

NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA, SURATHKAL

Department of Metallurgical and Materials Engineering

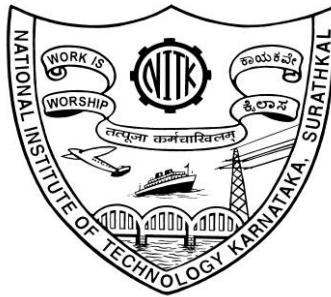
POST SRINIVASNAGAR, MANGALORE – 575 025 (D K)

Phone: (0824) 2474000.

E- mail: info@nitk.ac.in

Fax: (0824) 2474033

Website: <http://www.nitk.ac.in>



TENDER DOCUMENT

Tender Notification No: Met-Mat/DST-FIST/FESEM/294/2018-19/04

Date: **08/04/2019**

Name of Goods : Field Emission Scanning Electron Microscope

Estimated amount put to Tender : 3,00,00,000/- INR

EMD Amount (2% of estimated value) : 6,00,000/- INR

Time for Supply of item : 4 months after release of Purchase order

Last Date and Time for submission of tender : 06/05/2019 before 3:00 PM

Address for Submission of Tender: : Dr. M. R. Rahman

Department of Metallurgical and Materials Engineering

National Institute of Technology Karnataka, Surathkal

P.O: Srinivasnagar, Surathkal, Mangalore, 575025

Mobile No.: 9620169801 Email: rizwan.mme@gmail.com

Purchase officer Name and Contact : Pritam Bansod Ramesh, Assistant Registrar (Purchase)

(Related to purchase inquiry) Phone: +91-824-2473993 Email: pritamansod@nitk.ac.in

Date of opening of technical bid : 10/05/2019 4:00 PM (If Possible)



NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA, SURATHKAL

Department of Metallurgical and Materials Engineering

POST SRINIVASNAGAR, MANGALORE – 575 025

Phone: (0824) 2474000

Fax: (0824) 2474033

E- mail: info@nitk.ac.in

Website: <http://www.nitk.ac.in>

Tender Notification.No : Met-Mat/DST-FIST/FESEM/294/2018-19/04

Date: **08/04/2019**

NOTICE INVITING TENDER (NIT)

The National Institute of Technology Karnataka, Surathkal (in short – NITK, Surathkal) is an autonomous institute under Ministry of HRD Govt of India imparting Technical Education and engaged in Research Activities. It is proposed to procure equipment for Central Research Facility.

Sealed Tenders are invited for the following items in **two cover system** (i.e., Technical bid and financial bid) subject to the following terms and conditions, from the reputed manufacturers or it's authorized dealers so as to reach this office on or before scheduled date and time. The tender (Technical bid) will be opened on the same day if possible in the presence of bidders or their authorized agents who may choose to be present. The financial bid of only such bidders whose technical bid is accepted shall be opened on the same day or later pre-informed date.

1. **Name of Goods:** Field Emission Scanning Electron Microscope
2. **Estimated Cost:** 3,00,00,000/- INR
3. **E M D** : 6,00,000/- INR
(2% of estimated value)
4. **Time for completion of Supply after Placing Purchase Order:** 4 months after release of Purchase order
5. **Last date and time for submission of Tender** : 06/05/2019 before 3:00 PM

6. **Tender to be submitted at the following address:** : Dr. M. R. Rahman

Department of Metallurgical and Materials Engineering

National Institute of Technology Karnataka, Surathkal

P.O: Srinivasnagar, Surathkal, Mangalore, 575025

Mobile No.: 9620169801 Email: rizwan.mme@gmail.com

Purchase officer Name and Contact : Pritam Bansod Ramesh, Assistant Registrar (Purchase)

(Related to purchase inquiry) Phone: +91-824-2473993 Email: pritam Bansod@nitk.ac.in

7. **Place, Date and Time of opening of technical bid:** Board Room of Main Building NITK, 10/05/2019 4:00 PM (If Possible)

Note: Institute shall not be responsible for any postal delay about non-receipt /non delivery of the bids or due to the the wrong addressee.

Sd/-

[Signature of CRF Chairman]

Page 2 of 36

SECTION 1: INSTRUCTION TO BIDDER (ITB)

1. **The bid should be submitted in two cover system (sealed)-Technical Bid and Financial Bid**
2. **Technical Bid:** Documents related to the Technical Bid should be submitted in sealed envelope and duly super-scribed as “**Envelope No. 1 – Technical Bid**”. Full name and address of the bidder should be mentioned on the envelope and should be addressed to The Director, NITK, Surathkal

3. **The Technical Bid should contain the following documents:**
 - a) Compliance statement of specifications as per **Annexure-‘A’**.
 - b) License certificate for manufacture /supply of the item & Factory license
 - c) Agreements / Purchase Orders / Completion certificates if any, for similar items to other Universities, Institutes, and Government Department/Undertakings/Public sectors the details of such supplies for the preceding three years should be given together with the prices eventually or finally paid with contact details of persons as per **Annexure –‘B’**.
 - d) List of Owner/partners of the firm and their contact numbers (Bidder Information)
 - e) Declaration of abandoned or suspended any awarded service & Blacklist Certificate. **Annexure ‘C’**
 - f) Integrity Pact (for procurements above Rs1.0 Crore (Rs10.0 Million). **Annexure ‘D’**
 - g) Copy of GST certificate & PAN No.
 - h) Catalog of the Product with detailed product specifications.
 - i) Undertaking that the successful BIDDER agrees to give a Performance Security amounting to 10% of the purchase order value in favor of “The Director, NITK Surathkal”.
 - j) The copy of the Balance sheet, Profit & Loss A/c., Trade or Manufacturing A/c for the last 3 years should be enclosed and the turnover must be 30% of the estimated cost.
 - k) Duly filled in checklist should be submitted along with the Technical Bid.
 - l) Contract form given in Section 5 need to be submitted.
 - m) **EMD must be** in the form of Bank Guarantee (**ANNEXURE –G**) / Fixed Deposit Receipt / Demand Draft. It will be valid for **180 days** from the date of opening of the tender. The firm registered with MSME/NSIC will be exempted from submission of EMD. Intended parties will have to give proof of registration along with their tender. EMD of the unsuccessful bidders shall be refunded without any interest at the earliest after finalization of the purchase of the concerned item.
 - i) The EMD will be returned to the BIDDERS(s) whose offer is not accepted by NITK within one month from the date of the placing of the purchase order(s) on the selected

BIDDER(s). In case of the BIDDER(s) whose offer is accepted the EMD will be returned on submission of Performance Security in the form of Bank Guarantee (BG). However, if the return of EMD is delayed for any reason, no interest/penalty shall be payable to the BIDDERS.

- ii) The successful BIDDER, on the award of contract/order, must send the contract/order acceptance in writing, within 15 days of award of contract/order failing which the EMD will be forfeited.
- iii) The EMD shall be forfeited in case a successful BIDDER fails to furnish the Performance Security.

4. Financial bid : The bidders should submit their financial bid as per the format given in Section 4 of the Notice Inviting Tender in the sealed envelope. This envelope should be duly superscribed as “**Envelope No. 2 – Financial bid**”. Full name and address of the bidder should also be mentioned on the envelope and should be addressed to The Director, NITK, Surathkal

After evaluation of technical bid, the technically successful bidder shall be intimated to witness the opening of their financial bid along with date, time and venue through e-mail. Financial bid of only those bidders' will be opened who are declared “Technically Successful or Technically Responsive”.

