



## Institute of Nano Science and Technology

Habitat Centre, Sector 64, Phase X, Mohali -160062, Punjab, India

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### NOTICE INVITING TENDER

INST invites tender from the reputed manufacturers or their authorized dealers so as to reach this office on or before scheduled date and time for the instrument, as per specifications given in the Annexure attached to the Tender form. All offers should be made in English and should be written in both figures and words. Tender forms can be downloaded from the website ([www.inst.ac.in](http://www.inst.ac.in)) of the Institute.

The bidders are requested to read the tender document carefully and ensure compliance with all specifications/instructions herein. Non-compliance with specifications/instructions in this document may disqualify the bidders from the tender exercise. The Director, INST reserves the right to select the item (in single or multiple units) or to reject any quotation wholly or partly without assigning any reason. Incomplete tenders, amendments and additions to tender after opening or late tenders are liable to be ignored and rejected.

### EQUIPMENT DETAILS (Under Buy Back for more details refer P – 28)

S. No.	Ref. No.	Item Description	Qty	Tender Fee (Nonrefundable)	EMD
1	INST/12(79)/2020-Pur	i) High Resolution Transmission Electron Microscope. ii) High Resolution Field Emission Scanning Electron Microscope (FESEM)	01 No. each	Rs. 2950/-	Rs. 13,75,000/-

### IMPORTANT NOTE, DATES & TIME

Date and Time of Pre-bid Meeting	12 <sup>th</sup> October, 2020 (1100 HRS) (Only through skype Video Conferencing)
Institute Skype ID	inst.mohali1
Last Date & Time For Submission	3 <sup>rd</sup> November, 2020 (1400 HRS)
Date / Time of Opening of Bids	3 <sup>rd</sup> November, 2020 (1500 HRS)
Venue of Bid Opening at INST	INST, Habitat Centre, Phase 10, SAS Nagar, Sector 64, Mohali
Tenders to be submitted at	INST, Habitat Centre, Phase 10, SAS Nagar, Sector 64, Mohali

Interested bidders may purchase the tender document directly from the office of INST by paying Rs.2950/- or download the tender documents directly from the website and deposit Rs. 2950/- (Two Thousand Nine Hundred Fifty only) in favour of Director, INST towards tender fees in INST account mentioned at s.no. 8 of the terms of tender. Both the bids i.e. the Technical & Price bids must be submitted on or before 3<sup>rd</sup> November, 2020 upto 2.00PM along with EMD.

### Pre-Bid Meeting (PBM)

<ul style="list-style-type: none"> <li>The objective of PBM is to provide a platform for clarifying issues and clearing doubts, if any, about the specifications and other allied technical/commercial details of the bid document. Bidders are requested to submit their bids only after the PBM so as to take care of the changes made in the bidding document, if any.</li> </ul> <p>The prospective participants should inform their intention to participate and send written queries at the email: <a href="mailto:purchase@inst.ac.in">purchase@inst.ac.in</a> positively up to 9<sup>th</sup> October, 2020 to enable us to keep the response ready. Queries after 9<sup>th</sup> October, 2020 upto 4.00PM will not be entertained.</p>
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- Pre-bid queries will be entertained only through **skype video conference** due to COVID-19 we are unable to conduct meeting at INST Mohali.
- Time slot for **skype video conference will be given on receipt of emails regarding pre-bid queries.**
- Change in the technical specifications and terms & conditions if any, for the above item after pre-bid deliberations, will be uploaded on the INST website & CPPP Website. All vendors are requested to quote accordingly.

### **IMPORTANT NOTE:**

- **PLEASE STRICTLY ADHERE TO THE DATES / TIMES MENTIONED IN TENDER DOCUMENT**
- The **bids** (Technical Bids) will be **opened** in the presence of representatives of tenderers, if any. **If any unscheduled holiday occurs on the date of submission/opening, then next working day shall be the prescribed date of submission/opening. Requests for postponement will not be entertained.** Fax/email bids may not be accepted. The Institute shall not be responsible for any postal delay about non-receipt / non delivery of the bids or due to any reason. Late/Delayed tenders shall not be considered/entertained.

The Director, INST reserves the right to accept/reject any offer in part or full without assigning any reason.

### **TERMS AND CONDITIONS**

Important Conditions of the tender to be abide by the tenderer

1. **Due date:** The tender has to be submitted before the due date. The offers received after the due date and time will not be considered.
2. **Preparation Bids:** The offer/bid should be submitted in two bid systems (i.e.) Technical bid and financial bid. The technical bid should consist of all technical details along with commercial terms and conditions. Financial bid should indicate item wise price for the items mentioned in the technical bid. The Technical bid and the financial bid should be put in separate covers and sealed. Both the sealed covers should be put into a bigger cover along with letter of EMD and to be sealed. The tender number and details should be superscripted on the left side of the outer cover. The Quotations should be valid for 180 days from the date of opening of tender. The Quotations duly sealed and super scribed on the envelope with the reference No. and due date, should be addressed to **“The Director, Institute of Nano Science and Technology, Habitat Centre, Sector 64, Phase –X, Mohali, 160062, Punjab, India”** so as to reach on or before the due date.
3. **Delivery of the tender:** The tender shall be sent to the below mentioned addressee either by post or by courier so as to reach our office before the due date specified in our Schedule. The offer/bid can also be dropped in the tender box on or before the due date specified in the schedule. The tender box is kept in Foyer area of INST.
4. **Tender Preparation Expenses:** The tenderer shall solely bear all the costs associated with the preparation and submission of the bid. The Institute shall in no case be responsible or liable for such costs, regardless of the conduct or outcome of the tender process. In no case, such costs shall be reimbursed by the Institute.
5. **Opening of the tender:** The offer/bid will be opened by a committee duly constituted for this purpose. The technical bid will be opened first and it will be examined by a technical committee which will decide the suitability as per our specification and requirement. The financial offer/bid will be opened only for the offer/bid which technically meets all our requirements as per the specification. The bidders if interested may participate on the tender opening Date and Time. The



bidder should produce authorization letter from their company to participate in the tender opening. Only one representative will be allowed to participate in the tender opening.

6. **Acceptance/Rejection of bids:** The Committee reserves the right to reject any or all offers without assigning any reason.
7. **Pre-qualification criteria:**
  - (i) Bidders should be the manufacturer / authorized dealer. Letter of Authorization from original equipment manufacturer (OEM) on the same and specific to the tender should be enclosed.
  - (ii) An undertaking from the OEM is required stating that they would facilitate the bidder on a regular basis with technology/product updates and extend support for the warranty as well.
  - (iii) OEM should be internationally reputed Branded Company.
  - (iv) Non-compliance of tender terms, non-submission of required documents, lack of clarity of the specifications, contradiction between bidder specification and supporting documents etc. may lead to rejection of the bid.
8. **Tender Fee/EMD:** Tender fee/EMD is to be obtained from the bidders except those who are registered with the Central Purchase Organisation, National Small Industries Corporation (NSIC) or the concerned Ministry or Department. The tenderer should submit Tender Fee/EMD amount as per tender ref. no. through NEFT/RTGS in INST Account. Account Details are as follows:
  - a. Name of Beneficiary: Institute of Nano Science and Technology (INST)
  - b. Account No. **2452201001102**
  - c. Name of Bank: **Canara Bank, Sector 34, Chandigarh**
  - d. IFS Code: **CNRB0002452**
  - e. MICR Code: **160015003**
  - f. Swift Code: **CNRBINBBFFC**

The details of transaction for Tender Fee/EMD viz. Name of bidder firm, Tender Description, Transaction ID/No. of Transfer, Transaction date, Amount of Transaction, Name of Bank, Address of Bank shall be furnished by the tenderer on their letterhead separately along with their tender.

