Prof. Sandeep Kumar-PI Dr. U.S. Rao-Co-PI Dr. Amit Tyagi-Co-PI
Department of Metallurgical Engineering					
133	DST-INSPIRE Fellow	5 Years	DST	6716084	Breatindranath Mukherji
134	Development and structural characterization of Bi2-xMx3+(y-3)/2 coating for protection against coolant & sensors	3 yrs	UGC DAE-CSR	NA	Dr. JoysuryaBasu
135	Development of Electropulsing Facility for Synthesis of Bulk Nanostructured Materials	2 Years	B.R.N.S.	2648400	Dr. Rampada Manna Prof. G.V.S. Sastry/ Prof. R.K. Pandey/ Prof. S.N. Ojha
136	In situ electron microscopy at atomic scale for understanding nucleation growth and interfaces of omega phase	3 Yrs	SERB	6584600	Dr. JoysuryaBasu
137	Role of short range ordering in desigining high entropy alloys	03 YRS	SERB	4136000	Dr. Vikash Jindal-PI Dr. N.K. Mukhopadhyay-Co-PI

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138	Cyclic thermochemical fuel generation	03Yrs	SERB	5263920	Dr. Randhir Singh-PI Dr. Bratindranath Mukherjee-Co-PI
139	INSPIRE Faculty Award	05 Yrs	DST	3500000	Dr. Suryadeo Yadav
140	Weaer corrosion and biocompatibility of Tantalum (Ta) coated 316 L, Stainless steel fotr Ortopedic Applications	03 Yrs	SERB	4493240	Dr. CK Behera
141	Development of Functionally Graded Armour Composites (FGACs) Materials	03Yrs	DRDO	9166240	Dr. Vikas Jindal-PI Dr. Kaushik Chattopadhyay-Co-PI
142	Mechanical behaviour of advanced high strength steel procesed by additive manufacturing	03 Yrs	SERB	3983896	Dr. NC Santhi Srinivas-PI Dr. Kaushik Chattopadhyay-Co-PI
143	Tunable surface plasmon optical sensing behaviour of M-MoS2 (M=Cu, Ag, Au) Alloy Nanostructures	03 Yrs	SERB	4465000	Dr. Bratindranath Mukherjee-PI Dr. R.K. Mondal-Co-PI
144	Creep and corrosion behaviour of Novel MRI2300 Magnesium Alloy with Nanoparticles Addition	03 Yrs	CSIR	1722000	Dr. AK Mondal
145	Development of low cost ß-Ti alloy for biomedical applications	03 YRS	SERB	4050400	Dr. Kaushik Chattopadhyay
146	In -situ microscopy study of age hardeining in dispersion strengthend cast magnesium alloys and its ex-situ correlation with mechanical propoerties	03Yrs	SERB	3736064	Dr. Ashok Kumar Mondal-PI Dr. Joysurya Basu-Co-PI Prof. N.K. Mukhopadhyay-Co-PI
147	High performance rare earth free nanocomposites permanent magnet for advanced motor and alternative energy applications	04 Yrs	SERB	5690264	Dr. N.K. Prasad-PI Dr. Chandan Upadhyay-Co-PI
148	Stability of Nanostucture and Residual Stress Developed through Ultrasonic Shot Peening in Superalloy IN718 at Elevated Temp.	02 Yrs	DRDO	2886800	Dr. Kaushik Chattopadhyay-PI Prof. N.C. Shanti Srinivas-Co-PI Dr. G.S. Mahobia-Co-PI
Department of Mining Engineering					
149	Meter Scale Granite block Smectic clay barriers experiment and associated TMH modeling for Indian Pit mode reference geological Disposal System	3 Years	BRNS	3088900	Dr. A.K. Verma
150	Inspire Faculty Award	6 years	DST- INSPIRE	3500000	Dr. A.K. Verma
151	Landslide stability analysis in subzero environment around Kinnaur district of Himachal Pradesh, India	3 years	DST	4973200	Dr. A.K. Verma
152	Design and development of Micro Seismic based technique for monitoring and prediction of slope failure in Pandoh, Himachal Pradesh, India	3 years	SERB	4977040	Dr. A.K. Verma
153	Whole body Vibration Exposure on HEMM Operators in Surface Coal Mines – An Assessment of Various Contributing Factors	3 years	SERB	4003762	Dr. S.K. Palei

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154	National Geotechnical Conclave on "Development of Early warning system (EAWS) for Landslide Hazard Mitigation on 21-22 March, 2019	One time grant	DST	550000	Dr. A.K. Verma
155	Optimization Of capacity utilization of draglines deployed in NCL through Big data Analytics	3 years	NCL	8397000	Prof. Suprakash Gupta
156	Study for impact assessment of back filling of fly ash in abandoned gorbi mine and treatment/management of acidic water to avoid contamination of ground water and soil	2.5 years	NCL	12480000	Prof. Aarif Jamal
157	Contribution of Neighboring Industries over the air quality of mining area	3 years	NCL	13400000	Prof. Aarif Jamal
158	Evaluation of ground behaviour in open cart and underground excavations using TDR	2 years	NCL	3444000	Prof. Sanjay Kuamr Sharma
159	Stability Evaluation of dump slopes & developing slope stability model for design of Long Term Stable Dump Slopes through proper benching & vegetation : Part A	3 years	NCL	6680000	Dr. Rajesh Rai
160	Stability Evaluation of Dump Slopes and Developing Slope Stability Models for Design of Long Term Stable Sump Slopes through Proper Benching and Vegetation – Part B	3 years	NCL	14113000	Prof. G.S.P. Singh
161	Slope stability monitoring and analysis using hyperspectral imaging	3 years	SERB	47,10,500/-	Dr. Tarun Verma
162	Forewarning System for Landslide Prediction along Mangan and Chungthang road, Sikkim India	3 years	DST	Rs. 43,78,700/-	Dr. A.K. Verma & Dr. Puneet Kumar Bindlish
Department of Pharmaceutical Engineering & Tech.					
163	Pharmacological evaluation of anti-diabetic effects of some natural drugs	2 years	DRDO	2887500	Dr. Sairam Krishnamurthy
164	Pharmacology of Natural drugs in obesity and eating disorders	2 yrs	Natreon Inc.	2654600	Dr. Sairam Krishnamurthy
165	Novel Milk Exosomes for the combination therapy by using selected natural medicine (Paclitaxel & Colchicine) for the efficient management of breast cancer	2 years	SERB	3138344	Dr. Ashish kumar Agrawal
166	Bioluminescence based monitoring of tumor progression and treatment by apoptotic pathway	5 Years	DBT	42,50,000/-	Dr. Deepak Kumar
167	AMWATCH: Defining the AMR Burden of Antimicorbial Manufacturing Waste in Puducherry and Chennai	3 years	DBT	10650720	Dr. M.S. Muthu
168	Development of Novel Therapeutics for the Redemption from Frostbite and Burn Injury induced Chronic Pain in Military Veterans	3 years	SERB	4081240	Dr. Vinod Tiwari
169	Development & evaluation of nanocarrier for enhanced anti-microbai activity of anacrdic acid against human and plant pathogens	3 Years	DST	5866996	Dr. Sanjay Singh
170	Design and Synthesis of novel Matrix Metallo Proteinase (MMP-2 & 9) InhibitorsastherapeuticagentsforAlzheimer's Disease	3 Years	Deptt. of Biotechnology	6052000	Dr. S.K. Singh