Note that both the sealed envelopes, No. 1 and 2, should be submitted in a single sealed envelope duly superscribed with the following details.

(i) Tender Notification Number (ii) “Tender for the supply of.....” (iii) Not to Open before (Date and Time)

Mention “Kind Attention: Contact Person’s Name and Phone Number”, and submit at the address given in the Notice Inviting Tender.

5. Bid Evaluation:

On the due date, the Technical bids will be opened and referred to the Purchase Committee which is duly constituted by the Director, NITK. The committee will go through the technical aspects of the tender and recommend shortlisted firms. The recommendation of the committee is final and binding on all the parties. The committee may visit the manufacturing site to assess the capabilities to manufacture the tendered items as per the specifications. In case of any remarks /default noted, the EMD will be forfeited even if pre-qualified.

6. Quoting of Price(s):

- a. Indian bidder should quote firm prices in Indian rupee only unless otherwise specified elsewhere in this tender. Prices quoted in any other currency shall not be considered.

- b. In case of Global Tender, Price quoted should be in Indian Rupees /US Dollar / Euro / Pound Sterling / Yen or in a currency under Reserve Bank of India's notified basket of currencies and must include delivery at NITK, Surathkal including loading/unloading.
- c. For the purpose of price evaluation, if the bid is submitted in Foreign Currency, then the bid price shall be converted to Indian Rupees as per the RBI Exchange Rate prevailing on the day of opening of the price bid.

7. The Bid will be accepted only from the manufacturers (OEM) or its authorized supplier.

8. The incomplete or conditional tender will be rejected.

9. The Institute reserves the right to cancel at any time after acceptance of the tender with a notice. The Supplier shall have no claim to any payment of compensation or otherwise whatsoever, on account of any profit or advantage which might have derived from the execution of the supply.

10. Performance Security The successful bidder shall deposit a performance security of 10% of the quoted price in the form of Bank Guarantee (**ANNEXURE -G**) / Demand Draft / Fixed Deposit Receipt of any scheduled bank drawn in favour of the **Director, NITK Surathkal, Mangalore** payable at Mangalore. In case the bidder fails to deposit the said performance Security within the stipulated period, including the extended period if any, the Earnest Money deposited by the bidder shall be forfeited automatically without any notice. Please note the following points:

- a) Successful bidder should submit performance Security as prescribed above to the Purchase Section, NITK Surathkal, on or before 30 days from the date of issue of order acknowledgment.
- b) Performance Security shall be for the due and faithful performance of the contract and shall remain binding, notwithstanding such variations, alterations for extensions of time as may be made, given, conceded or agreed to between the successful bidder and the purchaser under the terms and conditions of acceptance to tender.
- c) The successful bidder is entirely responsible for the due performance of the contract in all respects according to the terms and conditions of the tender.
- d) The validity of the Performance Security must cover the warranty period plus two months.
- e) In case of imported goods, the Indian agent has to furnish Performance Bank Guarantee in Indian Rupees only from Scheduled Bank.

11. The validity of bids: The rate quoted should be valid for a minimum of 180 days. No claim for escalation of the rate will be considered after opening the Tender.

- 12. Warranty / Guarantee & On-site skill support:** On-site comprehensive warranty will be effective from the date of successful installation and commissioning. The OEMs/Authorized Distributors and Dealers must attach a certificate of sales and service facilities, escalation support for on-call service or station engineer etc.
- 13. Imports:** In case, equipment is to be imported, the Indian agent should furnish authorization certificate by the principals abroad for submission of the bid in response to this Notice Inviting Tender.
- 14. Clarification of Tender Document:** A prospective bidder requiring any clarification of the Tender Document may communicate to the contact person given in this notice inviting tender. The contact person will respond to any request for clarification for the Tender Document received not later than 5 working days prior to the last date for the receipt of bids.
- 15. Amendment of Tender document:** At any time prior to the last date for receipt of bids, Institute may for any reason, whether at its own initiative or in response to a clarification requested by a prospective bidder, modify the Tender document by an amendment. Further, Institute may at its own discretion extend the last date for the receipt of bids.
- 16.** The bids shall be written in English language and any information printed in another language shall be accompanied by an English translation, in which case for the purpose of interpretation of the bid, the English translation shall govern.
- 17.** The Institute reserves the right of accepting any bid other than the lowest or even rejecting all the bids. The decision of the Purchase Committee is final in all matters of tender and purchase.
- 18. Cancellation of Tender:**
Notwithstanding anything specified in this tender document, NITK Surathkal in its sole discretion, unconditionally and without having to assign any reasons, reserves the rights:
- a) To accept OR reject lowest tender or any other tender or all the tenders.
 - b) To accept any tender in full or in part.
 - c) To reject the tender offer not conforming to the terms of the tender.
 - d) To give purchase preference to Public Sector undertakings when applicable as per Govt. Policy/ Guidelines.

19. Delivery Period: The Delivery Period/Time shall be deemed to be the essence of the Contract and delivery must be completed not later than such date(s). If the Supplier does not perform its obligations within the Delivery Period/Date mentioned in the Contract, the same would constitute the breach of the Contract and the Institute shall have the right to cancel or withdraw the Contract for the unsupplied portion after the expiry of the original or extended delivery date or period stipulated in the Contract. Such cancellation of contract on account of non - performance by the Supplier would entitle the Buyer to forfeit the EMD / Performance Security besides other actions such as debarment from the Institute as per GFR 2017.

20. Liquidated Damages: Timely delivery is the essence of contract and hence if the Supplier fails to deliver Goods within the original/extended delivery period(s) specified in the contract, the Institute will be entitled to deduct/recover the Liquidated Damages for the delay, unless covered under Force Majeure conditions aforesaid, **@ 1% per week or part of the week of delayed period** as pre-estimated damages not exceeding 5% of the contract value without any controversy/dispute of any sort whatsoever.

21. Terms of Payment:

- a. Payment within 30 days from the date of delivery and & Acceptance Certificate of concerned Department / Section / Purchase Section.
- b. Payment shall be made by Cheque or such other mode / electronic fund transfer offered by the Bank. NITK, Surathkal will not pay advance payment to party. Any request for Advance payment will be rejected summarily. In case if it is necessary, the advance payment will be paid strictly against Bank Guarantee only.
- c. Payment will be made by Standard Payment terms and conditions of NITK, Surathkal as per tender document only. Any request for a change in payment terms and conditions will not be accepted.
- d. If the above conditions are not acceptable then tender will be rejected.

22. Bidders are advised to inspect and examine the site and its surroundings and satisfy themselves before submitting their bid as to the nature of the installation site, the means of access to the site and in general shall themselves obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their tender. A bidder shall be deemed to have full knowledge of the site whether he inspects it or not and no extra charges consequent on any misunderstanding or otherwise shall be allowed. Submission of a bid by a bidder implies that he has read this notice and all other contract documents and has made himself aware of the scope and specifications of the installation to be done and local conditions and other factors having a bearing on the execution of the bid.

