



Central Purchase unit
National Institute of Technology Srinagar (J&K) -190006

Email: cpu@nitsri.ac.in

"Tender Document No. 39 Dated: 10.01.2019.

" Notice for Invitation of Bids for the supply of Field Emission Scanning Electron Microscope for Central Research facility Centre, with a provision of Pre-bid Conference"

-0-0-0-

1. Sealed Bids are invited for supply of the equipment having detailed Specifications as given in Annexure –I, in a 2- bid format with a Pre-Bid Conference on the terms & conditions and as per the instructions given below from para-2, from interested eligible bidders:
- 2. Techno-Commercial Bid, Containing the following documents in Envelope- A:-**
 - (a) Proof of being Original equipment manufacturer or Distributor/Marketing agent/ Authorized dealer in the shape of copy of agreement and registration under law in force. (b) *The OEM (Original Equipment Manufacturer) of offered product should be ISO 9001:2015 and ISO 14001:2015 certified or certified by any other national or international regulatory body. The products quoted must also be certified.*
 - (c) PAN card & Tax registration document of the firm.
 - (d) ITR's of previous 3-years.
 - (e) *Proof of annual turnover of the firm for last three years in such trade, which shall not be less than Rs.800.00 lacs., with at-least one such contract worth not less than Rs. 250.00 lacs or two such contracts worth Rs. 300.00 Lacs to reputed Institutes/ organizations/ Departments during last three years.*
 - (f) Proof of availability of after-sale support & service centre.
 - (g) Bid security for Rs. 8.00 lacs in the form of CDR/BD/DD/TDR/FDR pledged to Officer In-charge, Central Purchase Unit NIT Srinagar (J&K) and tender document fee Rs.2,000/-in the form of DD, favoring of Director, NIT Srinagar. Tender without bid security /document fee shall be rejected.
 - (h) Bid form in the format given in Annexure-II duly filled.
 - (i) List of organizations/ Institutions where such equipment has been supplied & installed successfully during last 3-years.
- 3. Price Bid Containing the following in Envelope-B:-**
 - (a) Prices offered and quoted both in words & figures. Prices must be offered /quoted in the format enclosed as Annexure-III in INR only. The rates quoted should be covered with transparent tape.
 - (b) The rate quoted should be FOR NIT Srinagar (J&K).
 - (c) Bid price should be without over writing. However minor over writing should be clearly signed by the bidder. In case of any discrepancy between price quoted in figures and words, the price quoted in words will prevail. Bid price should be firm for the bid validity period.
 - (d) All duties, taxes and levies (GST or other charges) payable, must be quoted separately. GST as applicable to Educational & Research Institutes shall be charged. Any document required for this purpose from us must be mentioned in the offer which shall be provided along-with the Supply order.

- (e) As per SRO 129 of Government of Jammu & Kashmir, the institute is Exempted from State entry tax. The Institute will provide Entry tax exemption certificate to successful bidder with supply order. The

4. Validity of Bids

Bids shall remain valid at least for 120 days from the date of opening of the bids.

5. Evaluation of Bids.

- (a) The purchaser shall first evaluate and compare the technical bids as per following criteria to determine the techno-commercially qualified bidders:

- (i) Properly filled and signed as per given formats
- (ii) Conform to terms and conditions and technical specifications.
- (iii) Are accompanied with Bid security and all other documents

(b) *In the 2nd step, the financial bids of only those bidders who qualify from the above process will be evaluated to determine the final successful bidder.*

6. Award of contract

- (a) Contract shall be awarded to the bidder whose bid qualifies techno-commercially and is offered at lowest reasonable evaluated price.
- (b) Successful bidder shall be notified about the award of the contract through a supply order where- in terms and conditions of supply shall be incorporated.

7. Payment & Performance Guarantee:

100% (90% + 10%) payment shall be made after successful receipt of the equipment in good condition and as per prescribed specifications verified by the nominated committee and after successful installation & commissioning/ training of the NIT staff. 10% will however be retained as security deposit against performance guarantee for the warranty period.

8. Warranty and after sale service:

- (a) All items shall carry comprehensive standard warranty of 02 years from the date of installation & commissioning as well as service support after expiry of warranty.