9. **Refund of EMD:** The EMD will be returned to unsuccessful Tenderer only after the Tenders are finalized. In case of successful Tenderer, it will be retained till the successful and complete installation of the equipment.
10. **REASONABILITY OF PRICES :**

Please quote best minimum prices applicable for a premier Research Institution, **leaving no scope for any further negotiations on prices.** The quoting party should give a certificate to the effect that the quoted prices are the minimum and they have not quoted the same item on lesser rates than those being offered to INST to any other customer nor they will do so till the validity of offer or execution of the purchase order, whichever is later. We request you to fill the price reasonability certificate format in the enclosed file (Annexure "1")

The party must give details of identical or similar equipment, if any, supplied to any CSIR labs/DBT/DST/MHRD Institutes during last three years along with the final price paid, Model number, specifications and Performance certificate from them.
11. **Performance Security:** The supplier shall require to submit the performance security in the form of irrevocable bank guarantee issued by any Indian Nationalized Bank for an amount which is equal to the 10% of Purchase Order value within 15 days after the final installation cum acceptance of the equipment at INST and Performance Security should be valid for a period of 60 days beyond the date of completion of warranty period of the equipment.



12. **Force Majeure:** The Supplier shall not be liable for forfeiture of its performance security, liquidated damages or termination for default, if and to the extent that, it's delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.
- i) For purposes of this Clause, "Force Majeure" means an event beyond the control of the Supplier and not involving the Supplier's fault or negligence and not foreseeable. Such events may include, but are not limited to, acts of the Purchaser either in its sovereign or contractual capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions and freight embargoes.
- ii) If a Force Majeure situation arises, the Supplier shall promptly notify the Purchaser in writing of such conditions and the cause thereof. Unless otherwise directed by the Purchaser in writing, the Supplier shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.
13. **Risk Purchase Clause:** In event of failure of supply of the item/equipment within the stipulated delivery schedule, the purchaser has all the right to purchase the item/equipment from the other source on the total risk of the supplier under risk purchase clause.
14. **Integrity Pact**
- a. As per the directives of the Central Vigilance Commission all government departments / organisations / institutes have to adopt an Integrity Pact (IP) to ensure transparency, equity and competitiveness in major public procurement activities. The integrity pact envisages an agreement between the prospective bidders/vendors with the buyer committing the persons/officials of both the parties with the aim not to exercise any corrupt influence on any aspect of the contract. Only those bidders/vendors who are willing to enter in to such an integrity pact with the purchaser would be competent to participate in the bidding.
- b. Integrity Pact also envisages Panel of Independent External Monitors (IEMs) which shall be provided/recommended by INST/its labs and institutes with the approval of by CVC.
- c. The integrity pact would be effective from the date of invitation of bids till complete execution of the contract.
- d. The model format of integrity pact (IP) is at Annexure - 3.
15. **Packing Instructions:** Each package will be marked on three sides with proper paint/indelible ink, the following:
- i. Item Nomenclature
  - ii. Order/Contract No.
  - iii. Country of Origin of goods
  - iv. Supplier's Name and Address
  - v. Consignee details
  - vi. Packing list reference number
16. **Delivery and Documents:**
- Delivery of the goods should be made within a maximum of 12 weeks from the date of placement of purchase order and the opening of LC. Within 24 hours of shipment, the supplier shall notify the purchaser and the insurance company by cable/telex/fax/e mail the full details of the shipment including contract number, railway receipt number/ AAP etc. and date, description of goods, quantity, name of the consignee, invoice etc. The supplier shall mail the following documents to the purchaser with a copy to the insurance company:



- i. 4 Copies of the Supplier invoice showing contract number, goods' description, quantity unit price, total amount;
  - ii. Acknowledgment of receipt of goods from the consignee(s) by the transporter;
  - iii. Insurance Certificate if applicable;
  - iv. Manufacturer's/Supplier's warranty certificate;
  - v. Inspection Certificate issued by the nominated inspection agency, if any, and the Supplier's factory inspection report; and
  - vi. Certificate of Origin.
  - vii. Two copies of the packing list identifying the contents of each package.
  - viii. The above documents should be received by the Purchaser before arrival of the Goods (except where the Goods have been delivered directly to the Consignee with all documents) and, if not received, the Supplier will be responsible for any consequent expenses.
17. **Delayed delivery:** If the delivery is not made within the due date for any reason, the institute will have the right to impose penalty 0.5% per week and the maximum deduction is 10% of the contract value / price.
18. **Prices:** The price should be quoted in net per unit (after breakup) and must include all packing and delivery charges. The offer/bid should be exclusive of taxes and duties, which will be paid by the purchaser as applicable. However the percentage of taxes & duties shall be clearly indicated. The price should be quoted without custom duty and excise duty, since INST is exempted from payment of Excise Duty and is eligible for concessional rate of custom duty. Necessary certificate will be issued on demand.  
In case of import supply the price should be quoted on FOB Basis. Also please indicate CIF charges separately upto New Delhi indicating the mode of shipment. INST will make necessary arrangements for the clearance of imported goods at the Airport/Seaport. Hence the price should not include the above charges.
19. **Notices:** For the purpose of all notices, the following shall be the address of the Purchaser and Supplier.
- i. **Purchaser:** The Director,  
Institute of Nano Science and Technology,  
Habitat Centre, Sector – 64, Phase X, Mohali – 160064.
  - ii. **Supplier:** (To be filled in by the supplier)  
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20. **Progress of Supply:** Wherever applicable, supplier shall regularly intimate progress of supply, in writing, to the Purchaser as under:
- i. Quantity offered for inspection and date;
  - ii. Quantity accepted/rejected by inspecting agency and date;
  - iii. Quantity dispatched/delivered to consignees and date;
  - iv. Quantity where incidental services have been satisfactorily completed with date;
  - v. Quantity where rectification/repair/replacement effected/completed on receipt of any communication from consignee/Purchaser with date;
  - vi. Date of completion of entire Contract including incidental services, if any; and
  - vii. Date of receipt of entire payments under the Contract (In case of stage-wise inspection, details required may also be specified).



21. **Inspection and Tests:** Inspection and tests prior to shipment of Goods and at final acceptance are as follows:

- After the goods are manufactured and assembled, inspection and testing of the goods shall be carried out at the supplier's plant by the supplier, prior to shipment to check whether the goods are in conformity with the technical specifications attached to the purchase order. Manufacturer's test certificate with data sheet shall be issued to this effect and submitted along with the delivery documents. The purchaser shall be present at the supplier's premises during such inspection and testing if need is felt. The location where the inspection is required to be conducted should be clearly indicated. The supplier shall inform the purchaser about the site preparation, if any, needed for installation of the goods at the purchaser's site at the time of submission of order acceptance.
- The acceptance test will be conducted by the Purchaser, their consultant or other such person nominated by the Purchaser at its option after the equipment is installed at purchaser's site in the presence of supplier's representatives. The acceptance will involve trouble free operation and ascertaining conformity with the ordered specifications and quality. There shall not be any additional charges for carrying out acceptance test. No malfunction, partial or complete failure of any part of the equipment is expected to occur. The Supplier shall maintain necessary log in respect of the result of the test to establish to the entire satisfaction of the Purchaser, the successful completion of the test specified.
- In the event of the ordered item failing to pass the acceptance test, a period not exceeding one weeks will be given to rectify the defects and clear the acceptance test, failing which the Purchaser reserve the right to get the equipment replaced by the Supplier at no extra cost to the Purchaser.
- Successful conduct and conclusion of the acceptance test for the installed goods and equipments shall also be the responsibility and at the cost of the Supplier.