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171	Evaluation of some compounds in experimental Alzherimer Disease	2 years	Natreon Inc., U.S.A.	2940000	Dr. Sairam Krishnamurthy
172	Experimental Evaluation of Geroprotective Activity of Some Compounds	2 years	Natreon Inc., U.S.A.	2206800	Dr. Sairam Krishnamurthy
173	Pharmacological Effect of novel formulation in experimental allergic encephalomyelitis rodent model	1 Years	DISTO Pharmaceutics	504000	Dr. Sairam Krishnamurthy
174	Dissecting brain reward circuitry and CNS comorbidities in chronic neuropathic pain	3 years	SERB-ECRA	4909520	Dr. Vinod Tiwari
175	Phytochemical and pharmacological evaluations of bioactivity guided fractions of medicinal plants of Tripura	3 years	DBT	2655200	Dr. A.N. Sahu
176	Natural Template Based Novel Neuroprotective Molecules for the management of Alzheimer's Disease	3 years	SERB- CRG	3720240	Dr. G.P. Modi
177	Development of novel near infrared fluroscence imaging probes for detecting amyloid beta species in eyes of Alzheimer's disease animal model	3 years	ICMR	3700000	Dr. Gyan Prakash Modi
178	Targeting kinesins Mediated regulation of nociceptors for the Treatment of Neuropathic Pain	02 yrs	SPARC - MHRD	4753775	Dr. Vinod Tiwari-PI Dr. Sanjay Singh-Co-PI
Department of Physics					
179	DST/INSPIRE Faculty Award (IFA-12-PH-21)	5 Years	DST	9500000	Dr. S.K. Singh
180	IFA-12-Ph-22 DST/INSPIRE FACULTY Award/2012 INPIRE FACULTY AWARD	5 Years	DST	7600000	Shri Sunil Kumar Mishra
181	Study of Magnetospheric Wave-Particle interaction, Aurora, Airglow and Conductivities on Planets and their Satellites	3 Years	ISRO	38,0,3,000.00	Dr. D. Giri/ R.P. Singhal/ O.N. Singh
182	Observations and Modeling of solar transients & space weather candidates	3 Years	SERB	1776000	Dr. Abhishek Kr. Srivastava
183	Electronic Structure evolution across quantum critical point in Li(Ti1-xVx)2O4 Li1-x Znx)V2O4	03 Yrs	SERB	5500000	Dr. Swapnil Patil
184	Collection of self-propelled particles in inhomogeneous environment : numerical & analytical Studies	03 Yrs	SERB	2459600	Dr. Shradha Mishra
185	The sun under the microscope – An integrated research activity to maximize the science return from a new generation of missions to study the sun	2 Yrs	UGC	1928180	Abhishek srivastav
186	Modeling self assembly and phase seperation kinetics in the complex soft materials	03 Yrs	SERB	4654375	Dr. Awaneesh Kumar Singh
187	Ramanujan Fellowship	05 Yrs	SERB	3800000	Dr. Bidya Binay Karak
188	Investigations of new lead free perovskite materials for solar cells	03 Yrs	SERB	3809391	Prof. Prabhakar Singh
189	Tuning self assembly of fluoresent Protein Nanodots for Melanoma Skin Cancer	03 Yrs	SERB	3668522	Dr. Avanish Singh Parmar-PI Dr. S.K. Yadav-co-PI

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190	On understanding the solar activity and preparing for space weather prediction using a state of the art dynamo model	03 YRS	ISRO	3099000	Dr. Bidya Binay Karak-PI Dr. Dipankar Banerjee-Co-PI
191	Multiple reversals of the Sun's polar- field and their physical causes	02 yrs	DBT	1034680	Dr. Bidya Binay Karak
192	Scattering assisted imaging: Exploiting randomness of the light.	03 Years	SERB	3421000	Dr. R.K. Singh
193	Study of Polarmetric parameters from laser speckle	03 Years	CSIR	2950240	Dr. R.K. Singh
194	Spatially resolved digital holography plarization microscope for diagnosis applications	03 Yrs	DBT	4144840	Dr. Rakesh Kumar Singh
195	DST-INSPIRE Faculty Award (IFA-13 PH 54) understanding structure and dynamics of the Interstelar medium	5 Years	DST, New Delhi	3500000	Dr. PrasunDuttta
School of Materials Science & Technology					
196	J.C. Bose Fellowship	5 Years	SERB	6800000	Prof. Dhananjay Pandey
197	Polymeric Nanobiohybrids for Tissue Engineering and Drug Delivery	3 Years	SERB	2311000	Prof. Pralay Maiti
198	Development of low voltage, low power, colloidal quantum dot light-emitting transistors for next generation display technology	3 Years	SERB	5552323	Dr. Bhola Nath Pal/Prof. p. Maiti
199	Design & investigation of thermal conducting two dimensional heterostructures.	3 yrs	SERB	5480840	Dr. Ashish Kumar Mishra
200	Development of low cost sodium ion battery: Fabrication and application of NASICON based electrodes	3 Years	DST	8289600	Prof. Rajiv Prakash
201	Understanding the mechanism of action through cell biology and upgradation of herbal drug in solution and biodegradable patch for the treatment of diabetic foot ulcer	16 months	BIRAC	2860000	Prof. Pralay Maiti
202	Elastocaloric effect measurement setup to study caloric effect in shape memory alloys	3 Years	UGC-DAE	NA	Dr. Sanjay Singh
203	Development of anticorroshiv paints	1 Years	Harind Chem. & Pharmaceutics Pvt. Ltd.	120000	Prof. Pralay Maiti
204	Radionuclide sensing platform based on functionalized polymer having nanochannels using accelerator	3 years	BRNS - DAE	3416000	Prof. Pralay Maiti
205	Mott transistors based Neuromorphic memory device	3 years	DST	10098200	Dr. Shrawan Kumar Mishra
206	Minimizing hysteresis in magnetic shape memory Heusler slloys for reversible magnetocaloric effect	3 years	SERB	4839838	Dr. Sanjay Singh
207	Low cost ammonia gas sensor based on polymer/polymer nanocomposite device formed by novel floating film transfer (FTM) technique	2 years	IMPRINT- SERB	3569376	Prof. Rajiv Prakash
208	Nanoscale interfacial magnetic skyrmions and its applications in memory devices	3 years	DST	10350520	Dr. Shrawan Kumar Mishra

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209	Chemical modification of Gaur Gum to improve its properties	1 year	Hindustan Gum Pvt. Ltd	770000	Prof. Pralay Maiti
210	Harnessing the synergy of low band gap organic semiconductor and highly facile floating film transfer methofd for low cost efficient organic electronic devices	02 Yrs	SPARC-MHRD	4285375	Prof. Rajiv Prakash-PI Prof. Pradeep Kumar Jain, Deptt. Of Electronics-Co-PI
211	Aging studies and estimation of thermal properties of Liner Materials	2 years	DRDO	17514310	Prof. Pralay Maiti
212	Impact of Carbon Nanomaterial based Photocatalyst on Microalgae Growth and Lipid for improved Biodiesel	3 years	DBT	730000	Prof. Rajiv Prakash
213	Development of High Te Lead Free Piezoelectric Materials for Energy Harvesting	3 years	SERB	5271200	Dr. Akhilesh Kumar Singh
214	3 D Bio Steeolithography for Enggineering fucntional Tissues	5 Years	SERB	3,724,640.00	Prof. Pralay Maiti
215	Investigation of Structural phase transformation in HfO2 thin films using X-ray absorption spectroscopy	NA	CRS	NA	Dr. Chandana Rath
216	Biodegradable path for faster wound healing including diabetic ulcers using ayurvedic medicine	3 years	DBT	Rs. 27,00,000/-	Prof. Pralay Maiti
217	Investigation of two dimensional transition metal dichalogenides Nanostructure as Effective SERS Substrate	3 years	SERB	4382400	Dr. Ashish Kumar Mishra
218	Development of nanoink for anti-counterfeit products and solution	2 years	Industry Kantas Track Pack India Ltd.	100000	Prof. Rajiv Prakash
219	Life Line Security & System	3 years	Life Line Security & System	100000	Prof. Rajiv Prakash
220	Co2 Capture in Carbon nanocomposites	5 years	DST, New Delhi	3500000	Ashish Kumar Mishra
221	Table Top Sem	One time grant	Advanced Materials Pvt. LTd	1731500	Prof. Rajiv Prakash