9. Settlement of disputes.

Settlement of disputes if any shall be subject to the jurisdiction of Srinagar Courts only.

11. Liquidated Damages.

If the bidder after accepting the purchase order of goods/equipments or services, fails to deliver any or all of the goods/equipments or to perform the services with-in the specified period, a penalty of 0.50% (half percent) of the price value of the item per week or part -thereof shall be imposed. The maximum penalty shall be limited to 10% of the cost. Once maximum is reached, NIT Srinagar shall proceed on its own to consider the termination of the supply order, on the risk & responsibility of the defaulting bidder.

12. Submission of Bids.

- (a) The last date for submission of bids is 13.02 .2019 (Wed) upto 16.00 hours.
However for ensuring wider participation with any modification/improvement in the specifications of the equipment, a Pre Bid Conference will be held on 22nd, January 2019 At 11.00 A.M. in the office of the undersigned. For this purpose, Interested bidders should register themselves with Prof. M.F Wani, Chairman CRFC whose email and phone is given below.
- (b) Bids should be properly sealed.
- (c) The two envelopes A & B should be separately sealed and superscripted as Techno-Commercial Bid & Price Bid. On Each envelope the due date of submission, Name of equipment/department; tender number and name of bidder should also be written . These two sealed envelopes should be sealed in a bigger Envelop with the address of the

Tender receiving Officer; Tender Number; due date of submission, Name of equipment/item/ department and name of bidder.

- (d) Bids should be addressed to Officer In-charge, Central Purchase Unit NIT Srinagar (J&K)
- (e) Bids not from Srinagar shall be dispatched sufficiently well in advance so as to reach the destination as per scheduled time & date. NIT Srinagar shall not be responsible for any delay caused by Post or Courier agency.

13. Bid opening.

- (a) The Techno-Commercial Bid (Envelope- A) will be opened first on **14-02-2019(Thu)** at 2.30 pm in the office room of the undersigned in the administrative block of the Institute. Price Bid (Envelope-B) of the qualified bidders as detailed above will be opened subsequently. Interested bidders can attend the Bid opening.

14. Notwithstanding above, the purchaser reserves the right to reject any or all the bids received in response to this N.I.T. or withdraw it without assigning any reasons thereof.

15. For any future information or corrigendum or addendum regarding this tender, please be in touch with our website: www.nitsri.ac.in.

16. Any clarification may sought on the following emails:

- Central purchase Unit: cpu@nitsri.ac.in
- Chairman CRFC, Prof. M.F. Wani:

Officer In-charge
Central Purchase unit, NIT Srinagar
Email: cpu@nitsri.ac.in

N.B.

1. Before preparing your valuable bid kindly go through the document fully and take care of all the requirements.
2. Bidders from outside Srinagar may please send their Bids well in advance so that these are received in time.

No. NIT/CPU/19/4600

Dated 10/01/2019

Annexure-I

“Name & Revised Specifications of the equipment for Central Research Facilities Center (CRFC), NIT Srinagar”

S.no	Description of items	Specifications	Qty
1	Field Emission Scanning Electron Microscope with Accessories	<ul style="list-style-type: none"> •Resolution: 1nm or below at 1 kV and 0.6 nm or below @ 15 kV. (Note: there should be at least 1 standard sample for calibration) •Magnification: Lowest X 50 or less. Highest X10,00,000 or more •Vacuum System: Oil free vacuum system having Ion Pump, Turbo Pump & Oil free rotary pump. R.P to achieve ultimate vacuum of 10⁻⁶ mbar or better. All necessary gauges and valves must be included. Pump down time should be less than 5 minutes. •Accelerating voltage: Continuously adjustable from 0.10 to30 KV or more. •Electron Gun: Schottky Field Emission Gun capable of providing high brightness/high current for noise free imaging. Any number of filaments in the warranty period has to be provided by the supplier as and when required. •Chamber: Large chamber size is essential and should provide provisions in terms of space for up gradation to incorporate stage for High Temperature FESEM and to interface additional detectors like EBSD, WDS, RAMAN, EDAX etc. (The same should be supported by the product literature). With at least 8-10 accessory ports for installing detectors and other accessories. The chamber should accommodate 6&8 inches wafer for inspection. (It should also include the single and multi sample holder (minimum 8 samples)) <ul style="list-style-type: none"> • Active vibration isolation system for column and chamber. •Specimen Stage: Eucentric 5 axis motorized stage with motorized stage movements equivalent to or better X= 0 to 100 mm or more Y= 0 to 100 mm or more Z= 0 to 50 mm or more Tilt = -10to +90° (-4 to +70) R = 360° Specimen size= up to 200mm or more. Max. height=100mm Manual Joystick operation is also needed. •Electron Optics: Beam Deceleration/Gentle beam/Beam Booster/ technology or equivalent for high resolution imaging at low kV, Magnetic and Electrostatic objective lens assembly or equivalent technology etc for high resolution imaging of magnetic 	1 No.

