



भारतीय विज्ञान शिक्षा एवं अनुसंधान संस्थान मोहाली

मानव संसाधन विकास मंत्रालय, भारत सरकार द्वारा स्थापित

सैक्टर 81, नॉलेजसिटी, प०ओ० मनोली, एस० ए० एस० नगर, मोहाली, पंजाब 140306

INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH MOHALI

(Established by Ministry of Human Resource Development, Govt. of India)

Sector-81, Knowledge city, PO-Manauli, SAS Nagar Mohali-140306, Punjab

PAN No. - AAAAI1781K TAN NO. PTLI10692D

• Phone : +91-172-2240086 & 2240121 • Fax : +91-172-2240124, 2240086 • <http://www.iisermohali.ac.in> • Email: stores@iisermohali.ac.in

CPPP/Institute Website

IISERM (989)18/19 Pur

Dated- 13th April 2018

E-TENDER NOTICE

Online tenders are invited on behalf of Director, IISER Mohali in **TWO BID SYSTEM** {Technical and Commercial} for the Supply and Installation of **High Resolution Field Emission Scanning Electron Microscope** as per technical specification given below and BOQ list the original manufacturer/supplier at CPPP i.e. <https://eprocure.gov.in/eprocure/app>. Tender documents may please be downloaded from the E-procurement portal website <https://eprocure.gov.in/eprocure/app> & Institute website www.iisermohali.ac.in.

-sd-

(Mukesh Kumar)
Assistant Registrar (S&P)



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E-TENDER NOTICE

Tender Ref.- IISERM(989)18/19 Pur	Dated :- 13 th April 2018
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Critical Date Sections

Sr.	Description	Date	Time
1.	Tender Publishing Date and time	13 th April 2018	6:00pm
2.	Tender Document download start Date & Time	13 th April 2018	6:00pm
3.	Bid Submission start Date & Time	13 th April 2018	6:00pm
4.	Bid Submission End date and Time	30 th April 2018	Upto 11:00am
5.	Tender opening Date and Time	1 st May 2018	At 11.30 am

Online tenders are invited on behalf of Director, IISER Mohali in **TWO BID SYSTEM** {Technical and Commercial separately} for following item(s) from the original manufacturer/supplier at CPPP i.e. <https://eprocure.gov.in/eprocure/app>. Tender documents may please be downloaded from the E-procurement portal website <https://eprocure.gov.in/eprocure/app> & Institute website www.iisermohali.ac.in. Tender fee in shape of DD/Banker Cheque of Rs 500/- (Non-refundable) and EMD of Rs. 6,60,000/- should be submitted by DD /Banker Cheque/FDR/ Bank Guarantee in favour of the Registrar, IISER Mohali payable at Mohali. However, scanned copy of the both tender fee and EMD should be upload on website along with technical bid part. The hard copy of the same in original to be send to the address mentioned below duly superscribing the supply/work name and reference/ tender ID on the envelope and same must reach before opening the bid and if not received within due date the bid will be rejected summarily.

The Original EMD and Tender Fee should be sent to:

Assistant Registrar (S&P)
Indian Institute of Science Education and Research,
Mohali Sector 81, SAS Nagar, Mohali, Punjab,
India, Pin: 140306

Non-receipt of original EMD and Tender Fee will lead to rejection of tender.