23. If there are varying or conflicting provisions made in any one document forming part of the contract, the Accepting Authority shall be the deciding authority with regard to the intention of the document and his decision shall be final and binding on the bidder.
24. The rate quoted by the bidder **shall be firm throughout the contract** period and there shall be no revision of the rates for any reasons whatsoever. It should be clearly understood that any claim for changes will not be entertained in any case once the bids are opened.
25. **One bid per bidder:** Each bidder shall submit only one bid either by himself or by representing a firm.
26. **Cost of bid:** The bidder shall bear all costs associated with the preparation and submission of his bid. The Institute in no case shall be responsible or liable for those costs.
27. The bidder shall not make or cause for any alteration, erasure or obliteration to the text of the tender document.
28. The Institute will declare a bidder ineligible, either indefinitely or for a specified period of time, at the sole discretion of the Institute, for the award of contract/ participating in any other tender, if at any time the Institute determines that he has furnished false information/ engaged in corrupt or fraudulent practices.
29. If any overpayment is detected as a result of the post-payment audit, it shall be recovered by the Institute from the Supplier out of his Performance Security.
30. **Determination of successful bidder:** The technically qualified bidder whose offer is evaluated as the **lowest total bid** shall be the successful bidder subject to its meeting the statutory requirements.
31. **Price variation:** The rate quoted by the bidder shall be firm throughout the contract period. No price variation clause is applicable to this contract.
32. **CANVASSING:**
- a) Canvassing in connection with tenders is strictly prohibited and the Tenders submitted by the Tenderers who resort to canvassing shall be liable to rejection.
 - b) Subject to the provisions concerning clarification of Bids, no Bidder shall contact the purchase committee on any matter relating to its bid from the time of the bid opening up to the time that the contract is awarded.
 - c) Any effort by the Bidder or Bidder's representative however described to influence the purchase committee in any way concerning scrutiny, consideration, evaluation of the Bid(s) or decision concerning award of contract shall entail rejection of Bid and action against the bidder as deemed fit.
 - d) The purchase committee will deal with the Bidder on a Principal basis, without involvement in any manner in India or abroad of any agent or consultant or associate or other person howsoever described.

33. LATE BIDS:

- a) Any bid received on or before specified time and date (including any extension(s) thereof) will be accepted and late submission of the bids will be declared as "Late" and shall be rejected.
- b) Unopened "Late Bid" shall be returned to the bidder in due course.

34. Legal Matter: All Domestic and International disputes are subject to Mangalore Jurisdiction only.

SECTION 2: CONDITIONS OF CONTRACT.

1. The rate quoted should be FOR NITK, Surathkal for Indian supplier.
2. In case of import CIF rates should be quoted. All components of expenditure to arrive by air at Bangalore need to be explicitly specified. If shipped by sea, nearest sea port is Mangalore/Chennai. In both cases, the item should be landed at NITK Surathkal and this responsibility is with the bidder.
3. The institute is eligible for customs duty / GST exemption.
4. The rate quoted should be on per unit basis. Taxes and other charges should be quoted separately, considering exemptions, if any.
5. Rate quoted should be inclusive of Testing, Commissioning and Installation of Equipment and Training.
6. **Payment:** No advance payment will be made. Payment will be made only after the supply of the item in good and satisfactory condition and receipt of performance security by supplier.
In case of Imports, the payment will be made through LC. Performance security needs to be submitted at the time of LC commitment.
7. Guarantee and Warranty period should be specified for the complete period conforming to the section 3 of this tender document.
8. Period requirement for the supply and installation of Equipment should be specified conforming to the Section 3 of this tender document.

SECTION 3: SCHEDULE OF REQUIREMENTS, SPECIFICATIONS AND ALLIED DETAILS

[To be filled up by the Department / Center of NITK, Surathkal]

Item(s) Name to be Procured : Field Emission Scanning Electron Microscope

Type (Equipment / Software / Furniture / Others) : Equipment

Brief Specifications of the Item(s)
(Attach Additional Sheet if necessary) : Please find in Annexure-H

Quantity : 1

Any other details / requirement : No

Warranty Period (in months) : 3 Years

Delivery Schedule expected
after release of Purchase order
(in Weeks) : 16 weeks

EMD
(2% of estimated value) : 6,00,000/- INR

Performance Security to be given
by Successful Bidder after release of
Purchase Order (in Rupees) : 10 % of the purchase order



NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA, SURATHKAL

SECTION 4 - PRICE BID (for indigenous Supplies)

[To be used by the bidder for submission of the bid]

Reference Number:

Date:

S. No.	Description of the Item and Specification	Qty. in Units	Unit Price (Rs.)	Discount %	Excise/Customs Duty %	GST (%)	Other charges if any (please specify details)	Total Price (Rs.)

1. Delivery Mode: Delivery at NITK Surathkal, at the site only.

Total Bid Price in the above column should be inclusive of all taxes and levies transport, loading, unloading etc.

Delivery Period:..... days.

Validity Date: Minimum 180 days from the date of submission of quotation/ tender.

2. Payment Term: Payment within 30 days from the date submission of bill Acceptance Certificate to concerned Dept./ Sect.

3. a) AMC Charges after warranty period :

b) Comprehensive AMC charges after warranty period :

Price Bids will be compared considering 3 a) or b). NITK reserves the right to consider 3 a) or 3 b) for price comparison.

PAN No. :

GST Registration No. :

Seal and Signature:.....

Name & Business Address:.....

Note: Price Bid should be submitted in given format only. For additional information/extra items above format may be typed and used.

Place:

Date:



NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA, SURATHKAL

SECTION 4 - PRICE BID (for Imported Supplies)

[To be used by the bidder for submission of the bid]

Reference Number: _____

Date: _____

S. No.	Description of Items & Specifications	HSN/SAC Code	Quantity in Units	IGST %	Price basis (CIF)	Total Bid Price
	Installation and Commissioning Charges (if any, quote in INR)					
	Agency Commission (if any quote in %)					
	Other Charges (please specify details)					
Grand Total						

HSN Code: Harmonised System of Nomenclature Code no. and # SAC Code: Service Accounting Code no.

1. Delivery Period:..... days.
2. Validity Date: Minimum 180 days from the date of submission of quotation/ tender.
3. a) AMC Charges after warranty period _____ :
b) Comprehensive AMC charges after warranty period: _____
Price Bids will be compared considering 3 a) or b). NITK reserves the right to consider 3 a) or 3 b) for price comparison.

1. Validity of the bid: 180 days from the date of submission of the quotation or tender.
2. Mode of Shipment: _____
3. Port of Shipment: _____

Place: _____

Date: _____

SECTION 5: CONTRACT FORM

[To be provided by the bidder in the business letter head]

1. (Name of the Supplier's Firm) hereby abide to deliver by the delivery schedule mentioned in section 3 tender document for supply of the items if the purchase order is awarded.
2. The item will be supplied conforming to the specifications stated in the tender document without any defect and deviations.
3. Warranty will be given for the period mentioned in the tender document and service will be rendered to the satisfaction of NITK, Surathkal during this period.

