

TATA INSTITUTE OF FUNDAMENTAL RESEARCH

Centre for Interdisciplinary Sciences

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Date: 26-12-2016

Notice Inviting Tender cum Tender Document (Two Part Public Tender) for the following items:

Supply, Installation and Commissioning of Scanning Electron Microscope with accessories.

As per our technical specifications: Qty. - 1 No.

Public Tender No.	TFR/PD/IC16-614/0029
Published on	28-12-2016
Tender Fees	For Indian Supplier - Rs. 700/-
	For Foreign Supplier - USD 100
EMD	For Indian Supplier - Rs. 5,20,000/-
	For Foreign Supplier - USD 7650
Estimated Cost	Rs. 260.00 Lakhs
Last Date for Submission of Bid	24-01-2017 upto 13.00 Hrs.
Date of Opening Bids (Part A)	24-01-2017 at 14.00 Hrs.

Both Technical Bid (Part A) and Financial Bid (Part B) to be submitted within the due date and time in separate envelopes and marked on top as Part A and Part B. These two sealed envelopes should be further put in one Master Envelope super scribed with the Tender No., Due Date in Bold Letters.

Please see attached sheet for conditions of tender.

**ADMINISTRATIVE OFFICER
(PURCHASE SECTION)
TIFR-TCIS, HYDERABAD**

SCOPE OF SUPPLY - ANNEXURE A

Technical specifications for Supply, Installation and Commissioning of Scanning Electron Microscope with accessories.

SEM Specifications:

General:

Supply, installation, commissioning and on-site training in the use of a Field Emission Scanning Electron Microscope, with an operating voltage of 30 kV or higher, capable of the following functions:

- a. 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);
- b. Charge Reduction mode for non-conductive or insulating specimen;
- c. Energy Filter mode for detection of appropriately selected energy range of the emitted electrons from the specimen;
- d. Integrated with Energy Dispersive X-Ray detector for qualitative and quantitative microanalysis;
- e. System should be upgradeable to allow WDS attachments.
- f. The system should allow simultaneous EDX, WDX analysis at the same working distance
- g. The system should be capable of working as an environmental SEM with a variable pressure mode for observation of biological/ non conducting specimens and the pressure should be adjustable from 10 – 300 Pa or more.

Secondary electron image resolution: 2.0 nm or better at accelerating voltage of 1 kV and 1.2 nm at accelerating voltage of 30 kV OR better.

Magnification range: from x 10 to x 800,000 times or better.

Accelerating voltage: variable from 0.1 kV to 30 kV.

Electron gun: Schottky field emission type. The emitter should be covered under warranty at least for two years.

The probe current should be continuously adjustable by software control up to at least 200nA.

Imaging with secondary electrons (SE), back-scattered electrons (BSE) and low vacuum SE detector are required.

Simultaneously display of maximum of four live images on the monitor.

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.

All specimen exchange must be performed through a load lock system. Minimum specimen size through the load lock must be 100mm diameter. The load lock status should be displayed on the Graphic user interface.

Automated and fully eucentric goniometer type specimen stage. The stage movement should be fully motorized (at least 4 axis) in the X, Y, Z, tilt and rotation direction.

The minimum requirement for movement ranges are:

- X (mm) : 60 mm or better
- Y (mm) : 40 mm or better
- Z (mm) : 2 mm to 40 mm or better
- Tilt (°) : -5° to 70°
- Rotation (°) : 360° endless, motor driven

The position of the specimen stage should be graphically displayed on the monitor

An in-situ plasma cleaner must be provided that will clean the sample space and the column from any contaminations, such as carbon.

An infra-red device should be attached to the specimen chamber to facilitate viewing inside the specimen chamber.

Vacuum System:

The vacuum system should comprise an SIP, TMP and an RP.

One set of uninterruptable power supply (UPS) for the ion pumps must be supplied along with system. The UPS should be able to support the ion pumps for at least 200 hours continuously when there is a power failure.

Image Processing Software:

Image processing functions such as image averaging, integration, pseudo colour etc. should be included. Two-division and four-division image display should also be possible.

Line width measurement capability must be included.