22. **Resolution of Disputes:** The dispute resolution mechanism to be applied pursuant shall be as follows:

- i. In case of Dispute or difference arising between the Purchaser and a domestic supplier relating to any matter arising out of or connected with this agreement, such disputes or difference shall be settled in accordance with the Indian Arbitration & Conciliation Act, 1996, the rules there under and any statutory modifications or re-enactments thereof shall apply to the arbitration proceedings. The dispute shall be referred to the Executive Director, Institute of Nano Science and Technology (INST) Mohali and if he is unable or unwilling to act, to the sole arbitration of some other person appointed by him willing to act as such Arbitrator. The award of the arbitrator so appointed shall be final, conclusive and binding on all parties to this order.
- ii. In the case of a dispute between the purchaser and a Foreign Supplier, the dispute shall be settled by arbitration in accordance with provision of sub-clause (a) above. But if this is not acceptable to the supplier then the dispute shall be settled in accordance with provisions of UNCITRAL (United Nations Commission on International Trade Law) Arbitration Rules.
- iii. The venue of the arbitration shall be the place from where the order is issued.

23. **Applicable Law:** The place of jurisdiction would be Mohali (Punjab) INDIA.



**24. Right to Use Defective Goods**

If after delivery, acceptance and installation and within the guarantee and warranty period, the operation or use of the goods proves to be unsatisfactory, the Purchaser shall have the right to continue to operate or use such goods until rectifications of defects, errors or omissions by repair or by partial or complete replacement is made without interfering with the Purchaser's operation.

**25. Supplier Integrity**

The Supplier is responsible for and obliged to conduct all contracted activities in accordance with the Contract using state of the art methods and economic principles and exercising all means available to achieve the performance specified in the contract.

**26. Training**

The Supplier is required to train the designated Purchaser's technical and end user personnel to enable them to effectively operate the total equipment.

**27. Installation & Demonstration**

The supplier is required to done the installation and demonstration of the equipment within one month of the arrival of materials at the INST site of installation, otherwise the penalty clause will be the same as per the supply of materials.

28. **Insurance:** For delivery of goods at the purchaser's premises, the insurance shall be obtained by the Supplier in an amount equal to 110% of the value of the goods from "warehouse to warehouse" (final destinations) on "All Risks" basis including War Risks and Strikes. The insurance shall be valid for a period of not less than 3 months after installation and commissioning. ***In case of orders placed on FOB/FCA basis, the purchaser shall arrange Insurance.***

29. **Incidental services:** The incidental services also include:

- Furnishing of 01 set of detailed operations & maintenance manual.
- Arranging the shifting/moving of the item to their location of final installation within INST premises at the cost of Supplier through their Indian representatives.

30. **Warranty:** 1. Warranty period shall be at least 3 years from date of installation of Goods at the INST site of installation. The Supplier shall, in addition, comply with the performance and/or consumption guarantees specified under the contract. If for reasons attributable to the Supplier, these guarantees are not attained in whole or in part, the Supplier shall at its discretion make such changes, modifications, and/or additions to the Goods or any part thereof as may be necessary in order to attain the contractual guarantees specified in the Contract at its own cost and expense and to carry out further performance tests. **The warranty should be comprehensive on site.**

**Note: If the OEM warranty is for 12 Months, additional extended warranty of 24 months should be quoted separately with or without price. Also, if a different period of warranty has been specified in the 'Technical Specifications of the equipment' then the period mentioned above shall stand modified to that extent.**

2. The Purchaser shall promptly notify the Supplier in writing of any claims arising under this warranty. Upon receipt of such notice, the Supplier shall immediately within in 02 days arrange to repair or replace the defective goods or parts thereof free of cost at the ultimate destination. The Supplier shall take over the replaced parts/goods at the time of their replacement. No claim whatsoever shall lie on the Purchaser for the replaced parts/goods thereafter. The period for correction of defects in the



warranty period is 02 days. If the supplier having been notified fails to remedy the defects within 02 days, the purchaser may proceed to take such remedial action as may be necessary, at the supplier's risk and expenses and without prejudice to any other rights, which the purchaser may have against the supplier under the contract.

31 **AMC:** Annual Maintenance Contract (AMC)/Comprehensive Maintenance Contract (CMC) up to next five years after warranty period is over, should be quoted separately.

32 **Delivery Schedule:** The tenderer should indicate clearly the time required for delivery of the item. In case there is any deviation in the delivery schedule, liquidated damages clause will be enforced or penalty for the delayed supply period will be levied.

### 32. **Governing Language**

The contract shall be written in English language. English language version of the Contract shall govern its interpretation. All correspondence and other documents pertaining to the Contract, which are exchanged by the parties, shall be written in the same language.

### 33. **Applicable Law**

The Contract shall be interpreted in accordance with the laws of the Union of India and all disputes shall be subject to place of jurisdiction.

### 34. **Notices**

Any notice given by one party to the other pursuant to this contract/order shall be sent to the other party in writing or by cable, telex, FAX or e mail and confirmed in writing to the other party's address.  A notice shall be effective when delivered or on the notice's effective date, whichever is later.

### 35. **Taxes and Duties**

Suppliers shall be entirely responsible for all taxes, duties, license fees, octroi, road permits, etc., incurred until delivery of the contracted Goods to the Purchaser. However, GST in respect of the transaction between the Purchaser and the Supplier shall be payable extra, if so stipulated in the order.

36. **Agency Commission:** Agency commission if any will be paid to the Indian agent in Rupees on receipt of the equipment and after satisfactory installation. Agency Commission will not be paid in foreign currency under any circumstances. The details should be explicitly shown in Tender even in case of Nil commission. The tenderer should indicate the percentage of agency commission to be paid to the Indian agent.

### 37. **Payment:**

- Payment will be made through irrevocable Letter of Credit (LC). Letter of Credit (LC) will be established in the favour of foreign Supplier after the submission of performance security. The letter of credit (LC) will be established on the exchange rates as applicable on the date of establishment.

- i. For Imports, LC will be opened for 100% FOB/CIF value. 80% of the LC amount shall be released on presentation of complete and clear shipping documents and 20% of the LC amount shall be released after the installation and demonstration of the equipment at the INST site of installation in faultless working condition for period of 60 days from the date of the satisfactory



installation and subject to the production of unconditional performance bank guarantee as specified in Clause 9 of tender terms and conditions.

- ii. Indian Agency commission (IAC), if any shall be paid after satisfactory installation & commissioning of the goods at the destination at the exchange rate prevailing on the date of negotiation of LC documents, subject to DGS&D registration for restricted items.
- iii. All the bank charges within India will be borne by the Institute and outside India will be borne by the Supplier.