Major Consultancy Project FY 2021-22

Sl. No.	Department	Challan No.	Title of Consultancy Project	Funding Agency	Name of Consultant	Amount
1	Mining Engg.	384750	Grading of coal	CCL, Ranchi, Sonebhadra	Prof. Aarif Jamal	1,052,480.00
2	CIVIL	2893	Proof checking of foundation and substructure, protection work and launching scheme etc. of bridge No. 31 on river ghaghra as per payment schedule	Rail Vikas Nigam Limited, Chief Project Manager, III, RVNL, Varanasi	Prof. K K Pathak	1,113,722.00
3	CIVIL	2887	Structural design of approach road and minor bridges in chandpur village to ghaghra bridge from ballia side in district ballia	PWD Construction division, Kunwar singh chouraha, inside of government house, ballia	Prof K K Pathak	1,137,300.00

Sl. No.	Department	Challan No.	Title of Consultancy Project	Funding Agency	Name of Consultant	Amount
4	CIVIL	1869	Vetting of design and drawing	JWIL Infra Ltd., Sadar Bazar, Karvi, Chitrakoot, UP	Prof. V. Kumar	1,242,000.00
5	Mining Engg.	384748	Grading of coal	SECL, Bilaspur, Chattisgarh	Prof. Aarif Jamal	1,285,315.00
6	CIVIL	2013	Visit of Kharid Darauli Ghat on River Ghaghra for the analysis of safety and approach road of Bridge constructed over the river in the district Ballia	Executive Engineer, Provincial Division, PWD, Ballia	Dr. P K S Dikshit	1,364,808.00
7	SMST	310283	Designing functional properties of topological non trivial cobased heusler alloys.	IKST Bangluru	Dr. Sanjay singh	1,473,200.00
8	CIVIL	1698	Vetting of structural design and drawing of WTP (17.66 MLD), MVS-Buxar, Bihar WTP at MVS Maujamupr, Ara, Bihar	M/s Avian Infrastructure and Energy Pvt. Ltd., House No. 4, Road no. 11, Patel Nagar, Patna	Prof. S. Mandal	1,475,000.00
9	Mining Engg.	384738	Scientific Study to determine the slability of ground over depillore area……, Bhatgaon Colliery	M/s SECL, Bhatgaon Area	Dr. GSP Singh	1,510,500.00
10	CIVIL	1990	Third Party quality control assurance as per the term and condition of UPRNN sonebhadra unit for the construction activities of state medical college in mirzapur Up	Unit Incharge, UPRNN Ltd., State Medical College, piperdah, mirzapur	Prof K K Pathak	1,620,000.00
11	Mining Engg.	384737	Scientific Study in Manikpur Opencast Korba area SECL	M/s SECL, Korba Area	Dr. Nawal Kishore	1,624,250.00
12	CIVIL	1688	Health monitoring of the following bridges using visual inspection rebound hammer etc. 1. RCC bridge over Rail Line on Jayant-Singrauli Road, Jayant 2. RCC bridge over Road in west section of Mine at Jayant	NCL, Head Quarter, Singrauli	Prof. K.K. Pathak	1,627,500.00
13	CIVIL	1550	Hydrological studies at Sasan Power Limited	Sasan Power Limited, Tiyara, Siddhikurd, Singrauli	Dr. Anurag Ohri, Dr. B.N. Singh, Dr. Shishir Gaur	1,657,500.00
14	CIVIL	3231	Submission of site survey and priliminary conceptual design for road, drainage.	General Manager, Amethi Coal Mine, Project THDCIL, Singrauli	Dr. S Mondal, Dr. R Kumar	1,923,750.00

Sl. No.	Department	Challan No.	Title of Consultancy Project	Funding Agency	Name of Consultant	Amount
15	Mining Engg.	384713	Scientific study for preparation of scientific study report of chhal OCM, Baroud OCM, Jampali Bijari Open cast mine of SECL	M/s SECL, Raigarh, CG	Dr. Naval Kishore	1,982,400.00
16	CIVIL	1998	Pile Design for the proposed four land roadway in Ganga sand in varanasi	The Executive Engineer, Provincial Division, PWD, Varanasi	Prof Arun Prasad, Dr. B Kumar	2,006,000.00
17	CIVIL	3232	Vetting of structural design and drawing of elevated corridor from kargil chaowk, gandhi maidan to science college via PMCH, Ashok Rajpath in Patna	Gawar Construction Limted, Khessra no. 718, NH-30, New Bypass Road, Badi Pahari, patna	Prof. Rajesh Kumar	2,160,000.00
18	Humanistic	327606	Northern Coal Field Limited, Head Quarter, Singrauli, MP	Northern Coal Field Limited, Head Quarter, Singrauli, MP	Dr. Shail Shankar	2,222,032.00
19	Chemical Engg.	386360	Water Testing	CPCB, New Delhi	Dr. Pradeep Kumar	2,636,888.00
20	Mining Engg.	384730	Hill Slope stablisation for 91 RCC/14BR TF of Project	M/s Commander 14 BRTF	Dr. A.K. Verma	2,950,000.00
21	Chemical Engg.	386382	Testing of water	CPCB, New Delhi	Dr. Pradeep Kumar	3,020,063.00
22	Mining Engg.	384728	Scientific study of fly ash utilization/ dumping/ mixing/ ... machinery	M/s NCL	Dr Rajesh Rai, Prof. B.K. Shrivastava, Prof. A.Jamal, Dr. Ashok Jaiswal	3,595,520.00
23	Chemical Engg.	386348	Water Testing	PCB, New Delhi	Dr. Pradeep Kumar	4,039,488.00
24	Chemical Engg.	386349	Development of Natural Gas Based Menbrane	Gail India Ltd. Noida, UP	Dr. R K Upadhyay	4,770,000.00
25	Chemical Engg.	386359	Water Testing	CPCB, New Delhi	Dr. Pradeep Kumar	6,233,600.00
26	CIVIL	1900	Consultancy Charges	Engineer-in-chief (Development) and Head of the Department, UPPWD (IDS Circle), Lucknow	Dr. Ankit Gupta	6,785,000.00
27	Mining Engg.	507	Hill slope stablisation for 91 RCC/14 BRTF of project vartak	M/s Commander 14 BRTF HQ 14 BRTF, West Karmony, AP	Dr. A K Verma	6,958,460.00
28	Mining Engg.	510	DPR/Carrying out survey, ground test, design test...	M/s HQ 761 BRTF C/o 99 APO	Dr. A K Verma	7,075,000.00

National MoU Signed during FY 2021-22

Sl. No.	Particulars	MoU Coordinator Name and Address	Area of Interest	Year
1	Applied Materials India Private Limited, White Field, Bangalore	Dr. Chandan Upadhyay, SMST, IIT(BHU)	Project "Defects analyses of Compound Semi-Conductor Wafers"	15.07.2021
2	M/s Adroiech Information System Pvt. Ltd.	Prof. Santosh Kumar, Professor Incharge, Main Workshop	To Establish Precision Engineering Hub (PEH) Skills and Job, Support for SME, Defence, Space and Research, Orthopedics and Medical Devices, Gem Jewelary Industry, Artisans and Handicraft	09.11.2021
3	M/s Premas Biotech Pvt. Ltd.	Prof. Vikash Kumar Dubey	To promote interation between IIT(BHU) and Premas Biotech Pvt. Ltd., to provided formal basis for interaction, to combine resources for research and development in healthcare and biotechnology and knowledge/technology transfer	06.12.2021

