



केन्द्रीय औषधीय एवं सगंध पौधा संस्थान, लखनऊ
CENTRAL INSTITUTE OF MEDICINAL & AROMATIC PLANTS
(वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद)

(Council of Scientific & Industrial Research)

पोस्ट आफिस- सीमैप, लखनऊ

P.O. CIMAP Campus, Lucknow-226015

शुद्धिपत्र

No- 170(2)/2015-क्रय-T43

दिनांक- 09.03.2016

डिजीटल स्कैनिंग इलेक्ट्रान इलेक्ट्रॉन माइक्रोस्कोप की क्रय हेतु जारी निविदा दिनांक 26.02.16 के क्रम में दिनांक 07.03.2016 को आयोजित पूर्व बोली बैठक के संदर्भ में सक्षम प्राधिकारी ने तकनीकी विशिष्टताओं में कतिपय संशोधन अनुमोदित किया है। संबंधित विस्तृत विवरण सीमैप की वेबसाइट www.cimap.res.in पर उपलब्ध है।

तार्येनिविदा की शेष तकनीकी विशिष्ट, नियम और शर्तें यथावत रहेंगीं।

भवदीय,

भंडार एवं क्रय अधिकारी



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Corrigendum

No- 170(2)/2015-pur-T43

Date 09.03.2016

In continuation of our tender for procurement of Digital Scanning Electron Microscope dated 26.02.2016 and consequent upon the pre bid meeting held on 07.03.16, the competent authority has approved some modifications in the technical specification of the tender. For details please visit CIMAP website www.cimap.res.in.

The rest of the specifications, terms and conditions of the tender document remain unchanged.

Yours faithfully,

Stores & Purchase Officer

Specification for SEM and accessories

Digital scanning Electron Microscope latest model with state of art features (As per specification, Accessories, Attachments given blow) are required to investigate a wide variety of materials for analytical analysis of morphology, topography, elemental composition and crystallography. The SEM should provide flexibility and versatility to handle the challenges of today's wide ranging research needs of different scientific faculties. The system should be capable of analysing wide variety of samples i.e. Conductive, Non-conductive, contaminating, light emitting, delicate, hydrated, masked, dynamic, wet, oily, dirty & degassing type.

All the specification(s) must be supported by technical documents/ brochure and the page no. may be indicated in the compliance chart.

3 year warranty (includes all spare parts, accessories and attachments). 3 year AMC charges after completion of warranty period should also be quoted.

All the essential consumables that need frequent changing (like filaments, O-rings, apertures/diaphragms, etc), chemicals, carbon tapes, conducting tapes and pastes, any other item(s) needed for at least 3 years of smooth operation should be supplied. Supply of spare parts should be guaranteed for atleast 10 years. Free software updates.

Complete installation and demonstration at onsite.

Essential specifications

	Criteria	Specifications
1.	Electron optics	High performance thermal emission SEM column with dual-anode source emission geometry, fixed objective aperture, through-the-lens differential pumping or through-the-lens pumping Magnification: 20x to 1000000x
2	Accelerating Voltage	200v to 30kv continuously adjustable
3	Probe current:	up to 2 μ A or better, continuously adjustable , measurement and display the value when the user required.
4	Beam Deceleration Range	0 to 4 kV or Better, continuously variable and user selectable
5	Operational Mode & Resolution	High vacuum Mode 3.0 nm or better at 30 kV (Everhardt Thornley SED) 4.0 nm or better at 30 kV (BSE) 10.0nm or better at 3 kV (SE) 7.0 nm or better at 3 kV with beam deceleration & low voltage high contrast detector
		Low vacuum Mode 4.0 nm or better at 30 kV (Large Field Low vacuum SED) 4.0 nm or better at 30kV (BSE) 10 nm or better at 3 kV (SE)
		Extended vacuum Mode 4.0 nm or better at 30 kV (Secondary Electron detector for extended vacuum mode
6	Detectors	Everhardt Thornley SED (secondary electron detector); Low vacuum SED; Gaseous Secondary Electron detector or equivalent (for extended vacuum mode) High sensitivity low kV SS-BSED or equivalent, should work with all the three modes with sleeve/cone or similar for