Microanalysis (EDS)

- LN2 free SDD type Peltier cooled detector with active area more than 60 mm Sq and resolution 126 eV at Mn K alpha and Carbon Resolution better than 51 eV or better .
- Mechanical adaptor to provide to tilt the detector to view samples at higher working distance.
- Element detection range would be from Beryllium to Americium.
- Input count rate over 1500 Kcps
- Output count rate over 600000Kcps
- Motorised insertion for precise location of the detector
- Please attach the catalogues published on web site.

- User interface should be friendly and capable of Multi element mapping, line scan. Elemental analysis with K L M N line data for precise element detection and quantification with option to see Peak Deconvolution .
- Standard less analysis with automatic background subtraction and Manuel background subtraction option. Standard less Quantification method should be based on ZAF and Phi Rho Z algorithm.
- Latest issue of research grade Software should be quoted.
- The software must cable to select region of interest in square rectangle polygon grid line ellipse form.
- User should have access to detector calibration. If any standard sample is required for calibration the same should be quoted optionally.
- The software platform must be compatible with EBDS MICROXRF WDS in future upgrade.

Optional Items:

1. In situ Nano-indentation specimen characterization.

2. In situ 4 probe electrical probe.

3. Lithography:

An electrostatic beam blanker with high speed (better than 10 MHz) dual DAC addressing for X and Y main beam deflection (16 bit) with full software control must be provided and installed. Dedicated service support team for the beam blanker and software must be available in India.

Optional Items/Accessories:

The optional Accessories will not be considered for evaluation of lowest bidder. The Optional items may be procured based on requirement from the techno commercially qualified lowest bidder.

Safety Features:

Protection features against vacuum, water and power must be provided.

Training and installation:

The supplier shall do the instrument installation site investigation and confirmation of the vibration isolation, electromagnetic shielding etc. prior to the installation, and further install and commission the system immediately after delivery. System installation shall be carried out by factory trained engineers. Training on the operation of the system by experienced and qualified engineer must be provided on-site.

Relocation of the equipment: Dismantling of equipment, Shifting/transportation of material from TCIS transit campus to TCIS, FReTB new campus, Reinstallation, calibration of equipment and successful commissioning is supplier's scope if any. However a separate quote for this relocation may be provided along with the financial bid with the minimum validity period of one year extendable further if required from the date of installation of the instrument. This quote will not be considered for evaluation of lowest bidder.

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(PURCHASE SECTION)

Terms and Conditions

1. **PART "A" (Technical Bid) consisting of Technical Bid with Commercial Terms and PART "B" (Financial Bid) consisting of only Price** shall be submitted in **separate** sealed envelopes duly superscribed with the tender enquiry number, and the due date in bold letters, addressed to the Purchase Officer, Tata Institute of Fundamental Research, 21, Brundavan Colony, Gandipet Road, CBIT Post Office, Hyderabad -500 075. The envelopes should be clearly marked on top as either PART "A" or PART "B".

The two sealed covers should be further put in a master cover superscribed with the Tender Enquiry No., Due Date in bold letters, addressed to the Purchase Officer, Tata Institute of Fundamental Research, 21, Brundavan Colony, Gandipet Road, CBIT Post Office, Hyderabad - 500 075. The sealed master envelop has to be delivered by hand/courier at the security Gate Office of TIFR-TCIS on or before 13.00 hrs. on the due date specified. The technical bid will be opened in the presence of attending tenderers at 14.00 hrs. on the due date at Purchase Section, TIFR-TCIS, Hyderabad. Tenders submitted after 13.00 hrs. on due date will not be considered.

2. **In case the PART "A" and Part "B" bids are not sealed in separate envelopes the tender will be rejected.**
3. The technical bid should not contain any indication of the price. The bidder should take special care not to mention anything related to pricing and costing aspect of whatsoever nature. The technical bid should include/contain only technical specifications, technical literature, drawing, quantity, manufacturing and delivery schedule, mode and terms of payment, mode of dispatch, the quantum and percentage of statutory levies payable by the purchaser as extra and all related commercial terms and conditions for the supply and for the services like erection and commissioning to be rendered by the tenderer. The details of the validity of the tender should also be indicated along with the commercial details.
4. After scrutiny of Technical Bids, Financial bids of only those bidders who are shortlisted on technical basis will be opened at on later date. The opening date, time and venue will be intimated to the technically successful bidder.
5. **Tender Document Fee:**
 - a) **For Indian Supplier:** Tender fee for **Rs. 700/-** (Non-refundable) in the form of D.D. in favour of "TIFR Centre for Interdisciplinary Sciences", payable at Hyderabad to be enclosed with the Technical Bid (Part - A).
 - b) **For Foreign Supplier:** Tender fee of **USD 100** (Non-refundable) in the form of advance cheque in favour of "TIFR Centre for Interdisciplinary Sciences", payable at Hyderabad to be enclosed with the Technical Bid (Part A).

