



भारतीय
प्रौद्योगिकी
संस्थान
काशी हिन्दू विश्वविद्यालय



INDIAN
INSTITUTE OF
TECHNOLOGY
BANARAS HINDU UNIVERSITY

SCHOOL OF MATERIALS SCIENCE AND TECHNOLOGY

QUOTATION ENQUIRY

Ref: IIT (BHU)/SMST/CR/IFP/2015-16/ENQ/QTN/6

Date: January 12, 2016

(Date of tender enquiry)

Due Date: 4PM, 2nd February, 2016

(Last date of quotation receiving)

Dear Sir,

Please submit your lowest rate for supplying the under mentioned items (**in hard copy in sealed envelope**). It must be ensured, before submission of the quotations that each and **every submitted paper has been signed and the seal of the firm affixed**. Quotation in duplicate must reach us before the date marked above and should contain the following information

1. Full specification and make of the item offered and its rate F.O.R. Varanasi/CIF New Delhi.
2. Sales tax at concessional rate as applicable to educational institution.
3. Your VAT / CST registration number, PAN & TAN numbers.
4. Conditions of supply and terms of payment.
5. If you are a manufacture of the item or if you have proprietary right over it, please mention it in the quotation and provide a certificate.
6. Please mention your agency commission in Indian Rs., if applicable (in case of imported items).
7. Please give an undertaking as per annexure-I-B.
8. Further, if you want to quote any additional features, you are suggested to use a separate sheet.

Quotation must be sent in a **sealed envelope** with word “**QUOTATION**”, our reference number, and due date as given above, clearly marked over it.

Sl. No.	ITEM	Approx. Qty.
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	<u>Technical Specifications for Electron Beam with Thermal Evaporation Deposition System</u>	01 No.
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- **Vacuum Coating unit**

- Chamber with water cooling of approx. 450mm (W) X 450mm (D) X 550mm (Ht) dimension
- Front opening door for smooth loading and unloading of substrates
- Toughened glass view port on front door compatible with high vacuum
- Set of thin Stainless steel sheet liner to prevent the deposition on chamber wall
- Chamber with proper number of ports for Oil Diffusion pump, Rotary pump, gauges, evacuation, gas feeding valves, vacuum monitoring gauge heads etc
- Chamber having all stainless steel components and sub-assemblies must be electro-chemically polished
- Direct drive Rotary vacuum pump, 250 lit/min or more giving vacuum of 1×10^{-3} mbar or better under no load condition
- Oil Diffusion pump, 700 lit/sec or more giving vacuum of 1×10^{-6} mbar or more with Cryo trap
- Stainless steel Plumbing lines
- Provision for Turbo pump fixing

- Mechanically interlocked 3 way combination valve for backing and roughing operation
- Manually operated butterfly valve to isolate Oil Diffusion pump
- Pirani and Penning Gauge with 2 Nos. of Pirani sensors & 1 Nos. of Penning sensor for monitoring vacuum in combined range 1×10^{-3} to 1×10^{-6} mbar of chambers with analog display
- HT/IB Cleaning for an uniform glow discharge
- Manual operated source shutter to cover Thermal evaporation / E beam source
- Fine control needle valves for admittance of gas into the vacuum chamber
- Circular work holder of aluminum having min 300 mm or more diameter
- Digital panel meters for LT/HT primary current and LT secondary current
- Unit operation with 220 V A.C, 50 Hz, Single phase power supply, 15 amps supply
- Thermostat switch for protection of oil diffusion pump
- Safety panel switches to cut off HT/LT/RH power supply, if doors open
- UI mate vacuum~ 1×10^{-6} mbar or better
- Housing Cabinet
 - With a front panel for mounting gauges, controls for thermal or E beam deposition operation, Substrate heater control, Rotary drive control for comfortable operation
 - Valve control knobs on front panel
 - Mounted on a 4 castor wheels for mobility and easy maneuverability
- **Thermal evaporation electrical feed through and evaporation source made of electrolytic pure copper, (LT and HT Evaporations) 200 amps or more current capacity delivering different power supply**
 - Thyristor controller for output power
 - Separate digital panel meter for LT Secondary current
- **Electron Beam Gun, four pocket with 180° - 360° E beam, 3 KW or more with single phase power supply**
- **Safety Devices**
 - Safety panel switches to cut off source power supply, if doors open
 - Vacuum switch interlocked with source power supply for avoiding switching-ON of power sources without vacuum
 - Electrical circuit breaker against Overload or Shorting
 - Overload protection for Rotary and Oil Diffusion pumps

Optional Accessories Required for Electron Beam with Thermal Evaporation Deposition System

- Compact Water Chiller Unit with Re-circulating pump, Storage tank, Valves gauge etc for closed loop water cooling
 - 0.5TR or more Capacity, 1PH power supply, 1.55 KW or more Power, 9.7 amps Current
 - 25 lit or more Storage tank
 - 10/4 (LPM/BAR) or better Primary pump
 - 70 kg or less Dry weight, ½" BSP Inlet/Outlet
- Quartz Film Thickness Monitor with water cooled Crystal holder
 - 3 digits LED Rate display, Auto-ranging from 00.00 to 999 Ang./sec for rate display
 - 4 digits LED Thickness display, Auto-ranging from 0.000 to 999.9 k Ang.
 - Static thickness resolution of 1 Ang at minimum update rate
- Cold Finger
- Substrate heater with temperature min. 500°C or more with controlled rotation
- Tungsten helicals
- Tungsten baskets
- Molybdenum boats, 200 amps or more
- Graphite crucibles
- 'O' Rings & Gaskets
- Rotary pump oil, min. 5 lit/pack or more
- Diffusion pump oil, min. 200cc or more

