



## CENTER OF INNOVATIVE AND APPLIED BIOPROCESSING (CIAB)

C-127, INDUSTRIAL AREA, PHASE VIII, MOHALI - 160071

### Corrigendum

29.10.2014

File Ref. No.: CIAB-1-(93)-14-15

Name of Item : - Benchtop Scanning Electron Microscope (SEM)

The revised specifications and date for tender for purchase of Benchtop Scanning Electron Microscope (SEM) is placed below as Annexure-A.

Last Date and Time for submission of Tender :- 18.11.2014 at 2.30 pm.

Date and time for opening of Technical Bid :- 18.11.2014 at 3.00 pm.

Annexure-A

### CHAPTER XV: TECHNICAL SPECIFICATIONS

File Ref. No.: CIAB-1-(93)-14-15

Name of Item:	<u>Benchtop Scanning Electron Microscope (SEM)</u>	Quantity: One
Resolution	: $\leq 30$ nm.	
Acceleration voltage	: Multistage at least 5, 10, 15 kV modes with stepwise increment, customer choosable, auto adjustable for stigmation, focus, image rotation, beam intensity.	
Magnification	: On lower side 20 x and on higher side 30, 000 x or more.	
Detectors	: Both secondary electron (SE) and backscattered electron (BSE) detectors.	
Filament	: Tungsten or thermionic source (CeB6), life time should match in both the filament or the firm should supply extra filament to match the life time of one CeB6.	
Specimen stage	: Manual or computer controlled motorized X and Y axis, Rotatable.	
Focusing mode	: Auto focus, auto contrast, auto brightness.	
Tilt angle	: - 20 degree to 45 degree or more.	
Image format	: BMP, JPG, TIFF, PNG.	
Image display mode	: High resolution JPEG, TIFF, BMP mode (pixel size $\geq 1024 \times 768$ ).	
Vacuum system	: Turbomolecular pump with selectable high vacuum and low vacuum in chamber or in holder.	
Sample preparation accessories	: Sputter coater should be quoted with the instrument.	
Operation control	: Instrument should have capability for control through wireless mode, LAN / dedicated PC/ Ipad. The PC should have the configuration of latest processor, 16 GB RAM, 1 TB HDD. Total control panel (size 20 and more inch) should be touch panel supported.	
Data Storage	: USB, CD, Network.	

Other features	: The model should have standby mode, custom recipe, image re-generation, beam blanking, auto contrast, auto focus, auto stigma, auto gun alignment and biasing, single switch low vacuum / high vacuum switch over, safety measures.
Image Analysis Software	: All the necessary softwares for doing all the analysis work with image should be included.
Warranty	: At least 3 years. Cost of AMC beyond three years should be quoted separately by yearly basis.

**Additional features / optional items**

EDX upgrade	:The instrument should have the provision to add extra modules in future like EDX. Cost /conditionalities to be mentioned in detail.
Application package	a) Particle size analysis, statistical analysis of particles and powders – complete kit of accessories and software. b) Fibre analysis, statistical analysis of fibre diameter, pore size. c) 3D roughness reconstruction.
Sample holder	: Temperature controlled sample holder – Imaging of moisture containing samples. Temp control -25 °C to 50 °C with the accuracy of $\pm 1.5$ °C/ rate max. 20 °C per min. External chiller if supplied separately should be clearly mentioned along with make/supplier/country of origin.

**General conditions:**

- 1) The vendor must provide authorization letter from the manufacturer.
- 2) The system should be stand alone with respect to all functionalities of machine and its accessories, peripherals (including standard sample holder, special holder for low vacuum charge reduction, starter kit with 100 or more pin stubs, 100 or more carbon tabs, 1 or more pin stub gripper/twizzer and graphite paint) and add-on like PC, color printer, stabilizer and software.
- 3) All other accessories and peripherals required for installation, functioning and regular maintenance of the system must be quoted with the instrument.
- 4) Appropriate capacity of branded uninterrupted power supply (UPS) with a backup time of at least 30 min or more should form part of the core system itself and its cost (if any) should be clearly mentioned in the financial bid.
- 5) The financial bid must contain itemized prices for each item.
- 6) The bidders must agree to undertake that system would be transported and re-installed again at regular campus of the Institute (Sector 81, Mohali) for free of cost, if so required during next five years.
- 7) A list of 10 installations in India (particularly Govt. of India R& D organizations, please provide the user list) and a copy of at least three latest purchase orders (executed in the past 3 years) of the same/similar model in National laboratories or R&D organizations setup by GOI.
- 8) The vender must have servicing capabilities in Chandigarh or New Delhi area.
- 9) The system should be suited to Indian system of electrical inputs (220-230V/ 50Hz).

**(Chief Executive Officer)**