Signature of the Bidder: _____

Name and Designation: _____

Business Address : _____

Place:
Date:

Seal of the Bidder's Firm

Compliance Statement of Specifications

S.No.	Name of specification/Part/Accessories of tender enquiry	Specifications of the quoted Model / Item	Compliance Whether YES or NO	Deviations if any to be indicated in unambiguous terms

Signature and Seal of the Bidder

Previous Supply Orders Executed

Name of the firm: _____

Order placed by [Full address of the purchaser]	Order No. and Date	Order Value	Specified Delivery Date	Actual Delivery Date	Remarks indicating reasons for late delivery, if any and justification for the price difference of their supply order and those quoted to us	Has the equipment been installed satisfactorily?	Contact person along with telephone, mobile number, fax, and E-mail address

Signature and Seal of the Bidder

FORMAT OF DECLARATION
(To be submitted on Letterhead)

I / we Mr./Ms. _____, S/o/ of Mr. _____ aged about _____ years, resident of _____, working as -----(designation) for ----- (name and address of the bidding agency).

I solemnly affirm and state as under:

1. That I am working as ----- /proprietor of the ----- (name of the firm) and authorized to sign this declaration.
2. That the firm M/s---- (complete address of the firm) has not abandoned or suspended any contract work of any organization/ department so far/ during the previous five financial years.
3. That the firm M/s---- (complete address of the firm) has not been blacklisted/ debarred for competing in tenders by any organization/ department so far/ during the previous five financial years.
4. I solemnly confirm that the facts stated above are true and nothing has been concealed.

Seal and Signature of Bidder

INTEGRITY PACT AGREEMENT

(To be signed by the bidder/ same signatory authorized to sign the relevant contact)

This Integrity Agreement is made at Surathkal on this day of20

BETWEEN

National Institute of Technology Karnataka, Surathkal, an Institute of National Importance (under NIT Act -2007) represented through the Registrar, NITK, Surathkal (hereinafter referred as the '**Buyer**', which expression shall unless repugnant to the meaning or context hereof include its successors and permitted assigns)

AND

.....

(Name and Address of the Individual/firm/Company)

Through (Hereinafter referred to as the "Bidder/Contractor" and which expression shall unless repugnant to the meaning or context hereof include its succession and permitted assigns)

Preamble

WHEREAS **NITK Surathkal** has floated the Tender (Tender No-----
-- dated 00-00-2018) (Hereinafter referred to as "Tender/Bid") and intends to award, under laid down organizational procedure, contract for "**Furniture**"

[Hereinafter referred to as the "**Contract**").

AND WHEREAS the Principal/Owner values full compliance with all relevant laws of the land, rules, regulations, economic use of resources and of fairness/transparency in its relation with its Bidder(s) and Contractor(s).

AND WHEREAS to meet the purpose aforesaid both the parties have agreed to enter into this Integrity Agreement (hereinafter referred to as "**Integrity Pact**" or "**Pact**"), the terms and conditions of which shall also be read as integral part and parcel of the Tender/Bid documents and Contract between the parties.

NOW, THEREFORE, in consideration of mutual covenants contained in this Pact, the parties hereby agree as follows and this witness as under:

Article 1: Commitment of NITK Surathkal

- ii. **NITK Surathkal** commits to take all measures necessary to prevent corruption and to observe the following principles:

Seal and Signature of the bidder

Registrar, for NITK Surathkal

- (a) No employee of NITK Surathkal, personally or through any of his/her family members, will in connection with the Tender, or the execution of the 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) NITK Surathkal will, during the Tender process, treat all Bidder(s) with equity and reason. NITK Surathkal 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) NITK Surathkal shall endeavor to exclude from the Tender process any person, whose conduct in the past has been of biased nature.
- iii. If NITK Surathkal obtains information on the conduct of any of its employee which is a criminal offence under the Indian Penal code (IPC)/Prevention of Corruption Act, 1988 (PC Act) or is in violation of the principles herein mentioned or if there be a substantive suspicion in this regard, NITK Surathkal will inform the Chief Vigilance Officer and in addition can also initiate disciplinary actions as per its internal laid down policies and procedures.

Article 2: Commitment of the Bidder(s)/ Contractor(s)

- 1) It is required that each Bidder/Contractor (including their respective officers, employees and agents) adheres to the highest ethical standers, and report to the Government / Department all suspected acts of **fraud or corruption or Coercion or Collusion** of which it has knowledge or becomes aware, during the tendering process and through the negotiation or award of a contract.
 - 2) The Bidder(s)/Contractor(s) commit himself to take measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the Tender process and during the Contact 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/Owner's employees involved in the Tender process or 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 Contractor.
 - b. The Bidder(s)/Contractor(s) will not enter with other Bidder(s) into an 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 cartelize in the bidding process.
 - c. The Bidder(s)/Contractor(s) will not commit any offense under the relevant IPC/PC Act. Further the Bidder(s)/Contractor(s) will not use improperly, (for the purpose of competition or personal gain), or pass on to others, any information or documents provided by the Principal/Owner as
 - d. part of the business relationship, regarding plans, technical proposals and business details,
- Seal and Signature of the bidder Registrar, for NITK Surathkal

including information contained or transmitted electronically.

- e. The Bidder(s)/Contractor(s) of foreign origin shall disclose the names and address of agents/representatives in India if any. Similarly, Bidder(s)/Contractor(s) of Indian Nationality shall disclose names and address of foreign agents/representatives if any. Either the Indian agent on behalf of the foreign principals or the foreign principal directly could bid in a tender but not both. Further, in cases where an agent participates in a tender on behalf of one manufacturer, he shall not be allowed to quote on behalf of another manufacturer along with the first manufacturer in a subsequent/parallel tender for the same item.
- f. 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.
- iv. The Bidder(s)/Contractor(s) will not instigate third persons to commit offenses outlined above or be an accessory to such offenses.
- v. The Bidder(s)/Contractor(s) will not, directly or through any other person or firm indulge in fraudulent practice **means a wilful misrepresentation or omission of facts or submission of fake/forged documents in order to induce public official to act in reliance thereof, with the purpose of obtaining unjust advantage by or causing damage to justified interest of others and/or to influence the procurement process to the detriment of the Government interests.**
- vi. The Bidder(s)/Contractor(s) will not, directly or through any other person or firm use Coercive practices (means the act of obtaining something, compelling an action or influencing a decision through intimidation, there or the use of force directly or indirectly, where potential or actual injury may befall upon a person, his/her reputation or property to influence their participation in the tendering process).

