Bid Number: GEM/2026/B/7718129
Dated: 10-07-2026

Bid Corrigendum

GEM/2026/B/7718129-C3

Following terms and conditions supersede all existing “Buyer added Bid Specific Terms and conditions” given in the bid document or any previous corrigendum. Prospective bidders are advised to bid as per following Terms and Conditions:

Buyer Added Bid Specific Additional Terms and Conditions

1. OPTION CLAUSE: The Purchaser reserves the right to increase or decrease the quantity to be ordered up to 25 percent of bid quantity at the time of placement of contract. The purchaser also reserves the right to increase the ordered quantity up to 25% of the contracted quantity during the currency of the contract at the contracted rates. The delivery period of quantity shall commence from the last date of original delivery order and in cases where option clause is exercised during the extended delivery period the additional time shall commence from the last date of extended delivery period. The additional delivery time shall be (Increased quantity ÷ Original quantity) × Original delivery period (in days), subject to minimum of 30 days. If the original delivery period is less than 30 days, the additional time equals the original delivery period. The Purchaser may extend this calculated delivery duration up to the original delivery period while exercising the option clause. Bidders must comply with these terms.
2. Buyer uploaded ATC document Click here to view the file.
3. Buyer Added text based ATC clauses

Corrigendum

Technical Specification

1. Name of Equipment: Technical Specifications of Field Emission Scanning Electron Microscope with Cryo-attachment

Sr. No.	Parameters / Features	Description
1.	**Resolution**	**SE resolution:** 0.7 nm or better @ 15 kV **SE resolution:** 1.2 nm or better @ 1 kV **LV resolution:** 1.3 nm or better @15 kV All resolutions to be achieved with/without stage bias so that the sample properties and characteristics do not get manipulated/destroyed. **(All the resolutions need to be demonstrated during installation.)**

2.	**Electron Gun**	Schottky field Emitter with Automatic Emitter Run-up: Safe con trolled run-up of the target emitter conditions. Minimum life or warranty for 5 years. In case of failure or any d eterioration in image quality (**Each year from the day of ins tallation of the system, the image quality will be check ed and compared with image taken during the installati on in the presence of personal from CIF, IIT (BHU) and a pplication specialist /engineer from vendor, regarding i mage quality IIT (BHU) 's decision will be considered as final**) of 5 years, it has to be replaced free of cost, as and whe n required. During changing of emitter within warranty period if any gaske t o-ring, aperture, or any special part is needed, all the parts m ust be covered within warranty.
3.	**Magnification**	Min 20 X or lower and max 20, 00,000X or higher, standard sa mple for calibration of SEM resolution and magnification should be provided.
4.	**Acceleration V oltage**	**Lower limit:** 20V or less, **Higher limit:** 30KV or higher variable in 10 Volt steps to set up the AV to any value requeste d for the various applications.
5.	**Chamber**	Large chamber to accommodate a sample diameter of 100 m m or more. with at least 10 accessory ports or more for various detectors, including Cryo stage, EDS, EBSD, WDS, STE M LV detector, etc., with single and multi-stage specimen hold er, manual or automatic movements. FESEM chamber should be compatible to Cryo attachment. Nitrogen gas cylinder with a suitable regulator to be provided or a desiccator.
6.	**Stage**	5 axis motorized Eucentric or Compucentric stage with stage movements X= 100 mm or more Y= 100 mm or more Z= 50 mm or more Tilt= min-4 or lower to +70° or more R= 360° continuous
7.	**Electron Optics**	· Column built-in Beam Deceleration/Beam Booster tec hnology for high-resolution imaging at low KV. · Objective lens should be a combination of Electrostati c and magnetic/ Hybrid lens to image a variety of samp les, especially the magnetic specimens at high resoluti on. · High-resolution imaging of dia-, para-, or ferromagneti c samples with working distance of 4mm or better. · Compact column design, integrated Metal shielding to limit sensitivity to stray fields or parallel beam optics fo r maximum ease of use. · The lens system should be cooled by water or air for e fficient thermal neutralization. The aperture control should be automatic through the software or manual. FESEM should have auto beam alignment features, in addition to focus and brightness. able to image a magnetic sample at low working distance.