- For Indigenous supplies, 100% payment shall be made by the Purchaser after delivery, inspection, successful installation, commissioning and acceptance of the equipment at INST in good condition and to the entire satisfaction of the Purchaser and on production of unconditional performance bank guarantee as specified in Clause 11 of tender terms and conditions.

In case of indigenous supply the 100% payment will be made through bank transfer after receipt & installation of the equipment. The following bank details to be submitted along with tender:

- i. Name of Beneficiary:
- ii. Account No. iii. Name of Bank:
- iv. IFS Code:
- v. MICR Code:
- vi. Swift Code:

38. **User list:** Brochure detailing technical specifications and performance, list of industrial and educational establishments where the items enquired have been supplied must be provided.

### 39. **Manuals and Drawings**

- Before the goods and equipments are taken over by the Purchaser, the Supplier shall supply operation and maintenance manuals. These shall be in such details as will enable the Purchaser to operate, maintain, adjust and repair all parts of the works as stated in the specifications.
- The Manuals shall be in the ruling language (English) in such form and numbers as stated in the contract.
- Unless and otherwise agreed, the goods equipment shall not be considered to be completed for the purposes of taking over until such manuals and drawing have been supplied to the Purchaser.

40. **Application Specialist:** The Tenderer should mention in the *Techno-Commercial bid* the availability and *names* of *Application Specialist* and *Service Engineers* in the nearest regional office.

41. **Terms of Delivery:** The item should be supplied to our destination in case of local supply. In case of import supply, the item should be shipped upto New Delhi Airport. The Installation/Commissioning should be completed as specified.

42. **Site Preparation:** The supplier shall inform to the Institute about the site preparation, if any, needed for the installation of equipment, immediately after the receipt of the purchase order. The supplier must provide complete details regarding space and all the other infrastructural requirements needed



for the equipment, which the Institute should arrange before the arrival of the equipment to ensure its timely installation and smooth operation thereafter.

The supplier shall visit the Institute and see the site where the equipment is to be installed and may offer his advice and render assistance to the Institute in the preparation of the site and other preinstallation requirements.

43. **Installation:** The equipment or machinery has to be installed or commissioned by the successful bidder within 30 days from the date of receipt of the item at INST. In case of any mishappening/damage to equipment and supplies during the carriage of supplies from the origin of equipment to the installation site, the supplier has to replace it with new equipment/supplies immediately at his own risk. Supplier will settle his claim with the insurance company as per his convenience. INST will not be liable to any type of losses in any form.
44. **Spare Parts:** The Supplier may be required to provide any or all of the following materials, notifications, and information pertaining to spare parts manufactured or distributed by the Supplier:
- Such spare parts as the Purchaser may elect to purchase from the Supplier, providing that this election shall not relieve the Supplier of any warranty obligations under the Contract; and
  - In the event of termination of production of the spare parts:
  - Advance notification to the Purchaser of the pending termination, in sufficient time to permit the Purchaser to procure needed requirements; and
  - Following such termination, furnishing at no cost to the Purchaser, the blueprints, drawings and specifications of the spare parts, if requested.

Supplier shall carry sufficient inventories to assure ex-stock supply of consumable spares for the Goods, such as gaskets, plugs, washers, belts etc. Other spare parts and components shall be supplied as promptly as possible but in any case within six months of placement of order.

45. **Defective Equipment:** If any of the equipment supplied by the Tenderer is found to be substandard, refurbished, unmerchantable or not in accordance with the description/specification or otherwise faulty, the committee will have the right to reject the equipment or its part. The prices of such equipment shall be refunded by the Tenderer with 18% interest if such payments for such equipment have already been made. All damaged or unapproved goods shall be returned at suppliers cost and risk and the incidental expenses incurred thereon shall be recovered from the supplier. Defective part in equipment, if found before installation and/or during warranty period, shall be replaced within 45 days on receipt of the intimation from this office at the cost and risk of supplier including all other charges.

#### 46. Termination for Default

The Purchaser may, without prejudice to any other remedy for breach of contract, by written notice of default sent to the Supplier, terminate the Contract in whole or part:

- If the Supplier fails to deliver any or all of the Goods within the period(s) specified in the order, or within any extension thereof granted by the Purchaser; or
- If the Supplier fails to perform any other obligation(s) under the Contract.
- If the Supplier, in the judgment of the Purchaser has engaged in corrupt or fraudulent practices

in competing for or in executing the Contract.  For the purpose of this Clause:

- “**Corrupt practice**” means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution.
- “**Fraudulent practice**” means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Borrower, and includes collusive practice among Bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Borrower of the benefits of free and open competition;”



- In the event the Purchaser terminates the Contract in whole or in part, the Purchaser may procure, upon such terms and in such manner, as it deems appropriate, Goods or Services similar to those undelivered, and the Supplier shall be liable to the Purchaser for any excess costs for such similar Goods or Services. However, the Supplier shall continue the performance of the Contract to the extent not terminated.
47. **Downtime:** During the warranty period not more than 5% downtime will be permissible. For every day exceeding permissible downtime, penalty of 1/365 of the 5% FOB value will be imposed. Downtime will be counted from the date and time of the filing of complaint within the business hours.
48. **Training of Personnel:** The supplier shall be required to undertake to provide the technical training to the personnel involved in the use of the equipment at the Institute premises, immediately after completing the installation of the equipment for a minimum period of one week at the supplier's cost.
49. **Disputes and Jurisdiction:** Any legal disputes arising out of any breach of contract pertaining to this tender shall be settled in the court of competent jurisdiction located within Mohali.
50. **Compliance certificate:** This certificate must be provided indicating conformity to the technical specifications. **Point-wise** details of the technical compliance referring to the respective page number of the printed instrument brochure must be provided in tabular form.
51. **Acknowledgement:** It is hereby acknowledged that we have gone through all the conditions mentioned above and we agree to abide by them.

SIGNATURE OF TENDERER  
ALONG WITH SEAL OF THE COMPANY WITH DATE



## BID PARTICULARS

1. Name of the Supplier :
2. Address of the Supplier :
3. Availability of demonstration of equipment : Yes / No
4. Tender cost enclosed: : Yes/No if yes
5. Online Tender Fee/EMD submission information enclosed : Yes / No if Yes  
Transaction ID/No. of Transfer\_\_\_\_\_
- Transaction date: \_\_\_\_\_
- Amount of Transaction\_\_\_\_\_
- Name of Bank\_\_\_\_\_
- Address of Bank\_\_\_\_\_
6. Name and address of the Officer/contact person to whom all references shall be made regarding this tender enquiry Name:  
Address:  
Ph:  
Fax:  
Mobile:  
Email:  
Web:

## Compliance statement for the tender specifications

Tender Ref No.: INST/12(79)/2020-Pur

S.No.	Check list of documents/Undertakings	Yes/No	Remarks (give explanation if the answer is No)
1.	Is EMD details attached? (if applicable)		
2.	Is the bidder original equipment manufacturer (OEM)/authorised dealer?		
3.	If authorised dealer, recent dated certificate to this effect from OEM, attached or not?		
4.	Undertaking from OEM regarding technical support & extended warranty period		
5.	Validity of 180 days or not?		
6.	Price Reasonability Certificate enclosed as per format??		
7.	Undertaking from bidder regarding acceptance of tender terms & conditions		
8.	Whether list of reputed users (along with telephone numbers of contact persons) for the past three years specific to the instrument attached?		
9.	Does the instrument comply with all the specifications detailed? Attach a separate sheet showing compliance with the specifications and explanations thereto if the equipment varies from the requested specifications.		
10.	Whether free Installation, Commissioning and Application Training offered?		
11.	Whether comprehensive onsite warranty offered?		
12.	Whether Annual maintenance after expiry of comprehensive onsite warranty quoted separately?		
13.	Whether free of cost shifting of instrument from transit campus to main campus offered?		



