

Energy Dispersive Spectroscopy (EDS) and Electron Back Scatter Diffraction (EBSD) Facility

(Last Date for submission of tenders: 11th March 2019, 5 pm)

We are looking for an Energy Dispersive Spectroscopy (EDS) and an Electron Back Scatter Diffraction (EBSD) setup to be integrated with existing field emission gun scanning electron microscope. The EDS+EBSD system should be able to run from a single platform and it should be possible to collect the EDS data while performing EBSD. Both the systems should be compatible to (1) TESCAN High Resolution Schottky FE-SEM (Model MIRA3XMU), and (2) GATAN In-situ testing model MTEST2000EW.

Detailed specifications for EDS and EBSD system are provided below:

I. EDS

1. 20 mm² or more solid state detector
2. No need of liquid nitrogen for cooling the detector
3. High spectral resolution. The energy resolution should be explicitly mentioned in the quote. The range of elements that can be detected should be clearly mentioned in the quote. Energy Resolution should be better than 130 eV.
4. Ability to withstand high temperature to facilitate in-situ heating experiments (up to 800 deg. C). Appropriate filters should be provided.
5. Motorized insertion and retraction of EDS detector
6. Ability to perform point, line and map analysis
7. Standard samples for calibration should be provided

II. EBSD

1. High speed: Highest Data acquisition at 100 frames per second or higher
2. High resolution camera with minimum 640 pixels by 480 pixels on CCD
3. High sensitivity: Should be able to work at low probe current (SEM probe current range: 2 pA- 200 nA) and low voltages (SEM range: 1 kV-30 kV)
4. High angular resolution and the exact value should be mentioned in the quote
5. Clear indication of indexing strategy: e.g. confidence index, fit or any other equivalent parameter.
6. Ability to use single platform for EBSD and EDS with capability to provide simultaneous EBSD and EDS
7. Motorized insertion and retraction of EBSD detector
8. Safety feature to avoid collision of sample stage/sample with the camera

9. Ability to withstand high temperature to facilitate in-situ heating experiments (up to 800 deg. C). Appropriate filters should be provided.
10. Complete software package for data collection and analysis

Optional:

11. Multiple licenses for data analysis
12. Provide regular up gradation of software for data analysis up to 5 years.

A single workstation for acquiring EDS and EBSD data should be provided. Details of the workstation should be mentioned clearly. The memory of workstation should support data acquisition at higher rates and simultaneous analysis of data. Proper training and warranty for the entire system should be the responsibility of the supplier.

In case of any minor deviation, the committee reserves the right to take the final decision.

Terms & conditions

1. The vendor should also make sure that the price quoted would be valid for a period of 2 years. Reasonable change in the price will be accepted.
2. Two-bid system (separate technical and financial bids) in sealed tenders.
3. The technical bid must clearly specify the prescribed technical specifications without including the prices. Please provide in detail the specifications. Unique characteristics may be highlighted. Vendors who include price information in the technical bids will be automatically disqualified.
4. Technical bids will be opened first. IISc may seek clarifications after opening of technical bids, and may ask them to perform some example experiments on the sample given by IISc to demonstrate the promised technical specifications. Vendors may be required to give presentations. There are several items that require information to be provided by the supplier. If information is not provided against any of these items, this will disqualify the supplier. After technical evaluation by a committee, vendors may be asked to re-quote in a specific format to facilitate comparison of prices. IISc also reserves the right to cancel the tender at any time without assigning any reason whatsoever.
5. Price bids of only technically qualified vendors will be considered.
6. The price bids must offer CIF Bangalore prices.
7. Prices to be quoted separately for baseline system and options. Prices will should be quoted in adequate detail with relation to packing details to cover insurance compensation in case of damage to any specific modules
8. Indicate price for annual maintenance contract.
9. The payment will be by letter of credit: payable 80% on shipping, 20% after satisfactory installation and acceptance.
10. Indicate delivery period.

11. Order will be placed on lowest bid from technically qualified vendor.
12. The last date to submit the quotations is **11th March 2019 before 5 p.m.**
13. The tender documents should be addressed to **The Chairman, Department of Materials Engineering, Indian Institute of Science, Bangalore 560012**, and posted at the following address:

Prof. Satyam Suwas
Department of Materials Engineering
Indian Institute of Science, Bangalore 560012
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