8.	**Auto Functions**	Automatic Focus Wobble: For automatic assistance in aperture alignment, with adjustable amplitude and speed. Automatic contrast & brightness control Automatic correction of image compression on tilted samples Auto-compensation: Automatic magnification correction for change in working distance or acceleration voltage
9.	**Probe Current**	At least 100nA or higher The current stability has to be better than 0.2 %/hour.
10.	**Detectors**	**a)** Chamber SEI detector. Everhart-Thornley secondary electron detector with optically coupled photomultiplier **b)** In-Lens SEI detector/In column detector or equivalent detector for high resolution imaging in High Vacuum. **c)** Separate dedicated In-lens/ In-column BSE detector or equivalent detector. **d)** Chamber mounted /Pneumatic retractable directional solid-state BSE-direction detector with minimum 4 sectors and one additional segment, or with 6 sectors in annular shape available. Should enable materials contrast, crystal orientation, and topographic imaging. **e)** A colored CCD camera with illumination to allow an overview of the internal chamber. Mixing different signals must be possible at any ratio. EDS detector, as per serial no. 19. LV detector or equivalent detector for low vacuum microscopy. Retractable STEM detector. Provision for cryo stage attachment
11.	**User Interface**	Keyboard, Mouse, Control Panel with multifunction for the control and adjustment of frequently used SEM parameters, Manual Joystick control for stage axis.
12.	**Display**	27 inch or larger monitors with a suitable computer workstation for FESEM
13.	**Image Store**	16K×16K pixel or better in a single frame.
14.	**Display Modes**	**Split Screen:** Side by side live display with most scan-rates and image resolutions of the same image using the input from any combination of installed detectors. Image halves may be selectively processed and frozen. **Quad mode:** Side by side live display, on a single monitor, of the same field of view using input from up to four detector channels. Images may be selectively processed and frozen.
15.	**Scanning System**	The system provides different noise reducing acquisition methods. • Pixel averaging acquisition • Frame/Line averaging acquisition • Drift corrected frame averaging acquisition
16.	**Vacuum System**	Suitable vacuum system having ion pump, Turbo Pump & Oil Free Rotary Pump. The SEM will have a fully automatic control of its vacuum system and High vacuum in the chamber must be better than 3.0 x 10^{-4} Pa. The system must have variable pressure range of 300 Pa or better with detector. The system should have an integrated plasma cleaner to keep the chamber clean and clean the samples and the same should be controlled by the GUI of FESEM.

17.	**Accessories**	**a)** Chiller. **b)** Compressor. **c)** Integrated Control panel for adjustment of various SEM functions like focus, mag etc **d)** Interface between SEM and EDS. **e)** Joystick for stage motor control **f)** Specimen Current Monitor with integrated Touch Alarm **g)** One entire aperture set for column to be supplied. **h)** 5 nos of Carbon tape **i)** Suitable FESEM quality Gold coater with vacuum pump, with two additional Gold Pd target. **j)** Appropriate sample holder to accommodate 8 or more s amples at time. **k)** 50 nos of sample stubs **l)** Cross sectional sample holder - 1no **m)** Multipurpose sample holder - 1 no.
18.	**Computer**	The SEM will be controlled by a high-grade PC having an Intel C ore i5 or higher processor or equivalent. The operating system is Windows 10 or higher version. Min 64 GB RAM, Min 1TBSSD f or OS, and Min 1TB HDD for storage, Min 4 GB graphics card. External communications and networking are provided as stan dard.

