

To Whom It May Concern

Domestic Tender to supply In-situ TEM heating and biasing holder by local vendor only.

This is an RFQ (Request for Quote) for procurement of a In-Situ TEM heating and biasing holder as part of a domestic tender for the Centre for Nano Science and Engineering (CeNSE) at IISc, Bangalore. The tender invitation is for Indian Original Equipment Manufacturer (OEM)/Class-1/Class-2 or their Indian authorized distributor only.

CeNSE is a multidisciplinary research department at IISc that houses a 14,000 sq. ft. cleanroom and 5000 Sq. ft characterization facility used by more than 100 faculty members from various disciplines at IISc. CeNSE also runs a program called Indian Nanoelectronics Users Program (INUP) which has allowed 4200 participants from more than 700 universities and institutes all over India to use the facilities at CeNSE. Consequently, any tool in CeNSE receives significant exposure to scientific community at IISc and beyond. The vendors are requested to factor in the value of this exposure in to their quotes. Details of existing facilities and INUP program can be found from:

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

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

<https://www.inup.cense.iisc.ac.in/>

Also, CeNSE hosts equipment on behalf of vendors, as a national standard or 'model' system. If the vendor is interested, CeNSE can consider working out a similar arrangement for the In-situ heating and biasing holder. In-situ heating and biasing holder is a spare/accessory for Transmission Electron Microscope (TEM), which will be utilized for investigating properties of materials under external stimuli like temperature and biasing. The holder should be compatible with the Thermo Fisher Scientific TITAN THEMIS 300 (D3391) microscope which is available at MNCF, CeNSE, IISc.

Procedure

1. Vendors will be required to submit a technical proposal and a commercial proposal in two separate sealed envelopes. Only vendors who meet the technical requirement will be considered for the commercial negotiation.
2. The deadline for submission of proposals is the 25th of July 2022, 5:30 pm Indian Standard Time. Proposals should arrive at the Main office, GF-15, Centre for Nano Science and Engineering, Indian Institute of Science, Bangalore 560012, India, by the above deadline.
3. The decision of purchase committee will be final.
4. The technical proposal should contain a compliance table with 5 columns. The first column must list the technical requirements, in the order that they are given in the technical configuration below. The second column should describe your compliance in a "Yes" or "No" response. If "No" the third column should provide the extent of the deviation (please provide quantitative responses). The fourth column should state the reasons for the deviation, if any. The fourth column can be used to compare your tool with that of your competitors or provide details as requested in the technical requirements table below.
5. Any additional capabilities or technical details, that you would like to bring to the attention of the purchase committee, can be listed at the end of the technical table.

6. Vendors are encouraged to highlight the advantages of their tools over comparable tools from the competitors

7. If multiple systems can fulfil the requirements, vendors can submit multiple bids.

8. In the commercial bid, please provide itemized cost of the system and required accessories, such as software, power supply, etc.

9. As an option, please provide itemized cost 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.

10. The commercial comparison will be done as per Government of India rules, specifically GFR 2017.

Note that GFR has recently been amended.

11. As per recent edits to the GFR, there are three classes of vendors distinguished by their “local content”. In the cover letter, vendors must mention which applies to them:

Class 1 supplier: Goods and services have a local content of equal to or more than 50%

Class 2 supplier: Goods and services have a local content more than 20% but less than 50%

Non-local supplier: Goods and services have a local content of equal to or less than 20% 5. Quotes will be entertained from Class 1 or Class 2 suppliers only.

12. Please indicate the warranty provided with the tool. Warranty of 3 years or more is preferred.

13. The quotations should be on FOR-IISc Bangalore basis in INR only.

14. Provide itemized cost for required spares for 2 years of operation. For sake of this calculation, the vendor may assume active tool usage of 20 hours/ week. This number will be used to estimate the life cycle cost of the tool.

15. Clarify if periodic (preventive) maintenance be done by a trained on-site engineer or requires a specialist from the OEM.

17. The RFQ must include references of 3 previous installations, in a centralized characterization facility of similar size or bigger, preferable in India. Please provide the names and contact addresses of the referees, so that the committee can contact them independently.

18. Any questions can be directed to Dr. Suresha S J, GF-12, Centre for Nano Science and Engineering, Indian Institute of Science, Bangalore 560012, India. (sureshasj@iisc.ac.in).

Technical Specifications:

The following technical requirements should be strictly met, and necessary documentation must be enclosed along with the Technical Bid:

1. Double tilt biasing + heating holder compatible with ThermoFisher scientific (Titan Themis, Themis Z-aberration corrected) microscopes
2. Holder compatible with MEMS based heater + electrode chips on SiNx membrane

3. Heating and biasing control: 4 point probe with resistive feedback
4. No of contacts: at least 6
5. Temperature range: RT to >1200°C
6. Membrane breakdown voltage > 130 V
7. Attainable E- fields >250 KV/cm at 900°C
8. Detectable current range: 1 pA to 100 Ma
9. Polepiece compatibility (with the Thermofisher TEMs in IISc).
10. Alpha tilt: $\pm 20^\circ$
11. Beta tilt: $\pm 20^\circ$
12. Drift rate: < 0.5 nm/min
13. Temperature accuracy: > 95%
14. Temperature homogeneity: >99.5%