

**CENTRE FOR NANOSCIENCE & NANOTECHNOLOGY**  
(South Campus, Block-II, Sec-25)  
**PANJAB UNIVERSITY, CHANDIGARH-160014 (INDIA)**

Coordinator  
Centre for Nanoscience & Nanotechnology

Telephone: +91- 172 254 1741  
E-mail: [cnsnt@pu.ac.in](mailto:cnsnt@pu.ac.in)

NSNT: 4213 to 4215

SPEED POST  
NOTICE INVITING QUOTATIONS

DATE: 15-11-2018,

To

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Dear Sir,

Please quote your lowest rates in **two bid system (Technical bid and Financial bid)** should be clearly written or typed (cutting avoided) for the **High vacuum Thermal Evaporator System** list attached given below, specifying make, quality, period of supply of item along with detailed information and should reach the undersigned

**LAST DATE OF RECEIPT OF QUOTATIONS:** 10.12.2018 before 5.00 PM

**OPENING OF QUOTATIONS:** 12.12.2018 AT 3.30 PM.

Note : The quotation must reach by Hand or Registered Post or Speed Post on or before 10.12.2018 before 5.00 PM On the following address:

**The Coordinator**  
**Centre for Nanoscience & Nanotechnology,**  
**Block-II, South Campus, Sector-25,**  
**Panjab University, Chandigarh-160 014**

1. Technical bid and Financial bid should be in separate sealed envelope with 2% EMD.
2. The bidders are requested to attach an EMD in the form of demand draft only of 2% of the total value of the quotation/Performa invoice in the name of " The Coordinator, Centre for Nanoscience and nanotechnology, Panjab University, Chandigarh.  
**For preparing TECHNICAL BID please use the table given in ANNEXURE-1 and mark yes/no in the comply column.**

Financial bids received without the EMD will not be entertained. However, EMD is not required for quotation of total value of Rs. 1.00 Lakh or below.

3. Panjab University does not take any responsibility for any postal delay in delivery by Registered/ Speed Post or lost in transit of quotation.
4. **In terms of the Govt. of India Notification No.47/2017 Integrated Tax (rates) dated 14.11.2017 to insure that concerned vendor must charge the GST@5% on goods procured for Scientific and research purpose only in compliance to the aforesaid notification.**
5. Conditional and unsigned quotation will not be accepted.
6. All quoted rates should be FOR Panjab University and firm should quote the rate of all taxes including GST.
7. No payment will be made on the Performa invoice.
8. The quotation shall not contain corrections, erases and overwriting.
9. Please mention Name of work and due date on the Envelope.
10. The undersigned reserves right to accept or reject any quotation without assigning any reason.
11. Panjab University has been issued GST Identification No.(GSTIN) ie. 04AAAJ0325R2Z0 w.e.f. 1.7.2017.
12. As per Panjab University FDO Circular No.2572-2771/FDOI/F-143 dated 27.9.2017 GST deduction at source at the rate of 2% (CGST 1%\_SGST/UTGST 1%) or (IGST 2%) from the payment to be made or credited to the supplier or taxable goods or services or both, where the total value of such supply under a contract exceeds of Rs.2,50,000/- with reference memo No.ACLA/EA/2017/379 dated 20.9.2017 conveying the instruction os Government of India, Ministry of Finance Department of Revenue, Central Tax dated 15<sup>th</sup> September, 2017. These instructions shall apply to the supplier made/to be made w.e.f. 18.9.2017.
13. We have been exempted for paying Custom Duty as well as Excise Duty Exemption in terms of Govt. notification No.51/96-Customs dated 23.7.1996 and Central Excise duty Exemption in terms of Govt. notification No.10/97 – Central Excise dated 1.3.1997 as amended from time to time is valid upto 31.8.2020. Jt. Director General of Foreign Trade has issued a new Import Export Code (IEC) No.2217501658.
14. **Special Discount for educational institutions, University teaching department may be mentioned please.**
15. The Technical Bids will be opened on **12.12.2018 at 03.30 pm** and you may depute your representative at the time of opening of quotations.
16. **MOST IMPORTANT**: The bidders are requested to attach the EMD Demand Draft of 2% of the quotation in the name of the Coordinator, Centre for Nanoscience & Nanotechnology, Panjab University, Chandigarh", without Demand Draft, quotation will not be entertained.

13. Supplier has to demonstrate performance and specification of the system at the customer site.
17. Supplier should be able to provide the services by OEM Payroll Engineer only. Services by Agents are not acceptable.
18. Service Support Reference Customer List is to be provided along with Technical Bid.
19. Provide name and address of the three Institutes/Organizations where the similar equipment is supplied.
- 20. Please supply the material in one lot otherwise, the material will not be entertained.**
21. The quotation in a sealed envelope giving our/your reference No./Date of quotation should be sent by POST/personally.

