

**DEPARTMENT OF MECHANICAL ENGINEERING
INDIAN INSTITUTE OF TECHNOLOGY, KANPUR**

Tender Enquiry No. IITK/ME/PMD/05/12

2nd January 2012

Sub: Enquiry letter for purchase of “**Scanning Electron Microscope**”

Sir/Madam,

Quotations are invited by the undersigned for purchase of following items in a sealed cover by 09.01.2012. **Date is extend upto 16.01.2012.**

Competitive quotations are invited for a “**Scanning Electron Microscope**” as per the following specifications and service/support features.

Specifications of FE-SEM	
Emitter	Thermal Field Emission with beam deceleration/boosting capability
Acceleration Voltage	200V-30kV or better
Resolution	SE detector: 2 nm or better at the highest voltage & better than 3.5 nm at 1 kV BSE detector: 2.5 nm or better at highest voltage & better than 4 nm at 1 kV Please indicate clearly what is achievable for your system
Modes	High Vacuum
Probe current	Up to 40 nA
Magnification	12x-500,000x or better
Detectors	Solid state Secondary Electron detector, Solid state Back Scattered Electron detector (both in-lens type), Specimen Current Detector
Chamber	At least 350 mm x 260 mm size with CCD camera with IR illumination
Ports	At least 7 accessory ports should be provided which are compatible for EDS, EBSD, heating and cooling stages, GATAN MTEST350 tensile stage
Stage	5 Axis motorized eucentric, X= 100 mm, Y=100 mm, Z=50 mm or better, T=total of 90 deg deg, R=360 deg continuous, Manual user interface (control panel) for all motions and joystick option. The stage should support at least 1 kg weight with x-y translation possible under this load. Stage resolution should be better than 5 micrometers.
Image processing	6 Megapixel or better
Vacuum system	Automatic Turbo Molecular Pump (TMP)/Rotary Pump (RP)/Ion Getter Pump, (IGP) based differential vacuum system, Oil free rotary pump with silencer box, Should give ultra clean dry fast vacuum using air cooled Turbo Molecular Pump. Safety measures for electron column against any vacuum failure.
Supporting software	With all possible options for this configuration (please list each), 3-D and AVI imaging capability
Additional detectors (EDS)	LN2 free SDD detector with 129 eV resolution, Must have mapping, quantitative, qualitative analysis. Must be complete with hardware, software

	and standard sample.
Sample holder	Single and multiple specimen stubs, Specimen handling tools and stage tools
Accessories	Gold sputter coating system, Active vibration isolation system for chamber and column separation, Peltier cooling and heating stage
Additional features	Online fault diagnosis and networking, Acoustic touch alarm
Guarantee	Three years
AMC	provide the amount and the terms, Note that those providing better after sales service and support with written evidence will be given preference
Additional optional accessories should be indicated separately along with their price. The above specs are desirable and the actual numbers achievable for your system should be indicated.	
Specifications for SEM with Tungsten Gun	
Emitter	Tungsten hair pin
Modes	HV, LV and ESEM
Acceleration Voltage	200V-30kV or better
Resolution	SE detector: 3 nm or better at the highest voltage & 10 nm or better at 3 kV (in all modes) BSE detector: 5 nm or better at highest voltage (in all modes) Please indicate clearly what is achievable for your system
Probe current	Up to 2 uA continuous
Magnification	12x-800,000x or better
Detectors	Solid state Secondary Electron detector for all modes, Solid state Back Scattered Electron detector for all modes, Specimen Current Detector, Variable pressure secondary electron detector, STEM
Chamber	At least 350 mm x 260 mm size with CCD camera with IR illumination
Ports	At least 7 accessory ports should be provided which are compatible for EDS, heating and cooling stages, GATAN MTEST350 tensile stage
Stage	5 Axis motorized eucentric, X= 100 mm, Y=100 mm, Z=50 mm or better, T=total of 90deg, R=360 deg continuous, Manual user interface (control panel) for all motions and joystick option The stage should support at least 1 kg weight with x-y translation possible under this load. Stage resolution should be better than 5 micrometers.
Image processing	6 Megapixel or better
Supporting software	With all possible options for this configuration (please list each), 3-D and AVI imaging capability
Vacuum system	Automatic Turbo Molecular Pump (TMP)/Rotary Pump (RP)/Ion Getter Pump, (IGP) based differential vacuum system, Oil free rotary pump with silencer box, Should give ultra clean dry fast vacuum using air cooled Turbo Molecular Pump. Safety measures for electron column against any vacuum failure.
Additional detector (EDS)	LN2 free SDD detector with 129 eV resolution, Must have mapping, quantitative, qualitative analysis. Must be complete with hardware, software and standard sample.
Sample holder	Single and multiple specimen holding capability, Specimen handling tools and stage tools
Accessories	Gold sputter coating system, vibration isolation table, Peltier cooling and heating stage
Additional features	Online fault diagnosis and networking, Acoustic touch alarm
Guarantee	Three years
AMC	provide the amount and the terms, Note that those providing better after sales service and support with written evidence will be given preference

Additional optional accessories should be indicated separately along with their price. The above specs are desirable and the actual numbers achievable for your system should be indicated.

Mention the compliance status for each of the items above in a tabular form. Please note that separate quotes should be provided for SEM with Field Emission Gun and SEM with Tungsten Gun meeting the given specifications. Based on the features, only one model will be considered by us. **The quotations should be valid for a period of 90 days. Prices should be FOB. Discount, agency commission, inland transportation, documentation charges etc. if any should be shown separately. Please send competitive quotations, in sealed envelopes to the address provided below so as to reach on or before January 09, 2012. Date is extend upto 16.01.2012.**

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