

Global Tender Notification for Tabletop SEM

(Tender date: 19th August 2024)

This is an RFQ (Request for Quote) for procurement of tabletop SEM for the Centre for Nano Science and Engineering (CeNSE) at IISc, Bangalore. CeNSE is a multidisciplinary research department at IISc that houses a 14,000 sq. ft. cleanroom and characterization facility used by more than 100 faculty members from various disciplines at IISc. CeNSE also runs a program called Indian Nano electronics Users Program (INUP) which has allowed 8000 participants and 1500 faculty from more than 700 universities and institutes all over India to use the facilities at CeNSE. Consequently, any utility/facility at CeNSE receives significant exposure to scientific community at IISc and beyond. The vendors are requested to factor in the value of this exposure into their quotes. Details of existing facilities are available at:

<http://mncf.cense.iisc.ac.in/>

<http://nnfc.cense.iisc.ac.in/>

Section 1 – The Process

1. **This order is open to all global Original Equipment Manufacturer (OEM) or their Indian authorized distributor.**
2. Vendors will be required to submit a technical proposal and a commercial proposal in **two separate sealed envelopes**. Quotes in violation of this will be rejected.
3. **The deadline for submission of proposals is September 9th 2024, 5:30 pm Indian Standard Time.** Proposals should arrive at the CeNSE office, GF-15, Centre for Nano Science and Engineering, Indian Institute of Science, Bangalore 560012, India, by the above deadline. Please mention **“Tender for tabletop FESEM”** on the envelopes.
4. The technical proposal should have:
 - a. Relevant technical datasheets. The committee reserves the right to cross-check the information in these datasheets with publicly available information.
 - b. A compliance table with 5 columns. The first column must list the technical requirement, in the order that they are given below. The second column should describe the capability of the tool for that specific requirement. Please be quantitative and consistent with the technical datasheets. In case the technical requirement is a text, second column must provide a technical answer. In case the requirement is a number, please provide a number. Third column must specify whether the technical requirement is met with a “Yes”, “No”, or “Partially”. If the response is “Partially” or “No” the third column, the fourth column must explain the extent of the deviation and, if possible, the reasons for

- the deviation. The fifth column is for other “Remarks”. You can use it to compare your tool with that of your competitors or provide more details/justifications.
- c. Technical capabilities of any *suggested* accessories/add-ons that may enhance the usability, capability, accuracy or reliability of the tool. Vendors are encouraged to quote for as many add-ons as their tool portfolio permits.
 - d. Any additional capabilities or technical details, which you would like to bring to the attention of the purchase committee. Vendors are encouraged to highlight the advantages of their tools over comparable tools from the competitors
5. If multiple systems fulfil the requirement, vendors can offer multiple bids.
 6. The technical proposal will be evaluated against the technical requirement. Only vendors who meet the technical requirement will be considered for the commercial comparison and negotiation.
 7. The lowest bid L1 will be calculated based on the total price of all items tendered for Basic equipment along with accessories selected for installation, selected optional items, recommended spares and warranty.
 8. The commercial bid must conform to the following:
 - a. The quotations should be CIP Bangalore with validity of 90 days.
 - b. Mention itemized cost of the system, optional items and *required* accessories, such as software, power supply, etc.
 - c. Mention itemized cost, as an option, for any *suggested* accessories/add-ons that may enhance the usability, capability, accuracy, or reliability of the tool. Vendors are encouraged to quote for as many add-ons as their tool portfolio permits.
 - d. Mention the warranty provided with the tool.
 - i. Warranty of 1 year is mandatory. Warranty of 3 years or more is preferred.
 - ii. All electronics and instrumentation must be covered under the warranty. Clearly indicate any part that is not included in the warranty.
 9. The decision of the purchase committee on the execution and evaluation of the tender, is absolute and final.
 10. The RFQ must include references of 5 previous installations, preferably in India. Please provide the names and contact addresses of the referees, so that the committee can contact them independently.
 11. We encourage vendors to give technical presentations, physically or online, so that we can better understand the technical capabilities of their tools and vendors can better understand the requirements.
 12. To schedule the presentations or for technical questions, please contact Dr. Suresha, COO Micro and Nano Characterization Facility (MNCF), Centre for Nano Science and Engineering, Indian Institute of Science, Bangalore 560012, India. (sureshasj@iisc.ac.in)

Section 2 - Technical Specifications

1. Resolution- 2nm or better
2. High and low vacuum mode must be available and should be mentioned on manufacturer quoted model catalog.
3. Accelerating Voltage: Adjustable between 1-20 kV
4. Navigation Camera: System should be equipped with chamber mounted color navigation camera
5. Optical and Electron Imaging modes.
6. Magnification- up to 2,00,000x or higher
7. Electron Source- **Long lifetime Schottky Field Emission source**
8. Vacuum modes- Low and High vacuum modes. Please provide the values
9. Vacuum System- Should give ultra clean high vacuum using turbo molecular pump & Diaphragm vacuum pump
10. Stage Specification- Computer-controlled motorized stage
11. Specimen Dia- 25mm or better
12. Standard BSE and SE detectors
13. Temperature Controller for Sample - Sample holder for imaging of moistures and water containing samples with a temperature range from -20 up to +50 degC.
14. EDS detector- Live EDS. Detector type Silicon drift detector (SDD) Detector active area 25 mm² or better X-ray window Ultra-thin silicon nitride window allowing detection of elements B to Cf Energy resolution Mn K α \leq 132 eV or better. Processing capabilities multi-channel analyzer with 2,048 channels at 10 eV/ch Max. Input count rate 300,000 cps Hardware integration Fully embedded, no external digital beam control needed. Elemental Mapping and line scan should be offered.
15. Imaging and EDS calibration standard sample should be offered.
16. System should have diaphragm vacuum pump or equivalent and must be oil free
17. A complete package of software to effectively manage and operate the system should be included. Software needs to be supported for the lifetime of the tool
18. OS should be latest/new version software, with compatible workstation including 24" Display(s) or higher
19. Appropriate hardware and software for image storage and analysis. Signal mixing (SE+BSE) facility should be present
20. Image acquisition and analysis software with free software upgrades for at least five years. Particle size measurement, User calibration, point to point measures, Angle and other image measurements must be possible
21. Detailed specifications of the workstation to be provided
22. Specify the date the tool was launched and the period till which the software will be supported.
23. Please quote any additional hardware/software which can improve the throughput as optional items such as motorized tilt and rotation stage, application software etc
24. Maintenance including replacement of filament for a period of at least 3 years

25. The vendor must commit to supporting the software and control the computer for at least 10 years from the date of installation.
26. The cost for an additional TWO years of warranty and/or AMC after three years of warranty should be mentioned.
27. A complete set of instructions and service manuals must be provided along with the system.
28. After installation of the system by the engineers, the system performance must be demonstrated to the customer's satisfaction as per the specifications detailed here.
29. The supplier must provide onsite training to the users after installation.

30. Service support.

- a. The vendor should have qualified technical service personnel for the equipment based in India.
 - b. The firm must guarantee technical and service support for the entire system and supply spares for a minimum period of 10 years or more from the installation date.
 - c. Service response time must be <48 hours.
 - d. Provision for online remote diagnosis of faults.
31. The above-mentioned technical specifications are highly desired. However, lower technical specifications may be considered if the above-mentioned specifications are found to be unsuitable in financial terms. The Institute reserves the right to go for lower specifications taking into consideration its financial constraints and technical preferences.
32. All the specifications must be demonstrated on-site for acceptance.