## **Annexure – 1**

### **PRICE REASONABILITY CERTIFICATE (to be submitted in financial bid envelope)**

This is to certify that we have offered the maximum possible discount to you in our Quotation No. \_\_\_\_\_ dated \_\_\_\_\_ for (Value Rs.) \_\_\_\_\_.

We would like to certify that the quoted price are the minimum and we have not quoted the same item on lesser rates than those being offered to INST to any other customer nor we will do so till the validity of offer or execution of purchase order, whichever is later.

Seal and Signature of the tenderer



## Annexure 2

### Local Content Certificate (To be submitted in Technical bid envelop)

This is to certify that the %age of Local content for the quoted tendered item is \_\_\_\_\_.

Seal and signature of the tenderer

Note:

- 1. As per revised Public Procurement order 2017 D.O. No. P – 45021/2/2017-PP(BE-II) dated June 4, 2020 Local content means Amount of value added in India which shall be total value of the item procured (excluding net domestic indirect taxes) minus the value of imported content in the item(including all customs duties)as a proportion of the total value, in percent.**



## Format of the Integrity Pact INTEGRITY PACT

Between

Institute of Nano Science and Technology (INST) hereinafter referred to as "The Principal".

And .....herein referred to as "The Bidder / Contractor."

### Preamble

The Principal intends to award, under laid down organizational procedures, contract/s for.....The Principal values full compliance with all relevant laws of the land, rules, regulations, economic use of resources and of fairness/ transparency in its relations with its Bidder(s) and/or Contractor(s).

In order to achieve these goals, the Principal will appoint an Independent External Monitor (IEM), who will monitor the tender process and the execution of the contract for compliance with the principles mentioned above.

### Section 1 – Commitments of the Principal

- (1) The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles:
  - (a) No employee of the Principal, personally or through family members, will in connection with the tender for, or the execution of a contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.
  - (b) The Principal will, during the tender process treat all Bidder(s) with equity and reason. The Principal will in particular, before and during the tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential/additional information through which the Bidder(s) could obtain an advantage in relation to the tender process or the contract execution.
  - (c) The Principal will exclude from the process all known prejudiced persons.
- (2) If the Principal obtains information on the conduct of any of its employees which is a criminal offence under the IPC/PC Act, or if there be a substantive suspicion in this regard, the Principal will inform the Chief Vigilance Officer and in addition can initiate disciplinary action.

### Section 2 – Commitments of the Bidder(s)/Contractor(s)

The Bidder(s)/Contractor(s) commit himself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the tender process and during the contract execution.

- (a) The Bidder(s)/Contractor(s) will not, directly or through any other Person or firm, offer, promise or give to any of the Principal's employees involved in the tender process or the execution of the contract or to any third person any material or other benefit which he/she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract.
- (b) The Bidder(s)/Contractor(s) will not enter with other Bidders into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices,



specifications, Certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process.

(c) The Bidder(s)/Contractor(s) will not commit any offence under the relevant IPC/PC Act; further the Bidder(s)/Contractor(s) will not use improperly, for purposes of competition or personal gain, or pass on to others, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically. The Bidder(s)/Contractor(s) of foreign origin shall disclose the name and address of the Agents/representatives in India, if any.

Similarly the

Bidder(s)/Contractor(s) of Indian Nationality shall furnish the name and address of the foreign principals, if any. Further details as mentioned in the "Guidelines on Indian Agents of Foreign Suppliers" shall be disclosed by the Bidder(s)/Contractor(s).

Further, as mentioned in the Guidelines all the payments made to the Indian agent/representative have to be in Indian Rupees only. Copy of the "Guidelines on Indian Agents of Foreign Suppliers" is annexed and marked as Annexure.

(e) The Bidder(s)/Contractor(s) will, when presenting his bid, disclose any and all payments he has made, is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract.

(2) The Bidder(s)/Contractor(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.

**Section 3 – Disqualification from tender process and exclusion from future Contracts** If the Bidder(s)/Contractor(s), before award or during execution has committed a transgression through a violation of Section 2, above or in any other form such as to put his reliability or credibility in question, the Principal is entitled to disqualify the Bidder(s)/Contractor(s) from the tender process or take action as per the procedure mentioned in the "Guidelines on Banning of business dealings". Copy of the "Guidelines on Banning of business dealings" is annexed and marked as Annex -"B".

#### **Section 4 – Compensation for Damages**

(1) If the Principal has disqualified the Bidder(s) from the tender process prior to the award according to Section 3, the Principal is entitled to demand and recover the damages equivalent to Earnest Money Deposit/ Bid Security.

(2) If the Principal has terminated the contract according to Section 3, or if the Principal is entitled to terminate the contract according to Section 3, the Principal shall be entitled to demand and recover from the Contractor liquidated damages of the contract value or the amount equivalent to Performance Bank Guarantee.

#### **Section 5 – Previous transgression**

(1) The Bidder declares that no previous transgressions occurred in the last 3 (three) years with any other Company in any country conforming to the anti-corruption approach or with any other Public Sector Enterprise in India that could justify his exclusion from the tender process.

(2) If the Bidder makes incorrect statement on this subject, he can be disqualified from the tender process or action can be taken as per the procedure mentioned in "Guidelines on Banning of business dealings".



### **Section 6 – Equal treatment of all Bidders/Contractors/Sub-contractors**

- (1) The Bidder(s)/Contractor(s) undertake(s) to demand from all Subcontractors a commitment in conformity with this Integrity Pact, and to submit it to the Principal before contract signing.
- (2) The Principal will enter into agreements with identical conditions as this one with all Bidders, Contractors and Subcontractors.
- (3) The Principal will disqualify from the tender process all bidders who do not sign this Pact or violate its provisions.

### **Section 7 – Criminal charges against violating Bidders/Contractors/Sub contractors (1)**

The Principal appoints competent and credible Independent External Monitor for this Pact. The task of the Monitor is to review independently and objectively, whether and to what extent the parties comply with the obligations under this agreement.

(2) The Monitor is not subject to instructions by the representatives of the parties and performs his functions neutrally and independently. He reports to the THE DIRECTOR, INST. The Bidder(s)/Contractor(s) accepts that the Monitor has the right to access without restriction to all Project documentation of the Principal including that provided by the Contractor. The Contractor will also grant the Monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his project documentation. The same is applicable to Subcontractors. The Monitor is under contractual obligation to treat the information and documents of the Bidder(s)/Contractor(s)/Subcontractor(s) with confidentiality.

(4) The principal will provide to the Monitor sufficient information about all meetings among the parties related to the Project provided such meetings could have an impact on the contractual relations between the Principal and the Contractor. The parties offer to the Monitor the option to participate in such meetings.

(5) As soon as the Monitor notice, or believes to notice, a violation of this agreement, he will so inform the Management of the Principal and request the Management to discontinue or take corrective action, or to take other relevant action. The monitor can in this regard submit nonbinding recommendations. Beyond this, the Monitor has no right to demand from the parties that they act in a specific manner, refrain from action or tolerate action.