Foreign MoU Signed During FY 2021-22

Sl. No.	Particulars	MoU Coordinator Name and Address	Area of Interest	Year
1	National Cheng Kung University, Taiwan	Dean (R&D), IIT(BHU)	Develop academic and educational cooperation on the basis of equality and reciprocity and to promote relations and mutual understanding between the Parties.	**25.09.2021**
2	National Institute of Material Science, Japan	Dean (R&D), IIT(BHU)	To provide a mechanism for the acceptance of Ph.D. students of Indian Institute of Technology (BHU) to National Institute for Materials Science, Japan for exchanging key researchers within the partnering institution	**25.10.2021**
3	The University Court of the University of Edinburgh & University of Dundee & National Institute of Design, Ahmedabad	Prof. KK Singh, Deptt. Of Metallurgical Engg. IIT(BHU)	Chemical Recycling of Electronic Waste for Sustainabel livelihoods and material consumption in India	**12.11.2021**
4	Niigata University, Japan	Dr. Rakesh K. Singh, Deptt. Of Physics, IIT(BHU)	Student Exchange	**01.02.2022**

30. Ideation Innovation & Incubation Foundation (I-3F)

Ideation Innovation & Incubation Foundation (I-3F), is an umbrella organization at IIT (BHU) Varanasi for fostering entrepreneurial ecosystem and nurturing start-ups in the East UP region. It was earlier known as Tecnology Innovation and Incubation Centre (TIIC), thereafter, in pursuance of the BoG Resolution No. 14.9 dated 09th May, 2022, it has been renamed as Ideation Innovation & Incubation Foundation (I-3F). The core strength of I-3F is technology commercialization in the sectors of agricultural, agri-Business, cleantech, food safety & testing, information technology & e-commerce, bio-technology and health sector. The services offered by I-3F are mentoring, counseling, training, financial linkages, seed funding, lab facility, office facility, networking support etc. In short I-3F administers various units which provide 'Start to Scale' support for entrepreneurship and facilitates research activities to convert into commercial ventures. Different units under I-3F are:

NCL-IIT(BHU) Incubation Center:

NCL-IIT(BHU) Incubation Center (NIIC) is a joint collaboration of Indian Institute of Technology (Banaras Hindu University) and Northern Coalfields Limited. NCL – IIT (BHU) Incubation Center, is a Technology Business Incubator for fostering entrepreneurship and nurturing tech start-ups of IIT(BHU) Varanasi. With the financial support from NCL various initiatives taken by NCL-IIT (BHU) Incubation Center at IIT (BHU) Varanasi to tap the start-ups of this region intended to build a strong eco-system for nurturing innovation and Startups that will drive sustainable economic growth and generate employment opportunities. In order to meet the objectives of this initiative, various in-house and outdoor workshops/seminars/webinars have been organized to accelerate spreading of the Startup awareness.

Key Activities undertaken-

- Establishment of two satellite centers in Singrauli region 1. Khadi & Handloom Center 2. Training & Development Center
- Installation of 3D Printing technology in Mining
- A detailed exercise is being carried out by the satellite center of NCL IIT(BHU) Incubation Center to form FPOs of the farmers and tribes in Singrauli region to ensure watershed management as well as for promoting aquaculture. The sites are being identified at the initial stage in association with local communities.
- An online multi-vendor ecommerce platform of Kishan Ganga has been developed. This platform will provide the market to SHGs, farmers and tribes across the country.
- 3 nos. of practical training programme were organized for 95 beneficiaries in the rural area of Singrauli for 3 months. This programme was organized to promote Organic Farming, Mushroom Cultivation and Pearl Cultivation.
- 5 nos. of documentaries have been launched on 5 Areas of NCL. Beside this a dedicated documentary to promote "Singrauli Eco-Tourism Circuit" has been prepared by NCL-IIT (BHU) Incubation Center. Draft MoU in this regard has been shared with MPSTDC so that this initiative can be launched at national level under SDC.
- Startups from NCL-IIT (BHU) Incubation Center successfully participated in the 3rd ICOMS wherein the conference as well as the exhibition registered a great success in view of active participation and sharing/demonstration of new ideas and innovations.

RKVY-RAFTAAR Agri Business Incubator (R-ABI):

R-ABI is a scheme funded by the Ministry of Agriculture and Farmers' Welfare (MoA & FW) which is working in close collaboration with other incubators. This scheme aims at strengthening the infrastructure in agriculture and allied areas in order to promote agripreneurship and agri business by providing financial support and nurturing the incubation ecosystem in and around Uttar Pradesh. Since its inception from March 2018 total 106 start-ups were trained out of which 40 (including 11 women entrepreneurs) are incubated under R-ABI with a sanctioned amount of Rs. 422 Lakhs. A sum of Rs. 149.4 Lakhs has been disbursed as 1st tranche to these start-ups. These start-ups have generated direct employment for 295.

CISCO thingQbator Makerspace Program:

As a part of a CSR initiative, Cisco Systems along with NASSCOM Foundation has established a "thingQbator" makerspace at IIT (BHU). This AI and IoT based makerspace program helps to accelerate innovation and entrepreneurship among the student community of IIT (BHU) Varanasi. Students not only play with the ideas but become creative problem solvers and strengthen the start-up ecosystem of India. A moment of honour and pride was witnessed when MPYG (MultiPlayer Yoga Game), one of the IIT(BHU) students, stood among the top 10 startups out of 150+ startups across India, in the Cisco thingQbator Cohort-4, and received a pre-seed grant of INR 5 Lacs from NASSCOM Foundation.

The MoU with NASSCOM ended on 31st December 2021 which is under review for renewing the same.

E-Cell:

The Entrepreneurship Cell (E-Cell) is an institute body run by the students of IIT(BHU) Varanasi devoted towards acting as a symbiotic link between the entrepreneurs and the existing startup ecosystem as well acting as a hub where all start-ups can meet, collaborate and innovate. It helps in creating a Startup Ecosystem, building relations for promotion of Startups and Entrepreneurship at IIT (BHU) Varanasi. E-Cell organized several business plan Competitions, workshops, hackathons and Interactive sessions from high-end speakers and entrepreneurs. Continuing the legacy, E-Cell launched its standalone website and discord server with high enthusiasm and zeal. E-Cell also launched its Mentorship Program for the freshers to give them insights into the startup world. Moving on, two "Ask Me Anything" sessions were conducted with guest speakers as Mr. Akash Verma (Founder Aagaman Tech.) and Mr. Shashwat Agarwal (Co-founder HappyMinds). In the months of July and August, E-Cell formulated its flagship event "Build with Us" and also created CasEx and Research O'Mania to promote problem-solving and research attitudes. Two Founder's Speaks sessions were organized on July 15th and August 14th with speakers Guru Sankararaman, co-founder of Tekion Corp. and former VP of Tesla, and Amit Kumar Agarwal, co-founder of NoBroker.com respectively. E-Cell also arranged a 4-day Bootcamp on Blockchain and Supply Chain Management from July 16th to July 19th, with Mr. Mohan Satyaranjan, CEO of Taqanal Energy as the instructor for the Bootcamp. Going ahead, E-Cell IIT BHU organized a competition, Design Rush'21, for fostering innovative and creative ideas for design enthusiasts. Continuing with the Founder's Speak sessions, Ecell conducted a session with Mr. Ankit Agrawal, Co-founder Dare2Compete.com. Two workshops, one on Web 3.0 Technologies and other on Product Deck Making, were organized for making students aware of the new trends in these two fields. Resuming our Founder's Speak Session, another Session with Mr. Anubhav Dubey, Co-founder ChaiSutta Bar was organized. As time went by to promote social entrepreneurship E-Cell IIT BHU publicized and participated in the Social Innovation Pitching Contest organized by KAAJ Ventures and Srijani. Two startups associated with E-Cell, NOVA and Stimuler raised INR 75 Lacs and INR 20 Lacs respectively.