Article 3: Consequences of Breach

Without prejudice to any rights that may be available to NITK Surathkal under law or the Contract or its established policies and laid down procedures, the Principal/Owner shall have the following rights in case of breach of this Integrity Pact by the Bidder(s)/Contractor(s) and the Bidders/Contractor accepts and undertakes to respect and uphold the Principal/Owner's absolute right:

- 1) If the Bidder(s)/Contractor(s), either before awarded or during execution of Contract has committed a transgression through a violation of Article 2 above or in any other form, such as to put his reliability or credibility in question, the Principal/Owner after giving 14 day notice to the contractor shall have powers to disqualify the Bidder(s)/Contractor(s) from the Tender process or terminate/determinate the Contract - if already executed, or exclude the Bidders/Contractor from future contract award processes. The imposition and duration of the exclusion will be determined by the severity of transgression and determined by the Principal/Owner. **Such exclusion may be forever or for a limited period as decided by NITK Surathkal.**

Seal and Signature of the bidder

Registrar, for NITK Surathkal

- 2) **Forfeiture of EMD/Performance Guarantee/Security Deposit:** If NITK Surathkal has disqualified the Bidder(s) from the tender process prior to the award of the Contract or terminate/determinate the Contract or has accrued the right to terminate/determinate the Contract according to Article 3(1), the Principal/Owner apart from exercising any legal rights that may have accrued to NITK Surathkal, may in its considered opinion forfeit the entire amount of Earnest Money Deposit, Performance Security of the Bidders/Contractor.
- 3) **Criminal Liability:** If NITK Surathkal obtains knowledge of conduct of a Bidder or Contractor, or of an employee or a representative or an associate of a Bidder or Contractor which constitutes corruption within the meaning of Indian Penal code (IPC)/Prevention of Corruption Act, or if the Principal/Owner has substantive suspicion in this regard, NITK Surathkal will inform the same to law enforcing agencies for further investigation.

Article 4: Previous Transgression

- 1) The Bidder declares that no previous transgressions occurred in the last 5 years with any other Company in any country conforming to the anticorruption approach or with Central Government or State Government or any other Central/State Public Enterprises in India that could justify his exclusion from the Tender process.
- 2) If the Bidder makes an incorrect statement on this subject, he can be disqualified from the Tender process or action can be taken for banning of business dealings/ holiday listing of the Bidder/Contractor as deemed fit by the Principal/Owner.
- 3) If the Bidder/Contractor can prove that he has resorted/recouped the damage caused by him and has installed a suitable corruption prevention system, the Principal/Owner may, at its own discretion, revoke the exclusion prematurely.

Article: 5 Equal Treatment of all Bidder/Contractors/Subcontractors

- 1) The Bidder(s)/Contractor(s) undertake(s) to demand from all subcontractors a commitment in conformity with this Integrity Pact. The Bidders/Contractor shall be responsible for any violation(s) of the principles laid down in this agreement/Pact by any of its Sub-contractors/sub-vendors.
- 2) The Principal/Owner will enter into pacts on identical terms as this one with all Bidders and Contractors.
- 3) The Principal/Owner will disqualify Bidders, who do not submit, the duly signed pact between the Principal/Owner and the bidder, along with the Tender or violate its provisions at any stage of the Tender process, from the Tender process.

Article 6: Duration of the Pact

This Pact begins when both the parties have legally signed it. It expires for the Contractor/Vendor 12

Seal and Signature of the bidder

Registrar, for NITK Surathkal

months after the completion of work under the contractor or till the continuation of defect liability period, whichever is more and for all other bidders, till the Contract has been awarded.

If any claim is made/lodged during the time, the same shall be binding and continue to be valid despite the lapse of this pacts as specified above, under it is discharged/determined by the Competent Authority of NITK, Surathkal.

Article 7: Other Provisions

- 1) This Pact is subject to Indian Law, place of performance and jurisdiction is **Mangaluru**, the Headquarters of NITK Surathkal, who has floated the Tender.
- 2) Changes and supplements need to be made in writing. Side agreements have not been made.
- 3) If the Contractor is a partnership or a consortium, this Pact must be signed by all the partners or by one or more partner holding power of attorney signed by all partners and consortium members. In case of a Company, the Pact must be signed by a representative duly authorized by board resolution.
- 4) Should one or several provisions of this Pact turn out to be invalid; the remainder of this Pact remains valid. In this case, the parties will strive to come to an agreement to their original intensions.
- 5) It is agreed on term and condition that any dispute or difference arising between the parties with regard to the terms of this Integrity Agreement / Pact, any action was taken by the Owner/Principal in accordance with this **Integrity Agreement / Pact or interpretation thereof shall not be subject to arbitration.**

Article 8: LEGAL AND PRIOR RIGHTS

All rights and remedies of the parties hereto shall be in addition to all the other legal rights and remedies belonging to such parties under the Contract/ or law and the same shall be deemed to be cumulative and not alternative to such legal rights and remedies aforesaid. For the sake of brevity, both the Parties agree that this Integrity Pact will have precedence over the Tender/Contract documents with regard any of the provisions covered under this Integrity Pact.

IN WITNESS WHEREOF the parties have signed and executed this Integrity Pact at the place and date first above mentioned in the presence of following witnesses:

.....
(For and on behalf of NITK Surathkal)

.....
(For and on behalf of bidder/ contractor)

WITNESSES:

1.
(Signature, name, and address)

2.
(Signature, name, and address)

Place: Surathkal.

Dated:

Format for Bank Account details of the bidder

Name of the account holder (bidder)	
Complete address	
Contact number	
Email address	

Bank Account details:

Bank name	
Branch name	
MICR number	
Account type	
Account Number	
Please re-type Account number again	
IFSC code of the Bank	

I hereby declare that the particulars given above are correct and complete. If the transaction is delayed or not effected at all for reasons of incomplete or incorrect information, I would not hold the Institute responsible for this.

I have read the option invitation letter and agree to discharge responsibility expected of me as a participant under the scheme.

Seal and signature of the bidder.

Certification from the banker:

Certified that the particulars furnished above are correct as per our records.

Seal and signature of the authorized officer of the bank.

FORMAT FOR PERFORMANCE GUARANTEE BOND

(To be typed on Non-judicial stamp paper of the value of Indian Rupees of One Hundred) (TO BE ESTABLISHED THROUGH ANY OF THE NATIONAL BANKS (WHETHER SITUATED AT MANGALORE OR OUTSTATION) WITH A CLAUSE TO ENFORCE THE SAME ON THEIR LOCAL BRANCH AT MANGALORE OR ANY SCHEDULED BANK (OTHER THAN NATIONALISED BANK) SITUATED AT MANGALORE. BONDS ISSUED BY CO-OPERATIVE BANKS ARE NOT ACCEPTED.)

To,
Registrar,
National Institute of Technology Karnataka,
Srinivasnagar P.O., Surathkal
Mangalore – 575025

LETTER OF GUARANTEE

WHEREAS National Institute of Technology Karnataka (Buyer) have invited Tenders vide Tender No..... Dt. for purchase of AND WHEREAS the said tender document requires that any eligible successful tenderer (seller) wishing to supply the equipment / machinery, etc. in response thereto shall establish an irrevocable Performance Guarantee Bond in favour of “**Registrar, National Institute of Technology Karnataka, Surathkal**” in the form of Bank Guarantee for Rs (10% (ten percent) of the purchase value) and valid till **one year or upto warranty period whichever is later** from the date of issue of Performance Guarantee Bond may be submitted within 30 (Thirty) days from the date of Order Acknowledgement as a successful bidder.

NOW THIS BANK HEREBY GUARANTEES that in the event of the said tenderer (seller) failing to abide by any of the conditions referred in tender document / purchase order / performance of the equipment / machinery, etc. this Bank shall pay to National Institute of Technology Karnataka, Surathkal on demand and without protest or demur Rs (Rupees.....).

This Bank further agrees that the decision of National Institute of Technology Karnataka, Surathkal (Buyer) as to whether the said Tenderer (Seller) has committed a breach of any of the conditions referred in tender document/purchase order shall be final and binding.