(6) The Monitor will submit a written report to the THE DIRECTOR, INST within 30 days from the date of reference or intimation to him by the Principal and should the occasion arise, submit proposals for correcting problematic situations.

(7) Monitor shall be entitled to compensation on the same terms as being extended to/provided to Director, INST.

(8) If the Monitor has reported to the THE DIRECTOR, INST, a substantiated suspicion of an offence under relevant IPC/PC Act, and the THE DIRECTOR, INST has not, within the reasonable time taken visible action to proceed against such offence or reported it to the Chief Vigilance Officer, the Monitor may also transmit this information directly to the Central Vigilance Commissioner.

(9) The word 'Monitor' would include both singular and plural.

### **Section 9 – Pact Duration**

This Pact begins when both parties have legally signed it. It expires for the Contractor 10 months after the last payment under the contract, and for all other Bidders 6 months after the contract has been awarded.



If any claim is made/lodged during this time, the same shall be binding and continue to be valid despite the lapse of this pact as specified above, unless it is discharged/determined by THE DIRECTOR, INST.

**Section 10 – Other provisions**

(1) This agreement is subject to Indian Law. Place of performance and Jurisdiction is the Registered Office of the Principal, i.e. Mohali, Punjab.

(2) Changes and supplements as well as termination notices need to be made in writing. Side agreements have not been made.

(3) If the Contractor is a partnership or a consortium, this agreement must be signed by all partners or consortium members.

(4) Should one or several provisions of this agreement turn out to be invalid, the remainder of this agreement remains valid. In this case, the parties will strive to come to an agreement to their original intentions.

\_\_\_\_\_  
(For & On behalf of the Principal)  
(Office Seal)

\_\_\_\_\_  
(For & On behalf of Bidder/Contractor)  
(Office Seal)

Place.....

Place.....

Date.....

Date.....

Witness 1:  
(Name & Address): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Witness 2:  
(Name & Address): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Specifications for High Resolution Transmission Electron Microscope (Qty. 01)**

General Characteristics	Offered model should be Ultra High resolution, multipurpose, versatile & with high tilt analytical capability  Specify model quoted and provide product brochure
Operation Modes (Computer controlled)	HRTEM imaging, TEM imaging, EDS with Mapping, Bright field imaging, Dark field imaging, Convergent Beam Electron Diffraction, Selected Area Electron Diffraction, Micro Diffraction,
Acceleration voltage	(Minimum) 80KV -200 kV (Maximum) should be variable either in steps or continuous (Specify minimum step)
Electron Emitter	Emitter must be LaB6 Lanthanum Hexaboride based only. Filament should be pre-centered It should be covered under 3 year warranty.
Filament quantity	Two Lab6 filaments must be supplied as and when required even if it is after warranty
Resolution	Point Resolution 0.20 nm or better Line Resolution 0.15 nm or better
TEM magnification range	30 X to 1500000 X or more
Vacuum System	System must be equipped with Clean and Fast Dry Vacuum System for Column and Gun Section (IGP/SIP) Fully interlocked differentially pumped column should be supplied.
Specimen chamber and Stage:	Goniometer stage, fully computer-controlled, eucentric side-entry, high stability X,Y movement $\pm 1$ mm or better Z movement $\pm 0.1$ mm or better Drift rate should be mentioned.
Specimen holder	System should be supplied with Single tilt holder and Double tilt holder
Specimen tilt angle	$\pm 25^\circ$ or more with specimen tilt holder $\pm 60^\circ$ or more high tilt holder / retainer
Viewing chamber	Viewing chamber with fluorescence screen with Binoculars and CCD camera
Objective lens aperture	3-4 holes click stop apertures
Illumination modes	High Magnification Magnification Low Dose/ Minimum Dose feature (MDS) <span style="float: right;">Low</span>

Convergence angle $\alpha$	100 mrad or better
Focal length	2.3 mm or better
Cs coefficient	1.0 mm or better
Cc coefficient	1.4mm or better
Camera length	100 mm to 1800 mm or better
Recording System CMOS Camera	Bottom Mounted Peltier cooled CMOS Camera, 9 Megapixel or better Acceptable manufacturer: GATAN Make Compatible softwares for data acquisition and analysis must be provided with life time warranty and free upgradation.
Computer & its Accessories for TEM/EDS and Camera operation	The system must have compatible latest version high performance computer with high end, state of the art processor and Windows based operating system, sufficient number of USB port and RAM must be there. Minimum specifications should be as Full HD LED backlit IPS display flat screen Monitor 27-inch or more, CD/DVD RW, Keyboard and Mouse, windows-10 or better OS, 16 GB RAM or better, 2 TB Hard disk or better. 1 nos x 4 TB external hard disc should be provided for data backup. (Assembled Computer systems should not be provided.)
EDS	LN2 free EDS : - 80 mm <sup>2</sup> or bigger crystal area (Preferred manufacturers Oxford/ Bruker) The EDS software should have the features like Multi-Point / Point EDS, line scan, area analysis, mapping, phase mapping, X-ray mapping, drift correction, spectrum matching etc. Qualitative analysis with auto element identification, Quantitative analysis for polished bulk and thin samples. Software must have ZAF P/B and Phi Rho Z algorithm and various options like Manual subtraction of background, tilt correction and drift correction, deconvolution of peaks, etc. Software must include K L M N line data base. Lifetime replacement of all the softwares must be provided. Spectrum Imaging: Software capable of taking the spectrum image of every pixel of process data with live background removal and deconvolution for off line analysis and storage for future reference. <b>(Detector calibration: User should be able to calibrate the system without any help from manufacturer. Standard samples required for all modes/types of calibration must be supplied.</b> A separate computer system with monitor for EDS applications & colored printer with refillable ink must be provided with the system.
Installation and Commissioning	Prior to the supply, the vendor should inspect the site, perform the site-inspection scientifically for electromagnetic fields and mechanical vibrations and suggest the installation related civil works, if any, required.

Spare parts	<p>Assurance about spares availability should be provided. Recommended set of spares for two years of operation to be supplied.</p> <p>Spare parts availability assurance for 7 years for the date of installation.</p> <p>Carbon coated standard Cu grids of 1000 Nos. should be provided by the supplier</p>
Warranty	<p>Warranty on TEM for a period of 36 months from the date of installation and commissioning. If any part is taken out for repair etc. during warranty, the bank guaranty or any other associated cost should be borne by the supplier. Institute should not be asked for anything apart from the necessary paperwork.</p>
UPS and Chiller	<p>Compatible online UPS and Chiller required for smooth functioning of the machine with the coverage of 3 years warranty period must be provided. UPS should give at least 1 hr back-up to the machines under running condition. Battery replacement if needed should be carried out by the supplier within warranty period of TEM.</p>
SF6 gas and other cylinder	<p>Required cylinders must be provided during installation. For each gas, at least one spare cylinder should be provided.</p>
STEM-HAADF And SAD	<p>Quoted TEM model should have (STEM) Scanning transmission electron microscope with HAADF Detector: Ultra-high STEM, high angle annular dark field (HAADF) detector should be supplied with software for data acquisition and analysis. Bright field, annular dark field and Z-contrast mode. Magnification upto 5 MX STEM-HAADF resolution: 0.2 nm System should be capable of Capturing SA Diffraction.</p>
Automation	<p>Auto Gun, Auto adjust, Magnification, Calibration, System should have capability of simultaneous analysis modes such as STEM+EDS with EDS line scan, area scan facilities.</p>
Cooling System	<p>An efficient automatic temperature controlled closed circuit water cooling system from a reputed brand must be supplied.</p>
Spare parts	<p>Spare parts should be available upto 10 years from the date of installation.</p>
Services & Operation	<p>(i) Installation and onsite training in the INST Mohali, and a quick response in case of any future technical support. (ii) Supplier should have a direct presence, operation and services in India and registered offices at the name of original manufactures. (iii) Different Standard samples must be provided for all routine calibrations. (iv) Service and technical support must be provided for all the third party items as and when required during the warranty period/AMC/CMC by the main supplier. 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</p>