Now comes the batch of 2021, with immense excitement E-Cell welcomed them by conducting the orientation and organized a fresher's only weekend, titled "Novice Fiesta", to boost the entrepreneurial spirit of them through 3 competitions, namely Quiz-It, Link-It, and Build-It. Moving forward E-Cell in collaboration with I-DAPT Hub Foundation organized the I-DAPT Hub Pitch Challenge and along with that, E-Cell conducted the On-Campus Round of the Hult Prize. Moving ahead E-Cell IIT BHU in collaboration with Startup Grind India organized a talk with Mr. Ashutosh Gupta (Country Head LinkedIn India, CHE '97) to give students of IIT (BHU), Varanasi an idea on how to build an awesome career in the New World of Work.

As the month of April dawns in, everyone at E-Cell loaded their guns and cleared the deck for the second edition of E-Cell's Flagship Event Entrepreneurship Summit 22. The event was held from 5th April to 13th April and saw a huge wave of participants, more than 9000 in numbers, and a total prize pool of whooping 4 Lakhs across 15 competitions and 20 talks/sessions/workshops. The summit also hosted a pitching cum fundraising event, Shark Tank IIT BHU, in which 16 startups were given an opportunity to pitch in front of the Venture Capitalist, and got a chance to raise funds of up to INR 10 Cr. 6 startups from IIT BHU, Fenmo, Examarly, MPYG, MaxTap, Tride Mobility, CoachBudy, and PetCare, presented their idea at Shark Tank IIT BHU. E-Summit '22 winners were awarded with a cash prize of INR 3.75 Lakhs which was directly credited to their accounts.

Key Instruments:


NASSCOM FOUNDATION
Cisco thingbator
Indian Institute of Technology (BHU)
COME AND SUPPORT YOUR TEAMS
MPYG
Cisco
During thingbator Felicitation Event.
YOU ALSO STAND A CHANCE TO WIN BIG
Friday | 17th Dec' 21 | 5:00 pm onwards

31. Institute Works Department

Ever since its inception in the year 2014, Institute Works Department (IWD) in IIT(BHU) shoulders the onus of major/ minor repairs, maintenance, retrofitting, renovation and development of infrastructure along with proper operation and sustenance of existing utility lines. The upkeep and functioning of water distribution system, sewerage network, electrical overhead/underground cable lines, distribution sub-stations (DSSs), power sub-stations (PSSs) and SCADA systems also pertain to the prime responsibility of IWD.

In addition to repair and maintenance of the hostels, guest house, faculty apartments/quarters and academic buildings, road side development and maintenance of the pavements/bituminous roads are duly undertaken by IWD. Depending upon the extent and quantum of work, IWD floats online tenders to award work-contracts to various vendors/contractors to execute maintenance/development related works of IIT(BHU) under compliance of GFR and standard practices of Civil/Electrical Engineering.

Major construction works completed by CPWD under HEFA-1st loan scheme during the period from April' 2021 to March' 2022: -

Sl. No.	Name of work	AA&ES amount (Rs. in Crores)
1.	Construction of Dhanraj Giri Hostel-II (S+7) with Dinning block (G+1) behind Dhanrajgiri Hostel at IIT(BHU), Varanasi	49.66
2.	Construction of Student Activity Centre with Indoor Sport Facilities (G+2) in Rajputana Ground at IIT (BHU), Varanasi	27.80
3.	Construction of Apartments (S+8) for Faculty and Officers behind Vivekanand Hostel at IIT (BHU), Varanasi	40.01
	Total	**117.47**

Major construction works in progress by NBCC (India) Ltd. under HEFA-2nd loan scheme during the period from April' 2021 to March' 2022: -

Sl. No.	Name of work	AA&ES amount (Rs. in Crores)
1.	Construction of Morvi Hostel-II (S+10) and Dining block (2nd, 3rd & 4th Floor) at IIT(BHU), Varanasi	97.00
2.	Construction of Faculty Apartments (S+10) (Two Blocks) near Vishwakarma Hostel at IIT(BHU), Varanasi	50.00
	Total	**147.00**

Major construction works in progress by CPWD during the period from April' 2021 to March' 2022: -

Sl. No.	Name of work	AA&ES amount (Rs. in Crores)
1.	Construction of Guest Room Block (G+4) (extension of GTAC) at IIT(BHU), Varanasi	14.50
2.	Construction of Director's Residence at IIT(BHU), Varanasi	1.92
3.	Supply, Installation, Testing and Commissioning (SITC) of 2 nos. 2x1600 KVA Compact Substations at IIT(BHU), Varanasi	4.80
	Total	**21.22**

List of works completed/carried out by IWD during the period from April' 2021 to March' 2022:

Sl. No.	Name of work
1.	Renovation of 8 Nos. of Bathroom Both Side in Ground Floor, First Floor, Second Floor & Third Floor in GSC Extension Hostel, IIT (BHU) Varanasi
2.	Water proofing treatment of roof and repairing of patch plaster work in Administrative Building and Defence corridor Building, IIT (BHU), Varanasi
3.	Annual Operation & Maintenance Contract for round the clock routine services, Preventive/Breakdown maintenance of 1 No.33/11kV PSS (with GIS panels & AIS), 7 Nos.11kV/433V DSS, all allied Substation systems (SCADA, Battery etc.) and HT/LT Services Line at IIT (BHU) campus, Varanasi
4.	Comprehensive annual maintenance contract of passenger lifts installed at LT-1 Lift no. 52NY5204, LT-2 Lift No. 52NY5206 and LT-3 Lift No. 52NY5202, GRTA Lift No. 52NY5203 & Mechanical Engg. Department Lift No. 52NT0098 in IIT (BHU) Varanasi
5.	Repair to patch plaster, scraping and Finishing wall with Acrylic Smooth exterior (Outer wall) of Mechanical Engineering, IIT (BHU), Varanasi
6.	Removing of old asbestos sheet and new P/F puff panel roofing, Vitrified tiles, plastering of wall, putty, aluminium partition work and distempering at Industrial Metallurgy Division (IMD) Hall-1 and Hall-2 at Department of Metallurgical Engineering, IIT (BHU), Varanasi
7.	Renovation of kitchen block including dismantling old window & door, P/F of uPVC window & panelled door, P/L Vitrified tiles, Plastering of wall, putty and distempering at Ground floor of S. C. De Hostel, IIT (BHU), Varanasi
8.	Renovation of kitchen block including dismantling old window & door, P/F of uPVC window & panelled door, P/L Vitrified tiles, plastering of wall, putty and distempering at Ground floor of Vishwakarma Hostel, IIT (BHU), Varanasi
9.	Renovation of toilet (Mess Side) and damaged sewer line of toilet both side of Rajputana Hostel, IIT (BHU), Varanasi
10.	Scraping repairing and painting of lecture theatre, roofs, corridors in GF & FF and painting of ABLT Building, IIT (BHU), Varanasi
11.	Demolishing and making of Plinth protection of Morvi Hostel IIT (BHU), Varanasi
12.	Providing and fixing acoustic wooden wall panelling and distempering work in Committee room and Director office in Administrative Building, IIT (BHU), Varanasi
13.	Repairing of walls of 40 No of rooms and lobby in Limbdi Hostel, IIT (BHU), Varanasi
14.	P/F uPVC and fly proof stainless steel in 12 Nos. of windows in GTAC, IIT(BHU), Varanasi
15.	Repair to Patch Plaster, Outer Exterior Painting (old work) in Department of Ceramic Engineering, IIT (BHU), Varanasi
16.	P/L Vitrified tiles flooring and painting of Refractory lab CR-104 & Lecture Theater-1 (LT-1) in Department of Ceramic Engineering, IIT (BHU), Varanasi
17.	Repair to patch plaster, Scrapping Putty Distempering Work in Corridor Area & Laboratory of Prof. V. K. Singh In Department of Ceramic Engineering, IIT (BHU), Varanasi
18.	P/L vitrified tiles flooring, false ceiling, aluminium windows shutter and Electrical works in Department of Electrical Engineering, IIT (BHU), Varanasi
19.	Electrical Work under the RKVY-RAFTAAR Scheme in the mezzanine floor of Incubator area, IIT(BHU),Varanasi
20.	Renovation of Warden's Quarter no. 1 & 2 at Visvesvaraiya hostel crossing, IIT (BHU), Varanasi
21.	Removing of old Asbestos Sheet & new P/F G.I profile sheet, repair of false ceiling and painting work of ID Lab of Main workshop, IIT (BHU), Varanasi
22.	Electrical Work in the E-Hall of Incubator area IIT (BHU), Varanasi
23.	Electrical installations and wiring in Bathroom, Mess and common area of S. C. De Hostel, IIT (BHU), Varanasi
24.	Electrical installations, Illumination and wiring works in laboratory space of control System Electrical Engineering IIT (BHU), Varanasi
25.	Electrical installation and wiring in Bathroom, Mess & Common area of Vivekanand Hostel IIT (BHU), Varanasi