6. **Earnest Money Deposit (EMD):**

- a) **For Indian Supplier:** Earnest Money Deposit (EMD) for **Rs. 5,20,000/-** in the form of D.D. in favour of "TIFR Centre for Interdisciplinary Sciences", payable at Hyderabad to be enclosed along with the technical Bid (Part - A).
- b) **For Foreign Supplier:** Earnest Money (EMD) for **USD 7650** in the form of advance cheque in favour of "TIFR Centre for Interdisciplinary Sciences", payable at Hyderabad to be enclosed with the Technical Bid (Part - A).

EMD shall be interest free and it will be refunded to the unsuccessful bidder without any interest. EMD will be forfeited if the bidder withdraws or amend impairs or derogates from the tender in any respect.

7. **Bidders who have not accepted the job/order awarded to them or withdrawn from the tender process OR whose EMD/Security deposit has been forfeited in the past their bids will not be considered and treated as ineligible / disqualified.**

8. After downloading the documents please inform your company details such as name, address, telephone nos., contact person and email address etc. by email to us. (harid@tifrh.res.in, srinub@tifrh.res.in) to enable us to inform prospective bidder for any corrigendum/changes if any; in the Tender document before due date.

9. Quotations must be valid for a period of 180 days from the due date.

10. Tenders containing correction, overwriting will not be considered. Late or delayed/Unsolicited quotations/offers shall not be considered at all. These will be returned to the firms as it is. Post tender revisions/corrections shall also not be considered.

11. Tenderer should sign on all the pages of the technical bid and the price bid.

12. The price quoted for Import item must be on following basis:

- a) Ex-Work/factory duly packed airworthy/seaworthy and of international standard
- b) FOB/FCA
- c) CIF Hyderabad, Airport Port (all-inclusive i.e. Cost of Goods, Packing, Insurance, Inland transportation, freight etc.)

For local item /supply, offer should be on FOR basis (i.e. total landed cost for delivery at TIFR-TCIS, Hyderabad).

The dimension of the item (viz. H, W, L, weight etc.) shall be specifically stated and also mention whether the mode of shipping the item is Airworthiness / Seaworthiness or both. Accordingly the mode of shipment will be decided by TIFR-TCIS.

Price must be quoted in the Price Bid Format attached herewith as "Part -B" (Financial Bid).

13. If equipment offered is to be imported, arrangements for import will be made by us.

14. Tenders who do not comply with any of the condition are liable to be rejected.
15. The Institute shall be under no obligation to accept the lowest or any other tender received in response to this tender notice and shall be entitled to reject any tender without assigning any reason whatsoever.
16. TIFR reserves the right to place the order for part/reduced quantity than what is specified in the tender.
17. **PAYMENT TERMS:** 80% payment shall be made through irrevocable L/C on presentation of complete and clear shipping documents and balance 20% of the amount shall be released after the receipt, installation, commissioning and acceptance of the equipment and on submission of "**Performance Bank Guarantee (PBG)**" or "**Standby Letter of Credit**" for an amount equivalent to 10% of the Purchase Order Value. The PBG or "Standby Letter of Credit" shall be valid for a period of **60 days** beyond the date of warranty period. The PBG should be from State Bank of India & Associates (or) any one of the Nationalized Banks.
18. For Import cases: **No Agency commission will be paid as per Govt. of India rules.**
19. TIFR is exempted from paying of Custom Duty under the notification No.51/96 dated 23.07.1996, Excise Duty under the notification No.10/97 dated 01.03.1997, for all procurements/supply meant exclusively for Educational, scientific and research purpose. Whenever the exemption certificate not honored by the authorities, the applicable duty will have to be paid. Hence Excise & Custom duties, if any, should be shown separately.
20. **SALES TAX:** TIFR does not have any exemption/concession on payment of Sales Tax/VAT and we are not authorized to issue any Sales Tax Form 'C' & 'D'
21. **The Supplier shall arrange to ship the ordered materials within the mutually agreed delivery period mentioned in the order unless extended with/without penalty.**
 - a) In case of delay in supply on part of the supplier, a penalty @0.5% per week of order value will be charged for delayed period subject to a maximum of 10% order value.
 - b) If the delay in the shipment of the ordered materials attributable to the supplier exceeds agreed time period from the date of original agreed upon date of shipment and extended with/without penalty, the TIFR-TCIS, Hyderabad shall have the right to cancel the contract / purchase order and recover the liquidated damages from other dues of the party or by legal means. It will also affect the other/future business dealings with such suppliers.
 - c) The same rate of penalty shall be applicable for late installation of the equipment/instrument also.

