

TATA INSTITUTE OF FUNDAMENTAL RESEARCH
Centre for Interdisciplinary Sciences, 21 Brundavan Colony, Gandipet Road,
CBIT Post Office, Hyderabad - 500 075

PUBLIC TENDER NO :	TCIS/PCH/IC14-0230/PUB
PUBLISHED ON :	07.02.2015
DUE DATE :	27.02.2015
COST OF TENDER :	Approx. Rs. 300 Lakhs
TYPE OF TENDER :	TWO PART

DESCRIPTION OF MATERIAL

Scanning Electron Microscope with accessories - 1 No.
(As per our technical specifications)

Closing time and date :	14.00 Hours on 27.02.2015
Tender will be open at :	15.00 Hours on 27.02.2015

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.

(D. Hariprasad)
Administrative Officer

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.

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 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

A liquid Nitrogen trap should be provided to minimize contamination from entering the objective lens.

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)

A microanalytical system, computer and software should be attached to the microscope for energy dispersive microanalysis. It should detect all elements from Boron to Uranium and must have a detector resolution of at least $Mn\alpha$ 129 eV. Must be an LN2 free system using vibration free thermoelectric Peltier cooling technology. The detector crystal area should be at least 80 mm².

The software of the EDS system should include:

Data transfer to all parts of the software must be automatic and requires no user intervention.

Software screens must include bubble help to guide user systematically through required operations.

The software must provide automatic peak labeling during spectrum acquisition without the need for user intervention.

The software must provide quantitative analysis automatically using information from the microscope and qualitative analysis.

The system must allow standard less, mixed standardised/standardless and standardised analysis using XPP or other similar quantitative algorithm.

The system should be able to perform X-ray mapping for all elements from Boron to Uranium.

Safety Features

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

Training and installation

The supplier shall 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.

TERMS AND CONDITIONS

1. **PART “A” (Technical Bid) consisting of Technical Bid & 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 Administrative Officer, Tata Institute of Fundamental Research, 21, Brundavan Colony, Narsingi, Gandipet Road, 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 Administrative Officer, Tata Institute of Fundamental Research, 21, Brundavan Colony, Narsingi, Gandipet Road, Hyderabad - 500 075. The sealed master envelop has to be delivered by hand/courier at the security Gate of TIFR, Hyderabad on or before 14.00 hrs on the due date specified. The technical bid will be opened in the presence of attending tenderers at 15.00 hrs on the due date at Administration Section, TIFR, Hyderabad. Tenders submitted after 14.00 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.
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 bidders.
5. The firm who wishes to download the specifications, terms and conditions may do so. While submitting the quotation, a **DD of Rs. 500/-** for each tender drawn in favour of "Tata Institute of Fundamental Research, Hyderabad" payable at Hyderabad may please be enclosed along with Technical Bid. In case of Foreign Suppliers prepare advance cheque for **US\$100**.
6. 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. (msrilatha@tifrh.res.in, harid@tifrh.res.in), to enable us to inform prospective bidder for any corrigendum/changes if any, in the Tender document before due date.
7. Quotations must be valid for a period of 180 days from the tender opening date.
8. Tenders containing correction, overwriting will not be considered. Late or delayed/unsolicited quotations/offers shall not be considered at all. Post tender revisions/corrections shall also not be considered.
9. Tenderer should sign on all the pages of the technical bid and the price bid.
10. The offer for Import item should indicate separately the price on Ex-works basis (duly packed airworthy and of international standard). For local item / supply, offer should be on FOR basis (i.e., total landed cost of delivery at TIFR Hyderabad). The dimensions 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. Accordingly the mode of shipment will be decided by TIFR.
11. If equipment offered is to be imported, arrangements for import will be made by us.
12. Tenders who do not comply with any of the conditions are liable to be rejected.

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13. 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.
14. TIFR reserves the right to place the order for part/reduced quantity than what is specified in the tender.
15. **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.
16. For Import cases: **No Agency commission will be paid as per Govt. of India rules.**
17. 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.
18. **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“
19. The delivery period should be specifically stated and earlier delivery may be preferred.
20. **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, 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.
21. **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.
22. **ANNUAL MAINTENANCE CHARGES:** The party must mention in the quotation, the rate/amount of annual maintenance charges, if we opt for maintenance contract after expiry of the warranty period if necessary.
23. 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.

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24. **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 on account of any the operations connected with the execution of this work/ contract.
25. In case of any interpretational issues arises in this tender, the clarifications/decision of TIFR shall be final and binding on the bidder.
26. It is the responsibility of the vendor to make sure that the system being proposed can be exported to India with TIFR as the end user. All clarificatory documentation must be submitted with the Bid.
27. TIFR 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 may be checked at TIFR website <http://www.tifrh.res.in/tcis/contact/tenders.html>**

Administrative Officer
TIFR - Hyderabad