	<p>problem and replace the faulty parts. Shipping charges should also be borne by the supplier.</p> <p>(v) Compliance statement must be given along with Offer with proper brochures and necessary documents/proofs.</p> <p>(vi) After warranty CMC charges including 3rd party items (eg UPS etc) should be Quoted for next 3 years.</p> <p>(vii) All the technical specs must be validated in INST Mohali during/after installation.</p> <p>(ix) Lifetime replacement of all the softwares including EDS softwares must be provided.</p> <p>(x) At least 10 POs of the same model/series of instrument along with satisfactory performance certificate issued by Govt Organisations in India need to be submitted by the supplier.</p>
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**Technical Specifications for High Resolution Field Emission Scanning Electron Microscope (FESEM) (Qty. 01)**

**General Description**

This tender includes the supply, installation, commissioning and on-site training in the use of a Field Emission Scanning Electron Microscope, capable of the following functions:

To produce ultrahigh resolution images for high accelerating voltage operation (for conducting specimens), as well as high resolution images for low accelerating voltage operation (for non-conducting specimens)

The microscope must be fully self-contained with all necessary support systems such as vacuum systems, cooling systems, power supply system, computer hardware and software.

S.N.	Specifications	
1	Imaging Capabilities	(1.1) The system must demonstrate the capability of imaging both non-conducting & conducting material as well as biological samples with resolution of 0.8 nm or better @15kV and 1.0 nm or better @1kV at high vacuum mode. (1.2) Beam Deceleration/Beam Booster technology/Gentle Beam technology or equivalent to support high resolution imaging. (1.3) The system must have Magnetic plus Electrostatic objective/Super hybrid lens or equivalent lens assembly for high resolution imaging of magnetic materials specially at shorter working distance (1mm or lower). (1.4) Image data captured from the quoted model MUST be furnished supporting these numbers.
2	Magnification	(2.1) 50x to 10,00,000x or more (continuous magnification)
3	Resolution	(3.1) 0.8 nm or better at 15kV (3.2) 1.0 nm or better at 1kV
4	Airlock specimen exchange	(4.1) A load lock system must be provided for easy and quick specimen exchange without breaking the vacuum. Minimum specimen size through the load lock must be 100 mm diameter or better. The load lock status should be displayed on the Graphic user interface.

		(4.2) specimen exchange time should be less than 5 minutes.
5	Chamber	<p>(5.1) Large chamber having one dimension at least 300 mm with height not less than 260 mm is essential.</p> <p>(5.2) FESEM should have large chamber with at least Ten (or more) free ports for installing detectors and other accessories.</p> <p>(5.3) Inbuilt chamber scope with a separate LCD screen.</p> <p>(5.4) sample size: 100 mm dia; 40 mm height (or better)</p>
6	Electron Gun	<p>(6.1) Schottky Field Emission Gun capable of providing high brightness/high Current for noise free imaging.</p> <p>(6.2) Emitter should be covered by 3 years or more warranty period,</p> <p>(6.3) it has to be supplied free of cost as and when required in the warranty period. Emitter has to be replaced if there is stability issue.</p> <p>(6.4) FESEM should have a power supporter back up of 72 hrs for Emitter section.</p>
7	Acceleration Voltage	(7.1) Continuously adjustable from 0.1 kV or less to 30 kV or more.
8	Working Distance	(8.1) 1 mm or less to 45mm or more (preferable)
9	Probe current	<p>(9.1) 2pA to 200nA or more</p> <p>(9.2) Stability: Better than <math>\pm 1</math> % per hour.</p>
10	Stage	<p>(10.1) 5 axis motorized eucentric stage with motorized stage movements equivalent to or better</p> <p>(10.2) X=70 mm or more Y=50 mm or more Z=40mm or more</p> <p>(10.3) Tilt = -5 to 70 degrees or better,</p> <p>(10.4) Rotation = 360 degrees endless, motor driven</p> <p>(10.5) The position of the specimen stage should be graphically displayed on the monitor for clear display of the specimen position.</p> <p>(10.6) Store and recall of sample positions, functions to select features, centre and zoom selected feature, multidirectional stage drive, etc., should be possible through the software interface.</p>
11	Detectors	<p>(11.1) Dedicated In-chamber/chamber mounted Everhart-Thronley (ET) Secondary Electron Detector (SED), Dedicated In-chamber Backscattered Electron Detector (BSED).</p> <p>(11.2) In-Lens /In-column SE detector or equivalent detector for high resolution imaging in High Vacuum with automatic brightness &amp; contrast adjustment.</p> <p>(11.3) Low angle BSE-detector</p> <p>(11.4) EDS Detector: The EDS detector should be liquid nitrogen free with integrated dual Vertical stage Peltier cooling system.</p> <p>(11.5) The resolution of the detector should be 129 eV or better @ Mn</p>

		<p>K<math>\alpha</math>.</p> <p>(11.6) The active area should be 60 mm<sup>2</sup> or more.</p> <p>(11.7) Element detection range should be from Beryllium to Uranium.</p> <p>(11.8) <b>EDS Software capabilities:</b> The EDS software should have the features like Multi-Point / Point EDS, line scan, area analysis, mapping, phase mapping, X-ray mapping, drift correction, spectrum matching etc.</p> <p>Qualitative analysis with auto element identification, Quantitative analysis for polished bulk and thin samples.</p> <p>(11.9) Software must have ZAF P/B and Phi Rho Z algorithm and various option like Manual subtraction of background, tilt correction; deconvolution of peaks, etc. Software must include K L M N line data base.</p> <p>(11.10) Lifetime replacement of all the softwares must be provided.</p> <p>(11.11) Spectrum Imaging: Software capable of taking the spectrum image of every pixel of process data with live background removal and deconvolution for off line analysis and storage for future reference.</p> <p>(11.12) <b>Detector calibration:</b> User should be able to calibrate the system without any help from manufacturer. <b>Standard samples required for all modes/types of calibration must be supplied.</b></p> <p>(11.13) A separate computer system with monitor for EDS applications &amp; colored printer with refillable ink must be provided with the system. (See the specs in point 16)</p> <p>(11.14) Preferred manufacturers Oxford/ Bruker.</p> <p>In cases of third party attachments, FESEM supplier must ensure the proper services and technical support during warranty period.</p>
12	Electron optics:	<p>(12.1) Beam deceleration/ Gentle beam / Tandem deceleration or equivalent technology for high resolution imaging.</p> <p>(12.2) It must be capable of hassle-free imaging of Magnetic samples at high magnification.</p> <p>(12.3) aperture angle control lens or equivalent feature should be provided to maintain small probe diameter even at higher probe currents.</p> <p>(12.4) Imaging with filter mode should be provided. The filter mode should allow pure secondary electron (SE) signals, pure backscattered electron (BSE) signals and mixture of SE and BSE signals to be detected by the in lens secondary electron detector.</p> <p>(12.5) simultaneously display of four or more live images on the monitor should be there.</p>
13	Vacuum System	<p>(13.1) Oil free vacuum system having ion pump, Turbo Pump (Maglev) &amp; Rotary Pump to achieve ultimate vacuum of 10<sup>-8</sup> mbar or better in the chamber. Rotary pump should be from Edward nXDS series or equivalent that can last at least 3 years (one extra tip seal must be provided).</p> <p>(13.2) All necessary gauges and valves must be included. Pump down time should be less than 5 minutes from standby mode.</p> <p>(13.3) Proper safety interlock mechanisms should be there for trouble-free operation at full efficiency.</p> <p>(13.4) Suitable protection mechanism for FEG source on sudden failure of vacuum pump operation.</p>