materials. A stable electron probe in a short time after a specimen exchange.

- Probe Current:** Minimum **100nA** or more.
- Signal Filtering should be possible for SE and BSE Signals.
- Dedicated Plasma cleaner attachment for removing the hydrocarbon from inside the FESEM Chamber
- Detectors:** (a) Everhart-Thronley (ET) Chamber mounted with secondary electron (SE) detector.
(b) 'In-Lens' /In column SE detector (for high resolution imaging in High Vacuum with automatic brightness & contrast adjustment).
(c) Parallel in-column detection of secondary electrons and Back scattered electron (BSE) detector, suitable for non-conductive sample analysis without coating and at Low Vacuum.
- User Interface:** Keyboard, Mouse, Control Panel with multifunction for the control and adjustment of frequently used SEM parameters, Manual Joystick control for stage axis.

•**EDS Detector:**

SEPARATE COST MAY PLEASE BE MENTIONED FOR THE ITEMS AS:

- i. **EDAX already existing & need to be interfaced with FESEM**
- ii. **Cost of FESEM with the specifications of EDAX**

Specifications of the existing EDS:

EDAX SPECIFICATION: Thermo scientific Ultra Dry

MODEL NO. 4471C- 1UPS-SN

Serial no. 8969

Specified Resolution: 129eV

Operating BIAS: 180V

5225 Verona Rd Madison, WI53711

(a) Ultra Dry Silicon Drift Detector (SDD) with thermoelectric coolers, vacuum sealed for better light element analysis in quantitative and qualitative analysis.

(b) Energy resolution 127 eV or better at Mn-K α ,

(c) Detector area should be $\geq 30 \text{ mm}^2$ for handling high count rates with high input count up to 2MCPS

(d) Elemental analysis (point, line, area analysis and elemental mapping with imaging facility, drift correction, spectrum matching etc.

(e) EDS analysis software.

(f) Standard sample set for quantitative analysis (for this, supplier may quote separately).

(g) External control of detector to avoid collision of the samples.

•**Accessories:** (a) A separate computer system of latest version and high

end processor, with 6 USB ports, RAM, 2 TB Hard disk, DVD RW, Mouse, Keyboard, etc. windows based operating system with TFT high resolution touch screen monitor and latest version high resolution colored printer with all necessary accessories.

(b) Compressor for all pneumatic operations.

(c) Infrared chamber scope (IRCCD)

(d) Control panel for adjustment of various SEM functions like focus, magnification etc.

(e) Bench Top Sputter Coater with Turbo Pump for Gold / platinum etc coatings with targets. (Cost to be quoted separately)

(f) Interface between FESEM and EDS

(g) Spares (Detailed list to be attached with the quote)

•**Optional items:** (1) Quoted FE-SEM system should be hooked up with optical microscope.

(2) STEM detector with bright field and dark field detectors.

(All parties are requested to quote the price for the STEM as an optional item).

(3) Load Lock Facility to be provided as an optional item.

•**Up-gradation facility: FE-SEM system should be up-gradable to attach the WDS and other accessories in future.**

. **UPS & Chiller for FESEM and all other consumable spares & tools should be supplied with the equipment.**

. **Equipment should be supplied with Warranty and AMC executed.**

NOTE:- All manufacturers have to quote top end model with latest technology in compliance to tender specifications.