19.	**EDS Detector**	The EDS system should be the very latest, state-of-the-art system, which should seamlessly get integrated with the proposed SEM system. The EDS detector should be SDD type, having a detector area of 70 mm^2 area or more. The detector window should be made of a robust material and with a honeycomb grid/square grid structure to increase low-energy X-ray transmissivity. Detector movement should be motorised with manual or software control. The Energy resolution should be 126 eV or better on Mn-Kα, which is to be guaranteed at the site. Carbon resolution of 46 eV or better, F resolution 56 eV or better. The EDS detector should be able to handle a high input count rate of at least 1.4 Micps or better, and throughput should be 800 kcps. The detector must guarantee the detection of Al L of 73 eV and Si L line at 92 eV. The Detection Range of the detector should be Be (4) to U (92). The EDS should be able to do quantitative and qualitative analysis. The EDS software must have the software functions like area mapping, point and line scan, multipoint scan, drift correction, Phase mapping and live/real time elemental mapping/live spectrum. The EDS should be capable of performing point analysis and quantitative analysis with ZAF correction. A software module for eliminating elemental contribution from peak overlap should be available. Remote Scan Control, Beam Control and Acquisition Package, Electron Microscope Interface, Stage Software, Column Software, and Analyzer should be provided. Separate workstation must be provided with a Pentium processor of greater than i7 or better, 64GB RAM, a DVD writer, sufficient USB ports, and compatible operating system to operate FF SEM and all attachments and 24-inch-display unit or larger. Platform should be windows 10 or better Standard sample for energy calibration, single element, and database for a specified range of elements to be provided. The offered EDS detector should be compatible with the WDS, EBSD system mentioned in the Tender as an option.
20.	**UPS**	20 KVA online UPS with isolation transformer for the complete system, min 2 hour backup.
21.	**Warranty**	5 Year from the date of successful installation and commissioning warranty from the date of successful installation and commissioning on whole system. In case, the machine is down for more than 1 week during the warranty period, number of days accordingly should be compensated by providing additional extended warranty free of cost.
22.	**Installation, Commissioning & Training**	The installation, commissioning, and demonstration of the complete system to be carried out by the supplier at free of cost. After successful installation and commissioning, on-site operational training for the deputed personnel to be provided twice for the required days (7 to 10 days) at no additional cost.
23. Cryo SEM preparation system to be interfaced with the FESEM - Essential Specifications		

A.	**SEM Cold stage**	Liquid Nitrogen / Nitrogen gas cooled cold stage, operating te mperature, ambient to -190 °C. Liquid Nitrogen/Nitrogen gas cooled upper and lower cold trap s -190°C. Temperature stability: + /- 0.5°C A suitable arrangement to observe the stage from outside.
B.	**Cooling system**	Off-column Cryo Heat Exchanger (CHE) with 60 litre LN2 dewar for maximum 24-hour operation (two gas lines)
C.	**Preparation chamb er**	A dedicated preparation chamber directly interfaced with the F ESEM. Stainless steel vacuum connection to the preparation chamber Turbo-molecular pumped cryo preparation chamber Integrated gate valves with interlock to prevent accidental ope ning. Sufficient viewing windows on top and side and front, with Mult iple LED illumination and CCD camera. Large front window (15 0 mm x 75 mm) with 2 top viewing ports. Automated, fine grain sputtering with Platinum (Pt) target with one additional Pt target with thickness monitor. Cold fracturing: Front mounted fracturing and manipulation de vice Chamber should be pumped independently by vibration-free T MP. Minimum Vacuum level with rotary pump of $5m^3/hr$ Ambient: 10^{-5} mbar Cold: 10^{-7} mbar
D.	**Sample holder and stubs**	Sample Holder: To accept 10 mm stubs (2 nos.) Suitable specimen stub of various sizes with suitable transfer r od, and all necessary accessories for biological sample cryo-pr eparation. Accessories for cryo-attachment and cold stage including LN2 c ontainer (60 L), Nitrogen Cylinder with regulator, Oil free air co mpressor units, N2 generator (12 L/hr, or better with purity of 99.999%) unit pressurized with suitable size trap mechanism to eliminate moisture and chilled water unit. Liquid nitrogen freezing and specimen handling system.
24.	**Spares**	Availability of spares has to be assured for 10 years from the d ate of Installation.
Optional Attachments (Procurement of optional Items will depend on the availability of funds)		