We, (name of the Bank & branch) hereby further agree that the Guarantee herein contained shall not be affected by any change in the constitution of the Tenderer (Seller) and/ or National Institute of Technology Karnataka, Surathkal (Buyer).

Notwithstanding anything contained herein:

1. Our liability under this Bank Guarantee shall not exceed Rs. (Indian Rupees only).
2. This Bank Guarantee shall be valid up to(date) and
3. We are liable to pay the guaranteed amount or any part thereof under this bank guarantee only and only if National Institute of Technology Karnataka (NITK) Surathkal serve upon us a written claim or demand on or before(date).

This Bank further agrees that the claims if any, against this Bank Guarantee, shall be enforceable at our branch office at situated at (Address of local branch).

Yours truly,
Signature and seal of the guarantor:
Name of Bank & Address:
Date:

Instruction to Bank: Bank should note that on expiry of Bond Period, the Original Bond will not be returned to the Bank. Bank is requested to take appropriate necessary action on or after expiry of bond period.

(To be typed on Non-judicial stamp paper of value Indian Rupees One Hundred)

(TO BE ESTABLISHED THROUGH ANY OF THE NATIONAL BANKS (WHETHER SITUATED AT MANGALORE OR OUTSTATION) WITH A CLAUSE TO ENFORCE THE SAME ON THEIR LOCAL BRANCH AT MANGALORE OR ANY SCHEDULED BANK (OTHER THAN NATIONALISED BANK) SITUATED AT MANGALORE. BONDS ISSUED BY CO-OPERATIVE BANKS ARE NOT ACCEPTED)

LETTER OF GUARANTEE

To

Registrar,
National Institute of Technology Karnataka,
Srinivasnagar P.O., Surathkal
Mangalore – 575025

IN ACCORDANCE WITH YOUR TENDER for supply of, M/s.
(hereinafter called the "Bidder") having its Registered Office at....., wish to participate in the said bid for the supply..... as an irrevocable Bank Guarantee against Earnest Money Deposit for an amount of Rs. (Rupees.....) valid up to **(180 days from the date of issue of Bank Guarantee)**, is required to be submitted by the bidder as a condition precedent for participating in the said bid, which amount is liable to be forfeited by the Purchaser on (1) the withdrawal or revision of the offer by the bidder within the validity period, (2) Non acceptance of the Letter of Indent / Purchase order by the Bidder when issued within the validity period, (3) failure to execute the contract as per contractual terms and condition with in the contractual delivery period and (4) on the happening of any contingencies mentioned in the bid documents.

During the validity of this Bank Guarantee :

We,(Bank name) having the registered Office at.....guarantee and undertake to pay immediately on first demand by NITK Surathkal, an amount of Rs..... (Rupees.....) without any reservation, protest, demur and recourse. Any such demand made by the NITK Surathkal shall be conclusive and recourse. Any such demand made by the purchaser shall be binding on the Bank irrespective of any dispute or difference raised by the Bidder.

The Guarantee shall be irrevocable and shall remain valid up to(180 days from the date of issue of Bank Guarantee) If any further extension is required, the same shall be extended to such required period on receiving instruction from the Bidder, on whose behalf the is Guarantee is issued.

Notwithstanding anything contained herein :

- * Our liability under this Bank Guarantee shall not exceed Rs..... (Rupees.....) .
- * This Bank Guarantee shall be valid up to..... (date).
- * We are liable to pay the guaranteed amount or any part thereof under this Bank Guarantee Only and only if you serve upon us a written claim or before..... (date).

This Bank further agrees that the claims if any, against this Bank Guarantee shall be enforceable at our branch office at situated at(Address of local branch).

Yours truly,

Signature and seal of the
guarantor: Name of Bank:
Address:
Date:

Instruction to Bank: Bank should note that on expiry of Bond Period, the Original Bond will not be returned to the Bank. Bank is requested to take appropriate necessary action on or after expiry of bond period

Detailed Technical Specifications**Item name: Field Emission Scanning Electron Microscope (FESEM) with Accessories**

Scope of Supply: The bidder should quote one unit of **Field Emission Scanning Electron Microscope (FESEM)**. The offered SEM should be a computer controlled SEM with all the required hardwares, softwares, accessories, standards and other consumables required for installation, commissioning, calibration of the unit at NITK Surathkal. System should be able to image (high resolution image) all kinds of materials, namely, polymer, ceramics, semiconductors, insulating and magnetic materials.

The bidder is responsible for complete installation, smooth operation, maintenance and comply of all warranty clauses for all the items ordered in this package. Even though order may be separate for different parts in the package, the bidder is responsible for all the items in the package.

Bidder has to ensure that all the items quoted under this package are new (Models must be released after 2015). Manufacturer has to give a certificate on the Model and the Year of the manufacture.

Compatible spares must be available for 7 years after they stop manufacturing the equipment.

Note:

- 1. As the finance is being arranged from different sources, bidders are requested to appropriately quote the basic machine around 140 lakhs INR. However, financial comparison is done after adding all optional units being purchased.**
- 2. Equipment may be shifted to another building within the campus after one to two year of installation. The equipment shifting should be free of cost.**
- 3. The supplier must provide one highly skilled full time Engineer at NITK (40 hours a week) with suitable expertise for training to designated users and providing technical assistance and routine maintenance of the proposed Field Emission Scanning Electron Microscope (FESEM) for a period of 3-year from the date of installation of the system in the institute. The institute shall have no responsibility for his/her service liabilities. The expenses for such service are to be included in the quote. The on-site engineer should be not only trained in operating, he should be as well as capable of installation and maintenance requirements for smooth uninterrupted functioning of the Field Emission Scanning Electron Microscope (FESEM).**

Details of specification of FESEM

Part 1

<p>1.1 Electron Optics</p>	<ol style="list-style-type: none"> 1. High stability Schottky field emission gun providing stable, high resolution beam currents, required for the operation of SEM under high vacuum mode. Life of Emitter should be guaranteed for 3 years period (In case of failure new emitter should be supplied free of cost). 2. Probe current in the range of 10 pA (or lower) to 100nA (or more). Continuous beam control and optimized aperture control required for that. 3. The range should be sufficient to operate all analytical techniques, such as EDS, WDS, EBSD, CL. 4. Voltage range: 100 V (or lower) to 30 kV (or higher). Lower range may be obtained with or without beam deceleration attachment. Change in voltage should be continuous using software control. 5. The system should have appropriate Electrostatic /hybrid lens or equivalent lens assembly for high resolution imaging of magnetic materials at a short working distance (from 5 – 10 mm). 6. In lens/Lens mounted BSD detector 8. The system should be able to apply user controlled bias to the specimen holder to reduce the landing energy of the incident electrons to approximately 50 V (or less). A variable beam deceleration/gentle beam/ Tandem <i>decel</i>/ beam booster unit may be included. If any other mechanism is employed state clearly and confirm the equivalence of the same. 9. Automated heated apertures to ensure cleanliness and touch free aperture changes. 10. Easy gun installation and maintenance procedures like-auto bake out, auto start, no mechanical alignments
<p>1.2 Resolution values</p>	<ol style="list-style-type: none"> 1. 1.0 nm or better at 15 kV (with SE detector); 1.3 nm or better at 1 kV and 1.1 nm at 1 kV with TD mode/GB mode.

