

Subject: Reference e-Tender Notice – NITJ/PUR/IIC/114/2019 for purchase of Field Emission Scanning Electron Microscope (FESEM) with Accessories – Amendments in Technical Specifications and extension in receipt of e-bids

In reference to queries/requests of various bidders, the followings technical specifications/conditions as detailed below have been amended as mentioned against each:-

GENERAL-

High Resolution Schotkey emitter FE-SEM (Field Emission -Scanning Electron Microscope) is a high resolution scanning electron microscope which is intended for use for characterization and studying a wide variety of materials (**MAGNETIC as well as NON MAGNETIC**), which could be metallic, ceramic, semiconductor, polymer, rubber, emulsion/gel (frozen condition) and biological samples for investigating the ,microstructure and perform chemical analysis using Energy Dispersive X-Ray Spectroscopy (EDS), Texture & Phase analysis etc using EBSD.

S.No	Item	Original TENDER Specifications	Modified Specifications
1	Resolution	(a) 1 nm or better @ 15kV and 2 nm or better at 1 kV in normal high vacuum Secondary Electron (SE) mode. (b) Less than ≤ 2.5 nm in Back Scattering Electron (BSE) mode (c) 1.8 nm or better in low vacuum mode	(a) 1 nm or better @ 15kV and 1.7 nm or better at 1 kV in normal high vacuum Secondary Electron (SE) mode. (b) Less than ≤ 2.5 nm in Back Scattering Electron (BSE) mode (c) 1.8 nm or better in low vacuum mode
1	Chamber	Suitable chamber for accommodating a minimum sample size of 100 mm diameter with atleast 10 accessory ports, two of them suitable for EDS attachments. Chamber design should allow changing of the specimens quickly. Quick-fit Specimen holder for holding at least 7 suitable pin-type stubs. Specimen exchange device with integrated air lock mechanism.	Suitable chamber for accommodating a minimum sample size of 100 mm diameter with atleast 10 accessory ports, two of them suitable for EDS attachments. Chamber design should allow changing of the specimens quickly. Quick-fit Specimen holder for holding at least 7 suitable stubs.
2	Stage	5 axis Eucentric motorized stage with movements equivalent to or Better X= 100 mm or more Y = 50 mm or more Z = 40 mm or more Tilt = up to 60° or higher R= $\pm 360^\circ$	5 axis Eucentric/compucentric motorized stage with movements equivalent to or Better X= 100 mm or more Y = 50 mm or more Z = 40 mm or more Tilt = up to 60° or higher
3	Detectors	a)Chamber Secondary electron imaging (SEI) detector. b) On axis annular In-lens SEI (secondary electron) detector for high resolution imaging in high Vacuum at low KV. c) CCD-camera with IR illumination	a)Chamber Secondary electron imaging (SEI) detector. b) In-lens SEI (secondary electron) detector for high resolution imaging in high Vacuum at low KV. c) CCD-camera with IR illumination for in-chamber viewing.

S.No	Item	Original TENDER Specifications	Modified Specifications
		for in-chamber viewing. d) 5 Segment Backscattered Electron Detector (BSED) e) Low vacuum detector for analysis of non-conducting samples such as polymers, plastics, concrete, etc.	d) Backscattered Electron Detector (BSED) e) Low vacuum detector for analysis of non-conducting samples such as polymers, plastics, concrete, etc.
4	Vacuum System	Suitable vacuum system having Ion pump, Turbo molecular Pump and oil free Rotary Pump for attaining required and hassle free operations. Two ion getter pumps along with the associated power supplies for the microscope column and vacuum gauges. A turbo-molecular pump backed by a two stage dry rotary pump for the specimen chamber. The vacuum system should be operated with computer controlled, pneumatic operated valves with full safe protection for mains/high voltage and vacuum failures. Isolation valves for specimen chamber and high vacuum system during sample loading. Automatic venting with dry nitrogen. Seamless transition between the vacuum modes. Faster vacuum recovery after breaking for specimen exchange (less than 5 min.). In high vacuum mode, the specimen chamber should achieve less than or equal to 10⁻³ Pa vacuum In low vacuum mode imaging, chamber pressure should be adjustable from 10 Pa to 500 Pa.	Suitable vacuum system having Ion pump/Sputter Ion Pumps, Turbo molecular Pump and oil free Rotary Pump for attaining required and hassle free operations. Two ion getter pumps/ Sputter Ion Pumps along with the associated power supplies for the microscope column and vacuum gauges. A turbo-molecular pump backed by a two stage dry rotary pump for the specimen chamber. The vacuum system should be operated with computer controlled, pneumatic operated valves with full safe protection for mains/high voltage and vacuum failures. Isolation valves for specimen chamber and high vacuum system during sample loading. Automatic venting with dry nitrogen. Seamless transition between the vacuum modes. Faster vacuum recovery after breaking for specimen exchange (less than 5 min.). In high vacuum mode, the specimen chamber should achieve less than or equal to 10⁻³ Pa vacuum In low vacuum mode imaging, chamber pressure should be adjustable from 10 Pa to 300 Pa or better.

The date of receipt of e-bids has also been extended as per following schedule:

Last date of receipt of e- bids	19.03.2020 upto 03:00 PM
Opening of e-bids	20.03.2020 at 03:00 PM

The other technical specifications and terms & conditions of the original tender documents will remain same.

Registrar