32. Central Instrument Facility (CIF)

Overview: The central instrument facility (CIF) is equipped with sophisticated instruments to carry out characterization and analytical needs under one roof for both external and internal users from academia and industry. Our facilities are dedicated to preserving and improving the research efficiency of global standards. This facility is well-versed in exploring structural, morphological, thermal, surface and molecular properties for a wide range of nano or microscopic materials like metals, ceramic, polymers, biomaterials and composites etc. Apart from these, the centre is also extending facilities for trace analysis of metallic or non-metallic contaminants. Herein, each instrument is operating under expert faculty members of this institute. With these views-

"Our mission is to provide futuristic research infrastructure and quality education services in support of advanced instrumentation."

The CIF is providing the services to the users *via* an easy-to-use online booking system that requires minimal human participation.

Dr. Rajiv Prakash, Professor of Materials Science and Technology, leads the CIF with full-time professionals and scientific staff having their specific areas of expertise. In addition, Doctoral and PG students are also giving their expertise for the smooth operation of the instruments.

Approximate number of internal student's user of CIF facilities: 1970

Number of Institute Department/School user of CIF facilities: 14 Departments/Schools

Approximate number of students/researchers/Industries from outside the institute who have used the CIF facilities: 60 (this number is less due to pandemic year)

List of facilities in CIF:

(Additional facilities created in the current financial year may be separately highlighted) With the inclusion of a new facility in the current year, CIF has 19 instrument facilities which are tabulated below.

Sl. No.	Instruments
1	HR-TEM with EDS
2	HR-SEM with EBSD
3	SEM with EDS
4	Bench Top XRD
5	High Resolution XRD
6	MPMS
7	SPM
8	Ion Chromatography
9	Multi-function Tribometer
10	PCB Prototyping
11	FTIR
12	DSC
13	TGA
14	NMR
15	XPS with UPS
16	ICP-MS
17	BET (Surface area measurement)

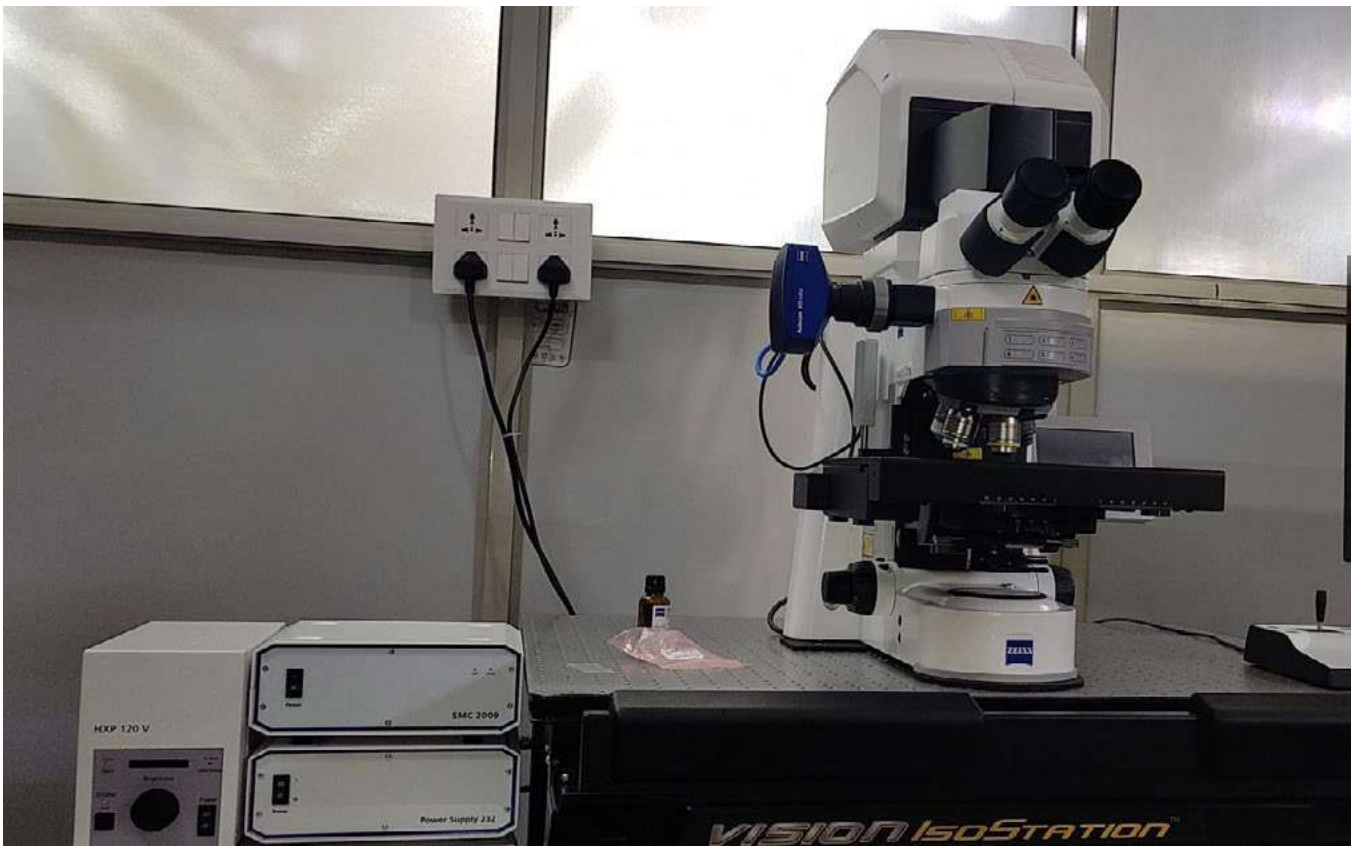
Sl. No.	Instruments
18	Tabletop SEM
Newly Created Facility, FY 2021-22	
19	Confocal Laser Scanning Microscope (CLSM)

These include morphological imaging of materials' surface resolution up to 5nm magnification range with elemental analysis. It covers a range of macro-to-micro materials of biological or non-biological types with the help of SEM, HR-SEM, HR-TEM and SPM. Room temperature or high temperature-based structural and thermal characterization is possible by XRD and TGA/DSC analyzer respectively. The functional and bonding environments of nearly all elements are possible to analyze by the combination of measurements based on FTIR, NMR and XPS systems. Magnetic properties of all types of magnetic materials are possible by MPMS. Wear properties of all materials are able to perform on multi-function tribometers based on both ball-on-disk and pin-on-disk methods. Surface active area with pore volume and its distribution of porous materials is also possible to analyze by BET measurement system. Complete ranges of trace analysis of WHO recommended contaminants are able to perform on ICP-MS and Ion chromatography. In addition, recently Confocal laser Scanning Microscope is introduced in order to observe the location of fluorescent moieties present in biological or any matrix system. Thus, instrumental facilities present herein are able to elaborate on any properties of concerned materials.

Key Instruments:

Confocal laser Scanning Microscope (CLSM): Confocal laser scanning microscopy is an optical imaging method that uses a spatial pinhole to block out-of-focus light in image generation to improve optical resolution and contrast of a micrograph of fluorescent materials.