Yours sincerely

*Nav*

Coordinator  
(Prof. Navdeep Goyal)  
Centre for Nanoscience & Nanotechnology  
U.I.E.A.S.T.  
Panjab University, Chandigarh.

**Technical Specifications are as under**

**Annexure-1**

**The technical specifications of the system are:**

S No	Item Specification	Comply (Yes/No)
1	<p><b>Main Chamber:</b></p> <ol style="list-style-type: none"> <li>1. Vacuum chamber should be D-Shape Box Type with front Door opening and it is made out of SS- 304 non magnetic quality stainless steel suitably polished to reduce degassing for achieving ultimate vacuum better than <math>3 \times 10^{-6}</math> Torr with necessary accessories for high vacuum sealing.. Chamber Size is 370mm (W) x 400mm (H) x 370mm (D) or better. The chamber bottom and Top flanges are welded with chamber.</li> <li>2. Top of the chamber must have Ports for substrate holder, Rotation etc. mechanism. Base Plate of the chamber should have 11 or more Ports for fixing mechanical and electrical feed throughs. The system must include necessary arrangements for electrodes, pump, gauges, air inlet, view ports, thickness monitor etc. should be provided</li> </ol>	



2	<b>Vacuum System:</b> <ol style="list-style-type: none"> <li>1. Reputed &amp; renowned make Rotary Vacuum of 250 Lit/Minute or better with 4 1/2" Diffusion Pump of atleast 280 Lit/sec should be provided. 4 1/2" butterfly type High Vacuum Valve &amp; Combination Valve for Roughing &amp; backing operation in Single Valve should be provided. Liquid Nitrogen Trap should be provided. System should be provided with Digital Gauges for Measuring pressure from atm to High Vacuum <math>1 \times 10^{-6}</math> mbar. System should have provision to purge Gas from Fine control Needle Valve and Vent Valve to break vacuum.</li> <li>2. Ultimate Vacuum in 3-5 range of <math>10^{-6}</math> mbar to be achieved in less than 1 hour of pumping time from atmosphere.</li> </ol>	
3	<b>Control system:</b> Selector Switches are provided to indicate the ON/OFF status of Rotary pump, diffusion pump, LT, HT and other accessories like Substrate heater, Thickness Monitor etc. Separate meters are provided for LT/HT current read out.	
4	<b>Vacuum Gauges</b> Digital vacuum Gauges with independent displays to monitor vacuum production up to $\sim 1 \times 10^{-6}$ Torr.	
5	<b>Gas feeding</b> Port with Needle valve with necessary pipelines to feed Oxygen / Argon gas during evaporation.	
6	<b>Evaporation sources:</b> <ol style="list-style-type: none"> <li>14. System Should have 2 Nos. LT Evaporation Feedthrough and Evaporation Source Holder as Standard on Base Plate of the Chamber. This holder can accept Filaments / Baskets / Boats as evaporation sources and A 200 amps power supply capable of delivering 200 Amp at 10V and 100 Amps at 20 Volts, 160 Amps, 10 Volts etc for Sequential evaporation purpose.</li> <li>15. HT electrical feed through to carry power for Ion cleaning is provided with A 5000 volts DC Open circuit, 3500 volts at 50 mA HT Power Supply.</li> <li>16. LT/ HT Control: A Thyristor Controller in the input circuit of LT and HT Circuit of Power Supplies with</li> </ol>	

	Potentiometer to control Evaporation Rate should be provided.	
7	<b>Substrate Holder and Shutter:</b> A Substrate holder to hold different Sizes of substrates should be provided. A manually operated source shutter with rotary shaft seal, to cover the evaporation source should be part of the system.	
9	<b>Digital Thickness Monitor:</b> Electronically controlled Quartz crystal based digital thickness monitor with shutter and 4 digit display and range 0.000 to 999.9 kA, with necessary electronic modules, feedthroughs and arrangements should be provided.	
10	<b>Safety devices:</b> Safety interlocks should include water flow switch, thermostat on DP, Safety switches on cabinet to cut off Power on Door Open, Electrical overload circuit.	
11	<b>Power:</b> Power input should be compatible with Indian power system and the system should work with 230 V AC and 50 Hz single phase supply.	
12	<b>Others:</b> <ul style="list-style-type: none"> <li>i) Operating manuals in both print and soft copies required.</li> <li>j) Warranty for 1 year.</li> <li>k) Installation of system and demonstration of thin film deposition at user's site.</li> <li>l) All the tools and gaskets necessary for the system.</li> </ul>	

### Optional Accessories.

S. No.	Item	Quantity	Yes/No
1.	<b>Substrate heater:</b> A substrate heater on which 2 inch diameter samples can be mounted and heated up to 500°C or greater temperatures. The assembly must include sample mount, thermocouple, digital PID controller etc.	1	
1	Tungsten Baskets	10	

2	Molybdenum Boats 200 A	10	
3	Quartz Crystals for the Digital Thickness Monitor	10	