	<ol style="list-style-type: none"> 2. Should able to analyse magnetic/non magnetic samples of nanometer scales 3. Water cooled objective lens geometry, facilitating larger tilt samples and ensuring high degree of beam stability. 4. The <u>definition of resolution is based on average method.</u> 5. Resolution claimed must be supported by printed literature. 6. NIST (National Institute of Standards and Technology) certified calibration sample to be provided for resolution
<p>1.3 Detectors</p>	<p>Following detectors should be supplied.</p> <ol style="list-style-type: none"> 1. High resolution Everhart –Thornley SE detector 2. In-Lens SEI detector for high resolution imaging at high vacuum/low kV 3. In –Lens BSE/Lens mounted BSE detector for high resolution imaging. 4. CCD camera for in-chamber viewing (to see top and side view of the sample) 5. A optional EDS detector (details are given later) 6. A optional STEM detector (details are given later) 7. A optional Heating stage (details are given later) 8. A optional micromechanical stage (details are given later)
<p>1.4 Sample stages</p>	<ol style="list-style-type: none"> 1. The specimen stage must be eucentric/ eucentric motorized goniometer stage. 2. The stage should be a 5 axis stage (x, y, z, tilt and rotation); x range: 100 mm or more; y range : 80 mm or more; z (height): 2mm (or less) to 20mm (or more); rotation 360° (continuously varying); tilt= -3° (or less) to +60° (or high); sample size= min 100 mm with full x, y and rotation freedom. The movement to be controlled through computer and manually by joystick or other similar mechanism. 3. Store and Recall of sample positions, functions to select features, center and zoom selected features, rotation, etc should be possible through the software 4. Position of the specimen stage in the sample chamber to be displayed by the CCD camera.

	<ol style="list-style-type: none"> 5. Specimen exchange should be possible through Airlock/Load lock/quick loader / One-action exchange mechanism. Sample exchange time should be less than 5 min. 6. FESEM should be isolated from external vibration. 7. Sample holder should be multispecimen holder (5 or more). 8. A plasma cleaner for removal of sample contamination. (Optional: Quote Separately)
<p>1.5 Vacuum system</p>	<ol style="list-style-type: none"> 1. Vacuum system should be completely automated (microprocessor controlled), consisting of Ion pump, Turbo molecular pump, oil free scroll pump, pneumatic valves, etc. 2. System should be compatible for electron (FEG) source against contamination during loading and unloading of the sample. Sufficient protection mechanisms to be provided. 3. Suitable protection mechanism for FEG source on sudden failure of vacuum pump operation is required. 4. Evacuation time: less than 5 min (after sample loading/unloading)
<p>1.6 Scanning and display</p>	<ol style="list-style-type: none"> 1. High definition display system (with 23inch or more) with 20 Megapixel or better for high quality image in real time under graphical user interface. 2. Imaging and processing should be optimised for the Field emission scanning electron microscopy 3. Image frame size: Selectable upto a pixel density of 4096 x 3536 or better 4. It should have autobrightness, autocontrast, autofocus and auto stigmator 5. Frame averaging upto at least 250 frames 6. Line averaging upto at least 250 lines 7. Combination of pixel and frame averaging 8. Combination of pixel and line averaging 9. Image: post – processing options 10. At least 2 additional detector input slots for future usage. <p>Image display</p> <ol style="list-style-type: none"> 9. High definition display system (with 23inch or more) with 20 Megapixel or better, with a LED Screen

	<p>10. Standard data zones like magnification, working distance, detector in use, Scale bar, operating voltage</p> <p>11. Multiple point to point and line width measurement systems, freely adjustable with orientation</p> <p>12. Line profile display</p> <p>13. Images should be viewed, averaged, and integrated.</p> <p>Image storage</p> <p>14. A 2 TB hard disk or better</p> <p>15. Front panel USB ports, CD/DVD recorder</p> <p>16. Storage of SEM images on hard disk in standard TIFF, BMP, JPEG formats in 8 bit or 16 bit depth</p> <p>17. Operating conditions need to be stored (and retrieved whenever in need)</p> <p>18. File management is through standard Microsoft Windows operating system</p>
<p>1.7 Accessories (to be quoted separately)</p>	<p>1. Appropriate UPS should be quoted for operating the SEM for atleast 60 min backup. The source power at NITK would be 220-235 V and 49-51 Hz. Battery system shall be sealed and maintenance free. Battery shall be properly wired and contained in a battery cabinet (each cabinet can have 6-8 batteries).</p> <p>2. If chiller is required for operation, must be included. Specify water requirements.</p> <p>3. Bidder should include all the spares + consumables required for operation during warranty period. List them separately.</p> <p>4. Compatible PCs for operation is to be provided. They need to be of latest configuration, operating on Windows. Computer required for SEM operation should be branded high speed computer.</p> <p>5. An additional PC to be provided for offline data processing/transfer, etc. with 1 TB storage (or more) and 16 MB RAM etc. Other than the SEM operating softwares, it should have Windows office software (Excel, powerpoint, MS word required). Adobe and office to pdf conversion software required. All the softwares should be licensed</p>

	<p>versions. Corresponding CDs should be given. Screen should be a large TFT flat screen (>23 inch)</p> <p>6. A latest color laser printer with 1200 x 1200 dpi should be included.</p> <p>7. Image navigation software to be included.</p>
<p>1.8 Other details</p>	<p>1. Training and Installation: Please quote one operator for 8 hrs x 6 days work basis. Operator may be diploma/BSc (or higher) qualified. NITK will not give any allowance for the operator. He may be given 15 days holiday/year, other than Sundays. However operator needs to contact incharge at NITK for day to day instruction and operating procedure. Bidder should quote this on yearly basis. Salary (including annual hike) to the operator need to be mentioned.</p> <p>2. Onsite training needs to be given to students so that 24 hrs X 7 days machine can be used (Minimum 3 students need to be trained at any time for independent operation). Number of the students operating independently will be decided by NITK. Training programs may be periodically arranged</p> <p>3. Item list will be checked at the time of the installation, by NITK in front of the bidder/representatives.</p> <p>4. Bidder shall quote for 3 years of AMC for the SEM and other units bought under this package. Quote AMC rate for 3 years after warranty period. Warranty for all the items in this package is for 3 years. AMC is for two service visits and two breakdown visit, during a year (12 months period). Comparison will be done after considering AMC values for 2 years, after warranty.</p> <p>5. Service response must be within 48 h. Breakdown period should not be counted as Warranty period and must be extended after the expiry of initial warranty period.</p> <p>6. Vendor should ensure a demolab or other sample analysing facility with similar/better model and analyse NITK samples free of cost during instrumental breakdown time exceeding 48 hr</p>

	<p>7. Pre-installment requirements like room size, power source, vibration tolerance, etc to be stated. If required NITK will call the bidder for clarification. Bidder will come to NITK, at his own cost. NITK is located along the west coast, where humidity is very high. If any special requirements to be met, state clearly.</p> <p>8. If additional facilities (power, gas, earthing, etc.) required for running SEM, Chiller, battery back up, etc. they need to be mentioned clearly.</p> <p>9. All the softwares should be original licensed version. The bidder should transfer all the licenses to NITK, during installation. If any of the software gets upgraded and if it is essential for smooth operation of the SEM, during warranty and AMC period, the bidder is supposed to provide them to NITK at free of cost. Bidder has to give a separate undertaking during bidding stage itself.</p> <p>10. Machine and associated humans should be protected from current, water leakage, vacuum, gas leakage, if any. Emergency switch is to be provided.</p>
<p>1.9 Documents</p>	<p>a. A copy of the operating manual, routine maintenance manual, attending procedures for routine problems, software back up, etc. need to be given.</p>

Part 2 : STEM detector, compatible to FESEM (Quote separately)

STEM detector should be configured to with a single central bright field (BF) mode and segmented 4 dark field (DF) detectors. System should be operable with normal bright field, normal dark field, dark field with phase contrast, high angle annular dark field (HAADF). Dark field image should be possible at different voltages, possible in SEM. Resolution can be 0.8 nm (or better) at 30 kV.