Model: LSM 900 Company: Carl Zeiss Microscopy GMBH



33. Gandhi Technology Alumni Centre (GTAC)

Present Admin: Dr. Rajeev Kumar Singh (Coordinator)

About: Gandhi Technology Alumni Centre (GTAC) was established in 2007 with the financial help from the alumni of IIT(BHU) for the purpose of providing a stay to guests which includes alumni, employees, students etc. Since then it has been a long journey till now. It has developed a lot since then.

Facilities Available:

Total No. of Rooms: There are a total of 72 rooms in GTAC, which includes 4 suites and 68 rooms. All rooms are air conditioned and have basic facilities like TV, telephone, two beds, table and chairs etc.

Canteen: A canteen is also there to provide breakfast, lunch, dinner, tea, snacks etc. to the staying guest.

Programmes & Activities in GTAC:

- Provides stay to the Alumni and guests during alumni meet of IIT (BHU) alumni.
- Provides stay to the participants of QIP programmes of different departments of IIT (BHU).
- Provides stay to the participants of IIT cultural programmes like Spardha and KashiYatra.
- Provides stay to the participants of programmes like Technex.
- Provides stay to the parents of the students taking admission in IIT(BHU) or parents coming to meet their children.
- Provides stay to the friends and relatives of the IIT's faculty members and non-faculty members.
- Provides stay for the participants in the departmental programmes of IIT (BHU).
- BOG meetings and faculty recruitment interviews.
- Provided stay to Paramedical/Medical staff deployed in COVID 19 duty during August, 2020 to January, 2021.

Waiting Room

A waiting room is also there so that guests can meet someone or wait for the time being. Also it serves the purpose of a meeting room.

Hall or Conference room

A large hall is also there for conferences, meetings, seminars etc. for the student or faculty.

34. Main Workshop

Complete Name of Department: Main Workshop, IIT(BHU)

Year of Establishment: 1919

Professor In-Charge: Prof. Santosh Kumar, w.e.f. 07.09.2020

Brief Introduction of the Department:

IIT(BHU) Main Workshop aims ***to advance and diffuse such scientific, technical and professional knowledge combined with necessary practical training as is best calculated to help in promoting indigenous industries and in developing the material resources of the country.*** IIT(BHU) workshop was used to produce engineering items used in the production of machine tools – such as Lathe and other products like electric fans, etc. This unit provides technical assistance for the maintenance and fabrication of their needed items. It may kindly be noted that this unit is still supported by the teaching department, i.e., the Mechanical Engineering Department, in terms of machines and manpower, provides technical and on the job technical training to less privileged sections of the society. This would be making extra manpower available to the IIT for producing useful products and taking various kinds of maintenance work, thereby saving enormous amounts of money for the IIT. For example, new challenges of manufacturing and innovation are maintained by this workshop. The Precision Engineering Hub (PEH) services at IIT (BHU) is a central facility working 24x7 for concept design and product realization available for faculty & industry to develop new products. The processes of design, simulation and manufacturing are integrated in a digital environment through spaces like: Makers space, Designer space, Tool room & product Design and development spaces. The PEH facility also serves the professional course requirements of industries & MSME employees of various streams. It also provides infrastructure for sponsored research and industrial consultancy. The PEH houses state of the art CAD and CAM tools with latest capabilities in shape acquisition, modeling and prototyping. The facility is chargeable to have a helping hand in radically expanding the domain of geometric shapes that can be realized for any product.

Major areas of Research/Work:

1. Training to B.Tech. Part-I students of all branches and B.Tech. Part-II Mech. Engg. Students to expose them to various manufacturing practices and processes.
2. Providing facilities for fabrication involved in project work to all the engineering students.
3. Helping students by fabricating the models and equipment for research.
4. Helping students by way of fabricating the models for Institutional Tech. Fest & Department fest like: Technex, Comet, etc.
5. Helping students in shaping the product that comes out of their creative & innovative thinking.
6. There have been many new initiatives in recent times: Precision Engineering Hub, TinkerLab. startup etc.
7. Precision Engineering Hub facility.

Area of the Department/School (in square meters): 3245.33 m^2

Infrastructure

Sl. No.	Particulars	Number
1	No. of Classrooms	NA
2	No. of Lecture Halls	NA
3	No. of Laboratory / Workshop	11 Nos.+ 1 Hub
4	No. of Computers available for students in the Department/School	NA

Unique Achievement / Preposition of the Department/School – New Precision Engineering Hub.

Academic Programmes offered New Courses Introduced

Sl. No.	Course Code	Course name	Course credit
1	ME-105	Manufacturing Practice (Offered by Dept. of Mechanical Engineering and conducted by Main Workshop).	03
2	ME-106	Manufacturing Practice (Offered by Dept. of Mechanical Engineering and conducted by Main Workshop).	03

Technical and Non-Teaching Staff

Sl. No.	Name	Qualification	Designation	Emp. No.	Date of appointment in Dept.
1	Shri Basudeb Rajak	M. Tech. (Production Engineering)	Senior Technical Officer	18836	23.09.2009
2	Shri Lal Bahadur Singh	High School, ITI Moulder	Senior Technical Superintendent	13623	24.11.1983
3	Shri Lakhmi Chand	B.A., Diploma in Mechanical Engg.	Senior Technical Superintendent	18031	07.02.2007
4	Shri Arvind Kumar Singh	Intermediate, Diploma in Mechanical Engg.	Technical Superintendent	18669	12.08.2008
5	Shri Shri Kumar	B.A., One year Diploma in Carpentry	Technical Superintendent	13628	08.01.1997
6	Shri Bed Prakash Singh	B.A., Diploma in Mechanical Engg.	Technical Superintendent	19266	12.02.2011
7	Shri Chandra Mohan Singh	High School, Diploma in Mechanical Engg.	Technical Superintendent	19627	22.02.2011
8	Shri Ravi Shankar Singh	Intermediate, Diploma in Mechanical Engg.	Technical Superintendent	19268	23.02.2011
9	Shri Mahendra Kumar	Intermediate, Two year Diploma in Carpentry & Pattern Making	Technical Superintendent	13626	08.01.1997
10	Shri Bhola Nath	High School, ITI Moulder	Technical Superintendent	11561	17.02.1988
11	Shri Vikarama Prasad	High School, One year Diploma in Carpentry	Technical Superintendent	13633	12.10.1988
12	Shri Jagdish Prasad	High School, One year Diploma in Carpentry	Technical Superintendent	13632	12.10.1988
13	Shri Lal Prakash Singh	B.Com., One year Diploma in Moulder	Technical Superintendent	13631	12.10.1988
14	Shri Tej Bahadur Singh	Intermediate, ITI Wireman	Technical Superintendent	13634	12.10.1988
15	Shri Dilip Kumar Sharma	M.A., ITI Welder, ITI Wireman, Diploma in Mechanical Engg.	Junior Technical Superintendent	18502	20.02.2007
16	Shri Sunil Kumar	B.A., ITI Machinist	Junior Technical Superintendent	18032	20.02.2007
17	Shri Chandra Bhusan	M.Com., ITI Electronics	Junior Technical Superintendent	18070	26.02.2007
18	Shri Vijay Kumar	Intermediate, ITI Motor Mechanic	Junior Technical Superintendent	18051	20.02.2007
19	Shri Santosh Kumar Maurya	Intermediate, ITI Electrician	Junior Technical Superintendent	18044	20.02.2007
20	Shri Vijay Kumar Singh	Intermediate, ITI Welder, Diploma in Mechanical Engg.	Junior Technical Superintendent	18040	20.02.2007