Item Details:-

S. No.	<u>Technical Specifications for High Resolution Field Emission Scanning Electron Microscope Qty-1</u>	
1.	Imaging Capabilities	(1.1) The system must demonstrate the capability of imaging both non-conducting & conductive samples with resolution of 0.6 nm or better @15kV, 0.9nm or better @1kV & 1.0nm or better @500V. In lens EsB resolution 1.0nm or better @ 1kV aSTEM resolution of 0.4 nm @ 30 kV (1.2) Beam Deceleration/Beam Booster technology/Gentle Beam technology or equivalent for high resolution imaging at low kV. (1.3) The system must have Magnetic/Electrostatic objective/Super hybrid lens or equivalent lens assembly for high resolution imaging of magnetic materials specially with shorter workin distance (1mm or lower).
2.	Magnification	50x to 10,00,000x or more (continues magnification)
3.	Resolution	(3.1) 0.6 nm or better @15kV (3.2) 0.9 nm or better @1kV (3.3) 1.0 nm or better @500V <i>Image data MUST be furnished supporting these numbers.</i>
4.	Variable pressure (VP) imaging	(4.1) up to 500 Pa adjustable in the step of 1 Pa. High efficiency variable pressure SE detector. (4.2) In-lens SE and In-lens EsB detector available in VP mode. (4.3) 1.4 nm at chamber pressure of 30 Pa and 3 kV (4.4) 1.0 nm at chamber pressure of 30 Pa and 15 kV
5.	Chamber	(5.1) Large chamber having one dimension at least 325 mm with height not less than 270 mm is essential. (5.2) The chamber should have at least Ten free ports for installing detectors and other accessories.
6.	Electron Gun	Schottky Field Emission Gun capable of providing high brightness/high current for noise free imaging.
7.	Acceleration Voltage	Continuously adjustable from 0.20 to 30 kV or more.
8.	Working Distance	0.5 or less to 50mm or more (preferable)
9.	Probe current	Minimum 100nA or less Stability: Better than 0.2 % per hour.
10.	Stage	(10.1) 5 axis motorized eucentric stage with motorized stage movements equivalent to or better (10.2) X=110 mm or more Y=110 mm or more Z=50mm or more (10.3) Tilt = -3 to 70 degrees, Rotation=360
11.	Detectors	(11.1) Everhart-Thronley (ET) Secondary Electron Detector
		(11.2) In-Lens /In column SE detector detector/upper secondary electron detector or equivalent detector for high resolution imaging in High Vacuum with automatic brightness & contrast adjustment.
		(11.3) In-column BSE-detector with filtering grid for the detection of energy backscattered electrons. Filtering grid adjustable from 0 V to -1.5 kV for energy filtering.
		(11.4). aSTEM detector: Pneumatic retractable multi-mode annular STEM-detector, with 12x sample holder. Enables bright field, dark field, oriented dark field and high angle annular dark field transmission imaging. (11.5) STEM resolution of 0.4 nm @ 30 kV
		(11.6) EDS Detector: The EDS detector should be liquid nitrogen