Part 3: Micromechanical materials testing unit, compatible to FESEM (Quote separately)

- i. This module will facilitate dynamic studies of mechanical properties at the microstructural level inside SEM.
- ii. A wide variety of materials (low compliance and high compliance) should be tested.

- iii. Grips for flat specimen in horizontal position (tension and compression), 3 point bending, 4 point bending configuration should be quoted, if they are not part of the standard unit.
- iv. Grips for fiber testing to be quoted.
- v. Extension between the grips through precise extensometer or through other precise tools
- vi. Grip movement to be monitored with optical encoders and to be controlled through precise gearbox. Extension rate: 0.1 mm /min to 1.5 mm/min
- vii. Operation in both tensile and compressive mode should be possible
- viii. System should facilitate constant speed, constant load or low frequency cycling modes of operation
- ix. Load/extension to be plotted in real time on a graphical display for further processing should be possible.
- x. Export of data either as text or excel data sheet should be possible.
- xi. Sample to be symmetrically loaded at two ends, with sample centered within the SEM field of view.
- xii. Resolution of the load cell > better than 0.1% of the range. Accuracy > 1% of the range. Load cell in the range of 1 kN to 3kN (maximum values).
- xiii. Sample size (max)= 50 x15x10 (L, B, H. All are in mm), Minimum can be fibers or micrometer thick sheets.
- xiv. Movement of the grip during loading = min 10 mm
- xv. Provision for detaching from SEM and take it outside should be available.

Part 4: Compatible heating module upto 800 °C (or higher) (Quote separately)

- i. The module should be properly insulated and should not damage other systems in use.
- ii. Temperature range: room temperature to 800 °C,
- iii. Dynamic observations of phase transformations and microstructural changes with respect to temperature should be possible using standard SEM detectors.
- iv. Module should facilitate heating. Under such cases remaining part of the SEM should not get damaged. Proper sealing/protection should be ensured.
- v. Samples, upto 25 mm in disc shape, should be possible.
- vi. Temperature should be controlled using a PID controller (using a PC as interfacing tool). Temperature should be attained with a controlled heating, which can be set up the operator. Controlled heating, temperature ramping, cycling should be possible.

Part 5: EDS detector compatible to FESEM

An energy dispersive X-ray spectrometer (EDS) compatible to the above SEM should be provided.

Specifications of EDS

1. It should detect all the elements from Boron to Uranium with a detection ability of Mn K α 129 eV (or better) and C K α 54 eV (or better)
2. Detector area be 30 mm² (or more) working on Silicon drift detector (SDD) technology
3. Detector needs to be protected from the possible contamination through ultrathin window or other mechanisms
4. The EDS detector should be a fast detector capable of handling a count rate of 50,000 cps or more
5. The EDS detector should be LN₂ free system using vibration free Peltier cooling technology
6. The EDS detector and related hardware should be extremely stable and peak shift < 1eV and resolution better than 1 eV. All these should be clearly available in the brochure.
7. It should be capable of providing qualitative, quantitative and mapping analysis. EDS data at a point, over a line and over a area should be possible.
8. The EDS system should be able to acquire the FESEM images for reference, with a resolution of atleast 8,000 pixel x 6000 pixel.
9. EDS to be operated through independent PC which is linked to main PC. It should have licensed softwares. Softwares CDs to be handed to NITK during installation.
10. The softwares of the EDS system should be compatible with latest operating system. Data transfer to all parts of the software should be automatic. Software must provide option for report generation on its own with print options as well as option for data exports.
11. Software must provide option for automatic peak labeling and Auto ID routine during data acquisition stage.
12. Quantitative analysis of data from the microscopic region should be possible. Algorithms for analyzing polished flat specimens, fractured samples and nanostructured particulate systems. Quantification should be with K, L, M, N database. Real time elemental mapping with quantification based on ZAF, PhiZAF.
13. System should able to perform X-ray mapping of all elements starting from Boron to Uranium. Mapping resolution must be atleast 4000 pixel x 3000 pixel. Also, line scanning, point analysis, real time elemental mapping should be possible. Background noise reduction, simultaneous imaging and analysis should be possible.
14. All standard softwares required for analyzing to be quoted. The window should be ultra thin window or equivalent for better performance, for detection of light elements.

15. Movement of the EDS detector, in and out of its regular position should be motorized and to be controlled through manual and system software.
16. Data acquisition in the ASCII form and export in the form of ASCII values of the EDS spectra to regular Microsoft sheets for later processing.
17. Warranty, AMC and other conditions are similar to that mentioned in the details for FEGSEM.
18. Certified calibration standards for EDS analysis

Checklist for BIDDERS

BIDDERS to indicate whether the following are enclosed/mentioned by striking out the non- relevant option and the relevant technical bid documents should be in order.

Sl. No.	Documents	Content	Document Attached
1	Technical Bid	Self-Attested copy of GST & PAN Number	(Yes /No) Pg. No.
2		Licence certificate for manufacture /supply of the item & Factory license. Registration with EPF and ESI	(Yes /No) Pg. No.
3		Undertaking that the successful BIDDER agrees to give a 10% Performance Security.	(Yes /No) Pg. No.
4		Catalogue of the Product with detailed product specifications.	(Yes /No) Pg. No.
5		Copy of Balance Sheet	(Yes /No) Pg. No.
6		List of Owner/partners of the firm and their contact numbers (Bidder Information)	(Yes /No) Pg. No.
7		Contract form given in section 5	(Yes /No) Pg. No.
8		Format of compliance statement of specification as per Annexure-'A'	(Yes /No) Pg. No.
9		Previous Supply Order as per Annexure-'B'	(Yes /No) Pg. No.
10		Declaration of abandoned or suspended any awarded service & Blacklist Certificate. Annexure 'C'	(Yes /No) Pg. No.
11		Integrity Pact. Annexure 'D'	(Yes /No) Pg. No.
12		Bank details of the bidder. Annexure 'E'	(Yes /No) Pg. No.
13		EARNEST MONEY DEPOSIT Annexure -G In case of exemption from submission of EMD, proof of registration with NSIC/MSME	(Yes /No) Pg. No.
1	Financial-Bid	Price bid	(Yes /No)

Seal and Signature of the bidder