14	Chiller, Compressor and UPS	<p>(14.1) Air cooled Chiller and compressor of appropriate capacity should be provided. Necessary UPS (10 kV minimum) with 1 hour back up to be supplied by the vendor.</p> <p>(14.2) They should be covered under 3 years warranty including battery.</p>
15	Digital Image Store and Image Processor	<p>(15.1) 4:3 Format with 16 bit dynamic range: 1024x768 pixels, 2048x1536 pixels, 3072x2304 pixels, 4096x3072 pixels, 6144x4608 pixels, 8192x6144 pixels, 12288x9216 pixels, 24576x18432 pixels, 32768x24576 pixels, 32768 x 32768 pixels</p> <p>(15.2) Pixel averaging, Frame averaging for up to 256 frames, Line averaging for up to 256 lines</p> <p>(15.3) Combination of Pixel and Frame averaging, Combination of Pixel and Line averaging, Drift corrected frame averaging</p> <p>(15.4) Image store resolution up to 32K x 32K pixels for high Resolution large image mapping.</p>
16	Computer & its accessories	<p>(16.1) The system must have compatible latest version high performance computer with high end, state of the art processor and Windows based operating system, sufficient number of USB port and RAM must be there.</p> <p>Minimum specifications should be as Full HD LED backlit IPS display flat screen Monitor 27-inch or more, CD/DVD RW, Keyboard and Mouse, windows-10 or better OS, 16 GB RAM or better, three 1 TB Hard disk or better. 4 TB external hard disc should be provided for data backup. All hard drives should be SSD. Two external CV drives. (Assembled Computer systems should not be provided.)</p> <p>(16.2) Two PC in number: one for EDS and one for FESEM Mouse sharing device for connecting both the PCs.</p>
17	Other accessories	<p>The offer must include the following:</p> <p>(17.1) Control panel for adjustment of various SEM functions like focus, magnification etc.</p> <p>(17.2) Manual Joystick or Similar control for stage</p> <p>(17.3) Infrared camera/chamber-scope with separate screen for chamber viewing</p> <p>(17.4) Interface between SEM and EDS</p> <p>(17.5) Sample mounting stubs – 20 Nos/ Inclined stubs – 10 Nos</p> <p>(17.6) Carbon tapes – 10 Nos</p> <p>(17.7) FEG Emitter should be provided as and when required for 6 years of smooth operation without any extra cost.</p> <p>(17.8) Sputter Coater: Suitable vacuum operated Gold coater with Glow discharge ) (i) two gold targets for high quality coating.</p> <p>(17.9) Sample holder/Grid coverslips for SEM 20 nos</p> <p>(17.10) All necessary tool kits and spares must be included for trouble free operation of the instrument.</p> <p>(17.11) Multiple stub sample holder must be supplied.</p> <p>(17.12) Aperture should be replaced as and when required for 3 years.</p>
18	Services & Operation	<p>(18.1) Must offer <b>three year warranty</b> of the complete FESEM unit. If any part is taken out for repair etc. during warranty, the bank guaranty or any other associated cost should be borne by the supplier. Institute should not be asked for anything apart from the necessary paperwork.</p>

		<p>(18.2) Installation and onsite training in the INST Mohali, and a quick response in case of any future technical support.</p> <p>(18.3) Supplier should have a direct presence, operation and services in India and registered offices at the name of original manufactures.</p> <p>(18.4) different Standard samples must be provided for all routine calibrations.</p> <p>(18.5) Service and technical support must be provided for all the third party items as and when required during the warranty period/AMC/CMC by the main FESEM supplier. 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. Shipping and all other charges should also be borne by the supplier.</p> <p>(18.6) Compliance statement <b>must</b> be given along with Offer with proper brochures and necessary documents/proofs.</p> <p>(18.7) After warranty CMC charges including 3<sup>rd</sup> party items (eg UPS etc) should be Quoted.</p> <p>(18.8) All the technical specs must be validated in INST Mohali during/after installation.</p> <p>(18.9) Lifetime replacement of all the software including EDS must be provided.</p> <p>(18.10) At least 10 POs of the same model/series of instrument along with satisfactory performance certificate issued by Govt Organisations in India need to be submitted by the supplier .</p> <p>(18.11) Supplier should do pre-inspection of the installation site and do all necessary site preparation (grounding, electrical connections etc.)</p>
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**Note: The following equipments are to be purchased under buyback:**

- i) High Resolution Transmission Electron Microscope (HRTEM)
- ii) High Resolution Field Emission Scanning Electron Microscope (FESEM)

Institute of Nano Science and Technology, Mohali has old TEM and SEM of lower version.

The details of the existing equipments are as below:

S NO.	MODEL	DESCRIPTION	QTY	Year of purchase
1	JEM-2100(HR)	Transmission Electron Microscope with Single Tilt Holder (TEM)	01	September, 2014
2	JSM - IT-300LV	Scanning Electron Microscope (SEM)	01	March 2014

- a) Institute wants to replace the existing equipments with new and upgraded version of higher resolution with buy back of existing old equipments. Bidders are requested to submit their bid considering the buy back and quote accordingly.
- b) If bidder wants to visit and check the condition of equipment before submitting their bid, they can visit and meet with the custodians.
- c) Both the equipments are to be sold as and where basis under buy back.
- d) Bidders has option either to take the equipment back under buy back or leave it as it is.

**Price quote for buy back equipments:**

Sr. No.	Name of Equipment	Model No.	Amount
1.	Transmission Electron Microscope with Single Tilt Holder (TEM)	JEM-2100(HR)	
2.	Scanning Electron Microscope (SEM)	JSM - IT-300LV	

**Price quote for new equipments:**

Sr. No.	Name of Equipment	Model No.	Amount	GST (if applicable)	Total
1.	High resolution Transmission Electron Microscope with accessories (TEM)				
2.	High resolution field emission Scanning Electron Microscope with Accessories (FESEM )				



**Price quote for new equipments after deducting the buy back amount:**

<b>Sr. No.</b>	<b>Name of Equipment</b>	<b>Model No.</b>	<b>Amount</b>	<b>GST (if applicable)</b>	<b>Total</b>
1.	High resolution Transmission Electron Microscope with accessories (TEM)				
2.	High resolution field emission Scanning Electron Microscope with Accessories (FESEM )				

Seal and Signature of the tenderer