		<p>free with integrated dual Vertical stage Peltier cooling system.</p> <p>(11.7) The resolution of the detector should be 129 eV or better @ Mn Kα.</p> <p>(11.8) The active area should be 30 mm² or more.</p> <p>(11.9) The EDS software should have the features like point ID, line scan, area analysis, mapping, phase mapping, Xray mapping, drift correction, spectrum matching etc.</p> <p>(11.10) A separate computer system with monitor & colored printer should be provided with the system.</p> <p>(11.11) Cathodoluminescent detector for fluorescent samples</p> <p>(11.12) Parallel inlens EsB and inlens SE detection as well as parallel inlens SE and chamber SE detection using the Everhart-Thornley detector is required.</p>
12.	Digital Image Store and Image Processor	<p>(12.1) 4:3 Format with 16bit dynamic range: 1024x768 pixels, 2048x1536 pixels, 3072x2304 pixels, 4096x3072 pixels, 6144x4608 pixels, 8192x6144 pixels, 12288x9216 pixels, 24576x18432 pixels, 32768x24576 pixels, 32768 x 32768 pixels</p> <p>(12.2) Pixel averaging, Frame averaging for up to 256 frames, Line averaging for up to 256 lines</p> <p>(12.3) Combination of Pixel and Frame averaging, Combination of Pixel and Line averaging, Drift corrected frameaveraging</p> <p>(12.4) Image store resolution up to 32K x 32K pixels for high resolution large image mapping.</p>
13.	Vacuum System	<p>Oil free vacuum system having ion pump, Turbo Pump & R.P to achieve ultimate vacuum of 10⁻⁴ mbar or better. All necessary gauges and valves must be included.</p> <p>Pump down time should be less than 5 minutes.</p>
14.	Chiller	Air cooled Chiller of appropriate capacity
15.	Compressor	For all pneumatic operations
16.	Computer & its accessories	<p>(16.1) The system must have compatible latest version high performance computer with high end state of the art processor and Windows based operating system, sufficient number of USB port and RAM.</p> <p>(16.2) 24-inch Monitor, DVD RW, Wireless Mouse, Wireless Keyboard, color printer.</p> <p>(16.3) Image Storage : 2 TB Hard disk or better</p>
17.	Plasma Cleaner	Integrated Plasma Cleaner: Chamber mounted plasma cleaner for removal of hydrocarbon contamination from both sample and chamber. Integrated software control for user defined cleaning cycles without user interaction after starting the cleaning process.
18.	Other accessories	<p>The offer must include the following</p> <p>(18.1) Control panel for adjustment of various SEM functions like focus, magnification etc</p> <p>(18.2) Manual Joystick control for stage control</p> <p>(18.3) Infrared camera for chamber viewing</p> <p>(18.4) Interface between SEM and EDS</p> <p>(18.5) Sample mounting stubs – 10Nos</p> <p>(18.6) Carbon tapes – 5 Nos</p> <p>(18.7) FEG Emitter for five years smooth operation. It is mandatory to change the FEG in late 5th year.</p> <p>(18.8) Sputter Coater: Suitable vacuum operated Gold coater with carbon coating attachment with spare carbon filter and (i) two gold targets (ii) two-Pt targets & (iii) five Carbon ribbons with the coater. High quality coating with thickness monitoring option.</p>

19.	Software	<p>(19.1) Software should have automatic acquisition large sets of 2D and 3D nanoscale electron microscope images.</p> <p>(19.2) Clone Tool for section definition, Snap Section tool for automated section definition, Site Management functions for efficient sub-site definition across sections. Image stack viewer and image stack export options.</p> <p>(19.3) Automated acquisition of large field of view overview images and multi-image mosaics at multiple sites. Sequential multi-job lists. Possible to resume and reacquire any desired site at any time, using the very same parameters. Predefined imaging protocols for common sample preparations.</p> <p>(19.4) Dwell time Flexible, from 100 ns to > 100 s (with line averaging). Continuously selectable for optimized imaging</p> <p>(19.5) Image Characteristics continuously selectable up to 32k x 32k. Operates well on 2D and 3D data.</p> <p>(19.6) Autofocus and Autostigmatation</p> <p>(19.7) Per image stitching integrated image correlation algorithms for mosaic stitching</p> <p>(19.8) ROI of any shape, arbitrary polygonal, elliptical or rectangular regions adjustable 'on the fly'. Direction of scan rotation adjusted to shape of site.</p> <p>(19.9) Automated STEM imaging function should be available.</p>
20	Array Tomography	<p>(20.1) Scan hardware must be compatible. Resolution 32k x 32k, with minimum dwell time 100ns per pixel.</p> <p>(20.2) Software should allow automated imaging of biological serial sections to enable 3D visualization of large volumes</p>
21	Services & Operation	<p>(21.1) A trained operator should be provided for three years.</p> <p>(21.2) Must offer Three year warranty, training and installation in the IISER Mohali, and a quick response in case of any future technical support.</p> <p>(21.3) Supplier should have a direct presence, operation and services in India and registered offices at the name of original manufactures.</p> <p>(21.4) All the technical specs must be validated in IISER Mohali during installation.</p>

Note Below

1. The online updated Price BOQ is in INR format. If bidder want to quote other than INR please specify the quoted currency in the technical bid/part and fill the amount in same updated BOQ.
2. Please bifurcate the price on shipping terms i, e, Ex-works -> FCA/FOB -> CIP/CIF in price BOQ and specify the same in technical bid.
3. For any Technical query for the tender, kindly drop email at stores@iisermohali.ac.in latest by 25-04-2018(05:00PM). After this, no query will be entertained.