22. **COMMENCEMENT OF WARRANTY PERIOD:** The warranty period of an item shall commence from the date of receipt of the item in good working condition and satisfactory installation/commissioning/demonstration at the project site.
23. **ANNUAL MAINTENANCE CHARGES:** The bidder must mention in the quotation, the rate/amount of annual maintenance charges, if we opt for maintenance contract after expiry of the warranty period.
24. Specifications are basic essence of the product. It must be ensured that the offers must be strictly as per our specifications. At the same time it must be kept in mind that merely copying our specifications in the quotation shall not make the parties eligible for consideration of the quotation. A quotation has to be supported with the printed technical leaflet/literature of the quoted model of the item by the quoting party/manufacturer.
25. **OBSERVANCE OF LOCAL LAWS:** Wherever applicable (particularly for Local vendors), the vendor / contractor shall comply with all law, statutory rules & regulations etc. The vendor/ contractor shall obtain all necessary permits / approval from the local Governing Body, Police, and other concerned Authorities as may be required under law. The vendor /contractor shall pay all types of taxes, fees, license charges, deposits, duties, tolls, royalty or other charges that may be leviable account of any of the operations connected with the execution of this work/ contract.
26. In case of any interpretational issues arises in this tender, the interpretation/decision of TIFR TCIS shall be final and binding on the bidder.
27. It is the responsibility of the vendor to make sure that the system being proposed can be exported to India with TIFR TCIS as the end user. All clarificatory documentation must be submitted with the Bid.
28. TIFR TCIS reserves the right to ask for or to provide any clarification, changes after the release of this tender. Any changes or clarifications provided by TIFR-TCIS, Hyderabad may be checked at TIFR-TCIS website: <http://www.tifrh.res.in/index.php/commercial-tenders>

**ADMINISTRATIVE OFFICER
(PURCHASE SECTION)
TIFR-TCIS, HYDERABAD**

Financial Bid for Scanning Electron Microscope with accessories (Part - B)

Annexure - C

TIFR- TCIS Enquiry No & Date: _____

Due date: _____

Bidder's Quotation Ref No. & Date: _____

Financial Bid (Bidders must quote their rates using this Format)

S.No.	Item Description as per tender	Make/Brand/ Type	Qty.	Rate per unit (Currency)	Basic Cost of main item (In Currency)
A.					
B.	Ex-Works cost (Duly packed Airworthy/Seaworthy of international standard)				
C.	FOB /FCA Cost (Name of Airport_____)				
D.	CIP/CIF Cost (Upto Hyderabad Airport)(all inclusive i.e. Cost of Goods, Packing, Insurance, Inland transportation, freight etc.)				

Note:

1. All the column should be appropriately filled and not left blank.
2. Do not include any other charges, taxes, duties etc. in the Basic Cost of the item.
3. Any accessories, optional items should be shown separately using above format.
4. Use separate sheet for detail description, specification of the item, but prices should be quoted in same format.
5. Prices quoted in Indian Currency should be on F.O.R. basis and mentioned separately using different table format showing all the applicable taxes/Duties like Excise, VAT, service Tax, Freight & Transportation charges and installation charges etc.
6. TIFR-TCIS being educational & research institute, discounted price shall be offered.

Signature of the Bidder

Name, Address contact no _____

& email id of the bidder/ _____

Company with company's Stamp or Seal _____

Date: _____

Place: _____