1.	**EBSD Detector** (to be quoted optional)	The EDS and EBSD should work on same software platform for ease of operation. The EBSD camera system should be CMOS based with 2000 Index points per seconds or more with indexing success rate of 99% or better. The system should have the assessment of accuracy of Indexing. The EBSD should be optimized for low –kV data application while working with SEMS; camera should have motorized insertion and retraction mechanism. The position accuracy is to be 0.1mm or better. Optimized phosphor screen for high speed and high sensitivity collection. The camera should have hexagonal/ square scanning grid or equivalent technique to minimize grain shape artifacts, and also to provide consistent distance between neighbouring pixels which is Important for local misorientation analysis of deformed materials. The camera must facility imaging the sample. Imaging detector must be provided for imaging. The camera should have imaging detectors to acquire images with atomic, orientation, channelling contrast; The system software should include following features: (i) Data Acquisition Software (ii) Phase Reflector File Creation Software (iii) Pole Figure Software (iv) Mapping Software (v) ODF Software (vi) Imaging and Beam Control Software (vii) Stage Control Software (viii) Phase Identification Software. EBSD software should have features like dynamic camera optimization. The EBSD software must have a provision to check whether a point has been correctly indexed or not (accuracy of Indexing), even it should be able to provide whether multiple solutions are available for that point. 1 pretilt sample holder for EBSD analysis, 2 additional offline EBSD analysis software. One standard sample for EBSD should be provided.
2.	**WDS detector** (to be quoted optional)	**1.** The WDS system should integrate with the EDS system to offer combined EDS+WDS analysis. **2.** Automatic positioning of the WDS optics for accurate quantification measurements. WDS spectrometer should be able to cover the entire range of the spectrometer from 150 eV to 10 KeV so that it covers the range of B (5) to U (92) elements. **3.** The WDS detector must have a Parallel Beam spectrometer to ensure maximum count rates. **4.** WDS must have flat crystals for better stability. **5.** WDS should be mounted on the SEM chamber without modifying it in order to get a maximum number of ports for future upgrades. **6.** The WDS detector should have a turret with five crystals **7.** Pure element standards for at least 55 elements or standard for entire range of elements should be included **8.** No toxic material should be used in the WDS system. **9.** one standard sample should be provided
3.	**Warranty** (to be quoted optional)	2 year Extended Warranty

Other Terms

1. All equipment must be compatible with Indian electrical standards and codes. Engineering documentation on the physical sizes and weights of all major and minor components must be submitted.

2. The Institute reserves the right of accepting or rejecting any/all quotations without assigning any reason thereof.

3. All prices should be **DDP** (Delivered Duty Paid) Central Instrument Facility (CIF), Indian Institute of Technology (BHU), Varanasi.

4. Installation by Factory Trained Service Engineer is mandatory.

5. The bidder must submit a certificate on their letter pad clearly stating that they have not quoted lower rate to any government organization/ PSU/ autonomous bodies/ IITs/NITs etc. what they have quoted for IIT (BHU) against this tender. Please note that if at any point of time it is found that the submitted certificate is falsified the bid will be rejected.

6. Price of the facility should be quoted in INR Only **(Indian Rupees).**

7. Customs clearance at the port of entry shall be the responsibility of the supplier. IIT (BHU) will provide the duty exemption certificate (if applicable) and make customs duty payment directly to the Customs Department upon receipt of BoE, challan, and relevant documents.

8. **Penalty:** A penalty of 1% of the order value will be applied for late delivery of the goods for each week thereof subject to a maximum of 10%.

9. **Bank Guarantee (BG):** Successful bidder have to furnish **03%** of the order value as a performance security in the shape of Fixed Deposit Receipt / Bank Guarantee in favour of the Registrar, Indian Institute of Technology (BHU) Varanasi which will be valid for a period of sixty days beyond the date of completion of all contractual obligations of the supplier including warranty obligations. Fixed Deposit Receipt / Bank Guarantee should be issued from a schedule bank in India. Bank guarantee is only applicable for the Supplier who will get the Award of Contract and will submit at the time of installation of the instrument.

10. **Payment:** The payment shall be made 100% payment against Supply, Installation and Commissioning and submission of satisfactory PBG.

11. The bidder must be authorized by the respective OEM to supply, install and maintain the system. The Tender should be enclosed with proper certifications like **Authorization Certificate and Proprietary Certificate,** in case of Proprietary items.