SUBMISSION OF TENDER

- I. All bid/ tender documents are to be uploaded online at Central Public Procurement portal i.e. <https://eprocure.gov.in/eprocure/app> only and in the designated cover/ part on the website against tender ID. Tenders/ bids shall be accepted only through online mode and no manual submission of the same shall be entertained except tender fee and EMD. Late tenders will not be accepted.
- II. The online bids shall be opened at the office of the Assistant Registrar (P&S), IISER Mohali, on above given date and time. If the tender opening date happens to be on a holiday or non-working day due to any other valid reason, the tender opening process will be attended on the next working day at same time and place. IISER Mohali will not be responsible for any error like missing of schedule data while downloading by the Bidder.
- III. The bidder shall upload the tender documents duly filled in and stamped by the authorized signatory on each and every page. Tender not submitted/uploaded in the prescribed form and as per the tender terms and conditions shall be liable for rejection.
- IV. The bidder shall upload scanned copy of the PAN Card, GST number duly signed and stamped.

- V. E-procurement system ensures locking on the scheduled date and time. The system will not accept any bid after the scheduled date and time of submission of bid.

INSTRUCTIONS

1. The Online bids should be submitted directly by the original manufacturer/supplier, If quotation is submitted/filled by any representative/agent/dealer then they must upload a authority certificate from the principal company for quoting the price otherwise such quotation will be rejected.
2. The quantity mentioned in this inquiry is and shall be deemed to be only approximate and will not in any manner be binding on the Institute. Before the deadline for submission of the online bid, IISER Mohali reserves the right to modify the tender document terms and conditions. Such amendment/modification will be notified on website against said tender ID
3. The rates offered should be FOR Chandigarh/Mohali in case of firms situated outside Chandigarh/Mohali, and free delivery at the Institute premises in case of local firms. Supplier from outside India should mention the Ex-works/FOB/FCA/CIF/CIP price clearly. Conditional tenders will be summarily rejected.
4. In case of Ex-godown terms the amount of packaging forwarding freight etc. should clearly be indicated by percentage or lump sum amount. Institute has policy not to make any advance payments towards any purchase, Letter of credit can be opened if required.
5. THE INSTITUTE IS EXEMPTED FROM EXCISE AND CUSTOM DUTY under notification no- 51/96 –CUSTOM DATED 23/7/1996 AND DSIR REGISTRATION NO TU/V/RG/-CDE(1062)/2016 DT. 30/08/2016 / EXCISE NOTIFICATION NO. 10/97- CENTRAL EXCISE DT. 01.03.1997.
6. GST Exemption - MINISTRY OF FINANCE, (DEPARTMENT OF REVENUE) Notification No.45/2017- Central Tax (Rate) dated 14th November, 2017 47/2017-Integrated Tax (Rate) 14th November, 2017 for purpose of availing concession in rate of GST admissible to Scientific/Research and academic Institutions.
7. The delivery period should be specifically stated. Earlier delivery will be preferred.
8. The firms are requested to provide/upload detailed description and specifications together with the detailed drawings, printed leaflets and literature of the article quoted. The name of the manufactures and country of manufacture should also invariably be stated. In the absence of these particulars, the quotation is liable for rejection.
9. Validity of offer: 90 days. The warranty period after satisfactory installation should be mentioned and firm should replace all manufacturing defect parts/ whole item under warranty without any extra cost including clearance, freight, taxes. Security deposit/ Bank Performance Guarantee @ 10 % of the value of supply order as per norms may be sought from the firms.
10. The right to reject all or any of the quotation and to split up the requirements or relax any or all the above conditions without assigning any reason is reserved by the IISER Mohali. For any corrigendum and addendum please be checked the website <https://eprocure.gov.in/eprocure/app> and <http://www.iisermohali.ac.in>
11. Disputes, if any, shall be subject to jurisdiction in the court of Mohali only.

–sd/-
(Mukesh Kumar)
Assistant Registrar (S&P)