Sl. No.	Name	Qualification	Designation	Emp. No.	Date of appointment in Dept.
21	Shri Jagdish	High School, ITI Carpentry	Junior Technical Superintendent	18675	06.08.2008
22	Shri Gopal Kumar Kharwar	Intermediate, ITI Electronics	Junior Technical Superintendent	18646	06.08.2008
23	Shri Bilu Guria	High School, ITI Welder	Junior Technical Superintendent	18666	06.08.2008
24	Shri Brijesh Kumar Sharma	Intermediate, ITI Fitter	Junior Technical Superintendent	18664	06.08.2008
25	Shri Kunwar Bahadur	High School, ITI Wireman	Junior Technical Superintendent	18670	06.08.2008
26	Shri Rajendra P. Vishwakarma	Intermediate, ITI Foundry	Junior Technical Superintendent	18606	06.08.2008
27	Shri Anil Vishwakarma	M.A., ITI Welder, ITI in Electroplating	Junior Technical Superintendent	18604	06.08.2008
28	Shri Ashwani Kumar Tiwari	Intermediate, ITI Machinist, Apprenticeship, Diploma in Mechanical Engg.	Junior Technical Superintendent	18676	05.08.2008
29	Shri Bipin Kumar Rai	Intermediate, ITI Fitter	Junior Technical Superintendent	18665	14.08.2008
30	Shri Vinay Kumar Singh	Intermediate, ITI Fitter, Diploma in Mechanical Engg. Certificate in Adv. CNC & Autocad	Junior Technical Superintendent	18672	19.08.2008
31	Shri Banarasi Rao	Intermediate, ITI Refrigeration & AC	Junior Technical Superintendent	18667	08.08.2008
32	Shri Karun Vishwakarma	Intermediate, ITI Machinist & Grinder	Junior Technical Superintendent	18607	05.08.2008
33	Shri Jitendra Kumar	High School, ITI Turner	Junior Technical Superintendent	18663	07.08.2008
34	Shri Vijay Kumar Singh	Intermediate, ITI Automobile	Junior Technical Superintendent	18603	06.08.2008
35	Shri Ravindra Kumar	Intermediate, ITI in Motor Mechanic	Junior Technical Superintendent	18602	06.08.2008
36	Shri Ajay Kumar Yadav	Intermediate, ITI Turner	Junior Technical Superintendent	18605	11.08.2008
37	Shri Gopal Krishna Shukla	B.Sc.-IT, M.Sc.-CS, ITI Instrumentation	Junior Technical Superintendent	18668	14.08.2008
38	Shri Shivendra Tiwari	Intermediate, Diploma in Mechanical Engg. & Apprenticeship from DLW	Junior Technical Superintendent	18615	06.08.2008
39	Shri Dheelip Kumar B.	High School, ITI Machinist & Apprenticeship	Junior Technical Superintendent	18671	13.08.2008
40	Shri Gopal Rana	Junior High School, Diploma in Electrician & Motor winding	Senior Technician	19274	10.02.2011

Design and Development Activities New facilities added

Sl. No.	Details (Infrastructure, Equipments, etc.)	Value (in Lakhs of Rupees)
1	Fully Automatic Plastic Injection Moulding Machine	31,84,650.00
2	HP Workstation	1,65,000.00
3	Carrier 2 Ton Air conditioner with stabilizer 5KVA	2,99,014.00
4	30 KVA online UPS	3,65,265.00

Sl. No.	Details (Infrastructure, Equipments, etc.)	Value (in Lakhs of Rupees)
5	Lead Acid Battery 12.0 volt	4,39,640.00
6	Lubricated Air Compressor Three Phase 500 L	3,41,001.00
7	CO_2 Type Fire Extinguisher 4.5 kg	32,400.00
8	Argon gas cylinder	1,96,500.00

Activity at The Institute Level:

1. Inspecting the furniture supplied to the different hostels of IIT (BHU).

2. Providing facilities and also the technical know-how for development of industrial and innovative products.

Activity to Outsiders:

1.Training to the students of other engineering colleges.

2.Providing processing and production facilities to outsiders.

3.Providing Summer Training to the undergraduates of different Engineering Colleges.

Video Library Facilities:

30 Nos. of Video CDs related to Power Hand Tools, Welding, CNC, Foundry, Carpentry, Mechanical Engineering, manufacturing techniques & Safety are available in the Workshop for instruction to the students of B. Tech during workshop practice classes.

Key Instruments:

CNC Vertical Machining Centre - 3 Axis (Train Master) and CNC Turning (Production Type)

CNC Vertical Machining Centre -5 Axis (Train Master), CNC Turning (Train Master) and Precession Lathe Machine (Conventional Type)

Markforged Model X-7 Fiber Composite 3D Printer

High Strength Colour Polymer 3D Printer Model HP-MJF-580

35. Finance and Accounts

INDIAN INSTITUTE OF TECHNOLOGY (BHU), Varanasi

INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31st MARCH 2022

Amount in Rupees

Particulars	Schedule	Current Year	Previous Year
INCOME			
Academic Receipts	9	59,87,81,798	44,98,73,300
Grants / Subsidies	10	2,17,39,07,850	1,96,89,92,063
Income from Investments	11	9,95,81,707	10,63,93,660
Interest earned	12	3,86,729	3,21,737
Other Income	12	65,05,29,924	76,89,64,281
Prior Period Income	14	-	-
TOTAL (A)		**3,52,31,88,008**	**3,29,45,45,041**
EXPENDITURE			
Staff Payments & Benefits (Establishment exp.)	15	1,67,38,96,685	1,62,83,36,785
Academic Expenses	16	45,05,64,014	42,31,48,423
Administrative and General Expenses	17	51,62,56,824	25,08,96,292
Transportation Expenses	18	10,26,326	10,76,094
Repairs & Maintenance	19	5,55,59,584	7,35,71,875
Finance Costs	20	5,98,50,047	89,81,530
Depreciation	4	36,06,55,483	41,37,81,81,525
Other Expenses	21	-	-
Prior Period Expenses	22	-	-
TOTAL (B)		**3,11,78,08,963**	**2,79,97,92,524**
Balance being excess of Income over Expenditure (A-B) Transfer to/ from Designated fund		40,53,79,045	49,47,52,517
Balance being Surplus (Deficit) Carried to Capital Fund		40,53,79,045	49,47,52,517

INDIAN INSTITUTE OF TECHNOLOGY (BHU), Varanasi

BALANCE SHEET AS AT 31.03.2022

Amount in Rupees

SOURCE OF FUNDS	Schedule	Current Year	Previous Year
Corpus/Capital Fund	1	6,98,41,57,571	5,99,23,41,627
Designated / Earmarked Funds/Endowment Funds	2	1,50,23,05,715	1,36,0158,929
Current Liabilities & Provisions	3	5,82,03,69,535	4,94,28,46,014
TOTAL		**14,30,68,32,821**	**12,29,53,46,570**

APPLICATION OF FUNDS	Schedule	Current Year	Previous Year
FIXED ASSETS	4		
Tangible Assets		2,61,52,29,797	2,23,30,89,371
Intangible Assets		5,67,45,148	44,01,132
Capital Work-In-Progress		1,30,23,66,316	96,28,20,214
INVESTMENTS FROM EARMARKED / ENDOWMENT FUNDS	5		
Long Term		16,63,32,302	12,65,79,848
Short Term		-	-
INVESTMENTS – OTHERS	6	5,03,60,16,151	4,06,57,45,801
CURRENT ASSETS	7	4,42,92,31,987	4,01,72,18,264
LOANS, ADVANCES & DEPOSITS	8	70,09,11,120	88,54,91,940
TOTAL		**14,30,68,32,821**	**12,29,53,46,570**

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दशम दीक्षांत समारोह
रविवार, अप्रैल १०, २०२२
10th CONVOCATION
Sunday, April 10, 2022


IIT
(BHU)
VARANASI


रविवार, अप्रैल १०, २०२२
10th CONVOCATION
Sunday, April


दशम दीक्षांत समारोह
ONVOCATION


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