		analytical and imaging. IR CCD camera
7		EDS Detector System with following configuration
		Liquid Nitrogen free Silicon Drift Detector (SDD type) Detecting Unit: Liquid Nitrogen free with integrated thermo electric cooling system Si ₃ N ₄ window Resolution of 132 eV or better, measured at MnK, 60,000 cps Peak shift less than 2eV up to 100,000cps Capable of quantifying elements down to Boron; Sensor: 25mm ² or better Peak to background >9000:1. Capable of handling input count rates >500Kcps and throughput of >100Kcps. The results and resolution should remain same at different count rates under different column environmental condition (HV, LV and extended vacuum) Latest EDS Analysis Software with advance features useful for data capturing and analysis, utility of spectrum, HPD or similar for visual peak confirmation, imaging/mapping , quantification , standardless quantification, live phase mapping, reporting in different formats, etc.
8	Chamber	284 mm size left to right or better 10 mm analytical WD
9	Vacuum system	TMP (turbo molecular pump/pumps) capable for Chamber vacuum (high) < 10 ⁻⁴ Pa or better Chamber vacuum (low) < 10 to 130 Pa or better Extended vacuum < 10 to 2500 Pa or better, water system
10	Specimen Stage	X-Y = 50 mm or better Z = 35 mm or better T = - 15° to + 75° or wider R = 360° continuous Repeatability: 2 µm (x and y) Tilt- True eucentric at analytical height (10 mm)
11	Sample sizes	Maximum size > 100 mm diameter Maximum thickness 50 mm Weight 1000g (without tilt)
12	Sample Holders	Multi-stub holder Single stub mount, mounts directly onto stage Multiple specimen holder kit
13	System Control & Integrated Computer Peripheral:	Suitable State-of-the-art Windows Operating System, Compatible computer (preferably i7) with latest configuration, keyboard, Mouse, two 22” or higher LCD Monitors, Essential softwares (licensed), colour laser printer, etc.
14	Image processor	Up to 4096 x 3536 pixels (14 MP) File type: TIFF (8 or 16 bit), BMP or JPEG Single frame or 4-quadrant image display 4 quadrants live Live or static signal mixing in color or grayscale 256 frame average or integration

		Digital video recording (.avi) Image histogram and measurement software
15	Supporting software	Navigation , automated routine SW temperature control, Interval image acquisition in 1 to 4 quads Multiple image saving function Movie Creator Utility (custom .avi file creation from automatically acquired TIFF image series) Live images of different detector to be viewed simultaneously, graphical user interface , topographical information by reconstructing a complete 3D model of the surface from SEM's Detector signals, analysis and visualization software suitable for 3D data acquired by a variety of technologies including X-ray microscopy and SEM.
16		Manual user interface
17		Joystick
18	Dynamic Experimental accessories	Peltier /Heating Stage Control Kit SW controlled Peltier cooled specimen stage SW controlled 850°C or more heating stage
19	Tool kits:	Suitable & essential Tool Kit is to be supplied with the main system as well as accessories for the day to day operations & required maintenance. The tools that are applicable to live images as well as saved images allowing for linewidth, angle and area measurement. At least set of 100 tungsten (W) filaments should be supplied. Stage and sample mounting stubs (including 45/90 degree SEM mount -10 nos. or more), stub holders.
20	Power Supply:	The complete system must be capable of running with Indian power standard: 230V AC, 50 Hz.
21	Ups	UPS (7.5 KVA or better with 60 MINUTES Back up with full load)
22	Warranty	3 year warranty (includes all spare parts). 3 year AMC charges after completion of warranty period should also be quoted.
23	Sputter Coater	1. Bench top model suitable for SEM applications and TEM coating applications: Metal sputtering or carbon evaporation - or both Warranty: Minimum 3 years. Power Supply: 230V AC, 50 Hz.
		Work chamber: Size 100 to 150 mm inside dia. x 100 to 150 mm high (or equivalent) with integral implosion guard. Easy access, easy to maintain with no alignment problems. Height adjustable specimen stage.
		Touch screen user interface: Full graphical interface with touch screen buttons. Should Include features such as a log of the last ten coatings carried out and reminders for when maintenance is due.
		Minimum Vacuum: 7×10^{-3} mbar or better. Sputtering: To a pre-determined thickness (with optional FTM) or by the built-in timer.
		Argon gas cylinder with regulator. An extra Au/Pd alloy

		target, 200 or more carbon rods Note: If recirculating water chiller is needed for vacuum operation, the same should be quoted.
		Optional : Quote separately <ol style="list-style-type: none"> 1. Film thickness measurement (FTM) system 2. Power Supply for Carbon evaporation: A robust ripple free D.C. power supply featuring pulse evaporation for reproducible carbon evaporation from rod or fibre sources. Current pulse: 1-90 Amps.
24	Critical point dryer	Compact, bench top type. Reproducible & minimal user interaction. Minimum 3 years warranty
		Large chamber (150 - 200 mm dia.) or similar Filler concept to reduce chamber vol. to 30ml
		Precise control of pressure and temperature.
		Recirculating heater/chiller, if needed to cool the chamber should be quoted. CO ₂ filled cylinder with regulator.
		Power Supply: 230V AC, 50 Hz.