- Pirani Gauge head
- Set of Oring gasket, oil seal, Exhaust button, Inlet & Oil filter for Direct drive Rotary pump listed above
- Penning Gauge head
- Necessary Spares and Consumables
- Additional Warranty after completion of one year Standard Warranty: 2 years or more
- Installation free of charge

- **Payment condition: On bill basis on installation of instrument**

- **Validity of the Quotation: Minimum 90 Days**

- **Supply Period of the quoted Instrument: Minimum 80 Days**

- **Approx. Cost of the Quoted Instrument: Rs. 11.0 Lakhs**

Chandana Rath

**Project Investigator
School of Materials Science and Technology
Indian Institute of Technology (BHU) Varanasi
Varanasi – 221005, U.P., INDIA**

INDIAN INSTITUTE OF TECHNOLOGY (BHU) VARANASI, INDIA

TO BE RETURNED

Following proforma should be filled in and duly signed by the firm and sent alongwith the quotation. (Please refer to the detailed instructions/notes before filling this proforma).

1. Validity of the offer :
2. Approximate Delivery Period :
3. (a) Whether rates have been quoted F.O.R. site and covers packing forwarding and insurance charges. : YES / NO
- (b) If not, please mention the same :
4. (a) Whether the prices are inclusive of Sales Tax and other taxes. : YES / NO
- (b) If not, kindly specify the amount / rate :
5. If the Sales Tax is charged extra, declaration for charging Sales Tax correctly attached. : YES / NO
6. (a) Whether supply will be made directly or through any Local / Regional / Authorized Dealer / Stockist : Directly/Stockist/Authorized Dealer
- (b) If through a Stockist / Dealer: -
 - (i) Name and full address of the Party :
 - (ii) Whether the order to be placed with the : Principal / Stockist / Dealer
 - (iii) Who will raise the bill : Principal / Stockist / Dealer
 - (iv) Cheques will be drawn in favour of : Principal / Stockist / Dealer
 - (v) Whether any Delivery, Packing and Forwarding : YES / NO

Charges will be payable to local Stockist/Dealer: (Please specify the amount/percentage etc, if any)

7. Our terms of payment (Please indicate your preference by a (✓) mark). Please note that no other payment terms are likely to be accepted.

(a) For Local Firms or if the bills are raised by the Local Dealers.

- (i) 100% Payment on bill basis :

OR

- (ii) 100% payment against Proforma Invoice after receipt of materials in good condition, installation and satisfactory report.
(Only under exceptional cases)

(b) If the bills are raised by outstation Firms

- (i) 100% Payment on bill basis :

OR

(ii) 100% payment against Proforma Invoice after receipt of materials in good condition, installation and satisfactory report :

OR

(iii) D.G.S. & D. Terms of Payment for D.G.S. & D Rate Contract items :

OR

(iv) 75% against Proforma Invoice (at site) or documents through Bank and 25% after receipt of materials in good condition, installation and satisfactory report. :

OR

(v) 90% payment against Proforma Invoice (at site) or documents through bank and 10% after receipt of materials in good condition, installation and satisfactory report (Only under special Circumstances). :

8. Whether any Excise Duty is payable on the items. : YES / NO
If yes, indicate the amount / percentage. :%

9. Whether any installation charges are payable extra. : YES / NO
If yes, amount to be specified. :

10. Whether any discount for educational institution :
offered on the printed price list of the manufacturer. : YES / NO
Please mention the amount / percentage. :

11. Whether the product is on DGS & D/D.I. Rate contract.
If yes, please enclose a photocopy of the same. : YES / NO

12. Whether the product bears I.S.I. Mark. YES / NO
If yes, please mention the I.S.I. License no. :

13. (a) Whether the firm is Sales Tax payer. : YES / NO
If yes, please mention the Sales Tax Numbers. :

(b) Whether the Local Dealer(s) is / are Sales Tax payer(s) : YES / NO
If yes, please mention the Sales Tax numbers of each :

14. Whether printed / authenticated price list of the Firm's Products and Catalogue etc. enclosed. : YES / NO

Signature of the Authorised Official with Seal

TO BE RETURNED WITH QUOTATION

UNDERTAKING

WE HEREBY UNDERTAKE THE FOLLOWING:

1. We will not sell the product (s) to other institutions, bodies and also in the market on the rates less than those quoted by us to the Institute.
2. The goods on which Sales Tax has been charged are not exempted for payment of Sales Tax under C.S.T. Act or U.P.S.T. Act or the rules made there under and the amount mentioned on account of Sales Tax on goods is not more than what is payable under the provisions of the relevant Act or Rules made there under.
3. The rate of Excise Duty mentioned in the quotation is in accordance with the provisions of the rules and the same is payable to the Excise Authorities in respect of the stores.
4. The goods / Stores / articles offered shall be of the best quality and workmanship and their supply will be strictly in accordance with the technical specifications and particulars as detailed in the quotation.
5. The information furnished by us in the quotation is true and correct to the best of our knowledge and belief.
6. We have read and understood the rules, regulations, terms and conditions and agree to abide by them.

***Authorised Signatory
(Seal)***