Technical specifications of FESEM

I	Bidder Eligibility Condition	Comply /Not Comply	Ref. Page No.
1	The bidder/OEM should have supplied at least 3 similar items to IITs, NITs, IISERs, CSIR Labs or other Govt. organizations and Industry in the last 5 years, PO copies or installation certificates along with contact details of end user need to be submitted as the proof of supply. IIT Madras reserves its right to verify the claims submitted by the bidder and the feedback from the previous customers will be part of technical evaluation.		

II	Feature	Requirement	Comply /Not Comply	Ref. Page No.
1	Electron source	Schottky Field Emission Gun (FEG) FEG life should be guaranteed for minimum three years. In-built power backup should be included for FEG.		
2	Accelerating voltage	500 V - 30 kV		
3	Probe Current	1 pA to 200 nA or higher, capable operating cathodoluminescence detector.		
4	Resolution	1 nm or better (secondary electron) at 15/ 20 kV (high vacuum) 3 nm or better at 1 kV (high vacuum) 1.8 nm at 15 kV or better (low vacuum)		
5	Operation mode	High vacuum and low vacuum		
6	Magnification	Magnification: 6,00,000x or better		
7	Standard detectors to be supplied with SEM	Secondary Electron Detector (high sensitivity) Back Scattered Electron Detector should work in low vacuum and high vacuum mode. CCD for chamber view.		
8	Image Mode	Secondary electron image		

		Back scattered electron image (composition image and topographic image and shadow)		
9	Vacuum system	Compatible vacuum pump for FESEM operation Should freely switch between high vacuum and low-vacuum modes without involving any mechanical aperture and alignments.		
10	Pressure range	Pressure in low vacuum mode should be 10 - 150 Pa or better.		
11	5-axes motorized mechanically fully eccentric stage.	X-axis: 100 mm or higher Y-axis: 100 mm or higher Z-axis: 80 mm or higher Tilt: -10° to 70º Rotation: 360º		
16	Specimen stage control	5-axes motorized mechanically fully eucentric stage.		
17	Detector ports	Enough ports must be available for upgradations such as WDS, EBSD, GATAN MONARC CLD.		
18	Sample navigation system	Easy sample navigation system should be provided. Automated large-area observation and analysis using Stage navigation system.		
19	Microscope control	All microscope functions should be controlled by keyboard, mouse, Joystick and touch screen monitor via windows-based software.		
20	EDS system	liquid nitrogen-free Dry Silicon Drift Detector. Energy resolution 129 eV or better at Mn-Kα. Detection area should be ≥ 30 mm^2 for handing high count rates. The EDS detector should be capable of elemental analysis from Boron (B) to Uranium (U).		

		Auto drift correction should be included to avoid any change in a specimen or specimen drift during long acquisitions.		
21	Guarantee / Warranty	Three-years on all components & subcomponent should be provided to the entire tender configuration.		
23	Sputter coater	Fully automated sputter system for gold coating with suitable vacuum pump.		

(Note: It is mandatory for the bidders to provide the compliance statement in tabular column format along with catalogue page number (comply/not comply) for the Above points with document proof as required. Failing which bidders will be technically disqualified)