IMPORTANT, INSTRUCTIONS:

- I. The vendor should provide a schematic diagram of the whole equipment clearly showing the configuration.
- II. A Compliance statement against each item mentioned in the technical specification must be provided in tabular format.
- III. Warranty: The complete instrument and accessories excluding consumables should be under warranty for a period of two year from the date of installation. In case of breakdown during the warranty period, a competent service engineer of the supplier should make as many visits as are necessary to rectify the problem and replace the faulty parts. But it should be repaired within reasonable time from the date and time of complaint lodged by the user. The supplier should provide all spares required for making the instrument operational.
- IV. Vendor should provide on-site demonstration of all the features of

		<p>the system and training to operate the system should be arranged at no extra cost.</p>	
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Previous specifications	Revised specifications
<ul style="list-style-type: none"> • Resolution: 1nm or below at 1 kV and 0.5 nm or below @ 15 kV. 	<ul style="list-style-type: none"> • Resolution: 1nm or below at 1 kV and 0.6 nm or below @ 15 kV
<ul style="list-style-type: none"> • Electron Gun: Schottky Field Emission Gun capable of providing high brightness/high current for noise free imaging. (1 + 4 Nos.) Number of Emitters to be purchased, depending upon their warranty period. 	<ul style="list-style-type: none"> • Electron Gun: Schottky Field Emission Gun capable of providing high brightness/high current for noise free imaging. Any number of filaments in the warranty period has to be provided by the supplier as and when required.
<ul style="list-style-type: none"> • Chamber: Large chamber having one dimension at least 325mm with height not less than 270 mm is essential. With at least 8-10 accessory port for installing detectors and other accessories. The chamber should accommodate 6&8 inches wafer for inspection. 	<ul style="list-style-type: none"> • Chamber: Large chamber size is essential and should provide provisions in terms of space for up gradation to incorporate stage for High Temperature FESEM and to interface additional detectors like EBSD, WDS, RAMAN, EDAX etc. (The same should be supported by the product literature). With at least 8-10 accessory ports for installing detectors and other accessories. The chamber should accommodate 6&8 inches wafer for inspection. (It should also include the single and multi sample holder (minimum 8 samples)). Active vibration isolation system for column and chamber.
<ul style="list-style-type: none"> • Probe Current: Minimum 100nA or less 	<ul style="list-style-type: none"> • Probe Current: Minimum 100nA or more. • Signal Filtering should be possible for SE and BSE Signals. • Dedicated Plasma cleaner attachment for removing the hydrocarbon from inside the FESEM Chamber

In addition to above Load Lock Facility to be provided as an optional item.

Annexure-II
BID FORM

To,
Officer In-charge,
Central Purchase unit,
NIT Srinagar.

Ref: Tender No. _____ issued under No.: NITS/CPU/ 2019/.....
Dated..... for-----
ForDepartment

Sir,

With reference to above invitation for bids, we would like to say that we have gone through your bid document thoroughly and hence offer our competitive Technical/Price Bid in sealed envelope for the supply of various goods/equipment listed in your document.

The following documents constitute our Bid:

- Technical specification/ literature attached:- Yes/No
- Valid tax clearance certificate attached:- Yes/ No
- OEM/ Authorized Dealership / certificate attached Yes/ No
- Revenue stamp affixed. Yes/ No
- Rates covered with transparent tape:- Yes/ No
- Bid document fee deposited:- Yes/ No
- Bid Security Receipt enclosed:- Yes/ No
- Bid price in Indian Rupees:- Yes/ No
- FOR Srinagar:- Yes/No
- Bid without correction/overwriting:- Yes/ No
- Price Bid schedule in the requisite format
- List of organization where this equipment has been supplied/Installed

Kindly feel free for any enquiries and clarifications.

Yours Sincerely

From M/S.....

Place:

Telephone No.....Email:

Date.....

Annexure-III

Price Schedule

S. No	Name of equipment/ Goods /item	Basic cost	GST	Any other tax	Total unit price	Quantity	Total Price
1							
2							
3							
4							
5							