12. Warranty period to be clearly mentioned and should begin from the date of installation. Annual Maintenance Contract Charges should be clearly mentioned after warranty period. Three years comprehensive warranty. In case, the machine is down for more than 1 week during the warranty period, number of days accordingly should be compensated by providing additional extended warranty free of cost.

13. The vendor to provide compliance statement with respect to each technical specification in the tender document duly supported by the manufacturer’s literature. Any other claim will not be accepted and may lead to rejection of the bid.

14. Technical evaluation by the Institute may include demonstration to verify functionalities and capabilities of the system quoted.

15. List of similar items installed during last five years in India with Contact person name, address and phone number, email id must be specified. The vendor should preferably have supplied and installed at least 20 similar/equivalent pieces of equipment in last five years.

Updated ATC is publish with in and the same is also available in Institute Portal for ready reference.

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Disclaimer

The Additional Terms and Conditions (ATC) have been incorporated by the Buyer after approval of their Competent Authority. The Buyer ,is solely responsible for the impact of these clauses on the bidding process, its outcome, and consequences thereof including any restriction arising in the bidding process due to these ATCs and including the modification of technical specifications and / or terms and conditions governing the bid.All representations / grievances pertaining to the ATC clauses shall be raised with the buyer organization directly and not with GeM.If any of the clause(s) is/are incorporated by the Buyer regarding the following, the bid & resultant contract shall be treated as null & void. Further, GeM reserves the right, at its sole discretion, to cancel the bid forthwith, without issuance of any prior notice or intimation :-

1. Publishing Custom / BOQ bids for items for which regular GeM categories are available (unless such Custom / BOQ item is bunched with the major regular product Category Item).
2. Mandating procurement of / from specific Brand / Make / Model / Manufacturer / Dealer except in case of Single Bid / Proprietary Article Certificate (PAC) Buying.
3. Inclusion of disqualification criteria related to suspension of seller / service provider, where such suspension period has already expired.
4. Mandating submission of documents in physical form as a pre-requisite to qualify bidders.
5. Publishing bids on GeM for procurement of works.
6. Procurement of Goods by creating a Service bid on GeM & vice-versa.
7. Seeking sample with bid or approval of samples during bid evaluation process. However, trial / sample, as the case may be, shall be permitted in cases where trial / sample are allowed as per approved and published procurement policy of the Buyers' controlling Ministry / Department / State / Public Sector Enterprises Headquarters. If there is any violation of trial / sample clause with regard to approved policy of the Buyers' Ministry / Department / State / Public Sector Enterprises Headquarters, then this is to be determined and redressed by the concerned Buyer Organisation only.
8. Seeking experience from specific organization / department / institute only or from foreign / export experience.
9. Creating bid for items from incorrect categories.
10. Reference of conditions published on any external site or reference to external documents/clauses.
11. Asking for any Tender fee / Bid Participation fee, as the case may be.
12. Buyer added ATC Clauses which are in contravention of clauses defined in bid detail section, including specifications, EMD Detail, ePBG Detail and MII and MSE Purchase Preference sections of the bid, unless otherwise allowed by the applicable GeM GTC.
13. Any ATC clause in contravention with GeM GTC Clause 4 (xiii) (h) will be invalid. In case of multiple L1 bidders against a service bid, the buyer shall place the Contract by selection of a bidder amongst the L-1 bidders through a Random Algorithm executed by GeM system.
14. In a category based bid, adding additional items, through buyer added, additional scope of work/ additional terms and conditions/or any other document. If buyer needs more items along with the main item, the same must be added through bunching category based items or by bunching custom catalogues or bunching a BoQ with the main category based item, the same must not be done through ATC or Scope of Work.

Further, if any seller has any objection/grievance against these additional clauses or otherwise on any aspect of this bid, they can raise their representation against the same by using the Representation window provided in the bid details field in Seller dashboard after logging in as a seller. Buyer is duty bound to reply to all such representations and would not be allowed to open bids if he fails to reply to such representations.

*This document shall overwrite all previous versions of Bid Specific Additional Terms and Conditions.

This Bid is also governed by the General Terms and Conditions