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PERIYAR UNIVERSITY

(Reaccredited with 'A' Grade by the NAAC)

PERIYAR PALKALAI NAGAR
SALEM – 636 011.

RE-TENDER NOTICE

Advt. No. PU/R/RUSA Fund/Equipment Purchase-6/139-2018 Date: 26-04-2018

Sealed tenders will be received by the Registrar, Periyar University, Periyar Palkalai Nagar, Salem – 636011 up to 2.00 P.M. on **06-06-2018** for the **Purchase of Scanning Electron Microscope (SEM) with Energy Dispersive X-ray Spectrometer (EDS) Equipments for Periyar University** from reputed firms. The intended tenderers should show their credentials and get concurrence of the Registrar before purchase of tender schedules. Tender schedules can be had from the undersigned from **27-04-2018** to **04-06-2018** between 11.00 A.M. and 4.00 P.M. on payment of demand draft drawn in any nationalized bank in favour of **"The Registrar, Periyar University, payable at Salem"** as detailed below. Tender should reach this office on or before 2.00 P.M. on **06-06-2018.**

Tenders to be opened on **06-06-2018** at 3.00 P.M. in our office

The EMD in the form of demand draft should be drawn in any Nationalized bank in favour of the Registrar, Periyar University, payable at Salem.

Sl.No	Description	Qty.	Cost of tender documents (Including GST 12%)	EMD Rs	Time of completion of supply
1.	Scanning Electron Microscope (SEM) with Energy Dispersive X-ray Spectrometer (EDS)	01	Rs. 16,800/- (Cost-Rs. 15,000/- + GST 1,800/-)	EMD at 1% of the Instrument Value	1 Month

(Specifications are Overleaf)

REGISTRAR

Scanning Electron Microscope (SEM) with Energy Dispersive X-ray Spectrometer (EDS) Technical Specifications

S.No	Description	Specification
1	Source:	Tungsten heated cathode, Factory pre centered filaments
2	Resolution in high vacuum	3 nm at 30 kV or better
3	Resolution in low vacuum	4 nm at 30 kV or better
4	Probe Current	At least 1pA to 1μa
5	Acceleration voltage	0.5 - 30 kV, adjustable or better
6	Magnification	5x to 500,000x or more, continuously variable
7	Specimen stage:	Computer controlled Eucentric/Compucentric stage with 5 axis motorized movements. X = 80 mm or better, Y = 40 mm or better, Z = 45 mm or better. Specimen tilt: -10 to 80º or better, Rotation: 360º. The position of the stage has to be graphically displayed on the monitor for sample positions.
8	Specimen size	80 mm diameter or more
9	Detectors	Imaging with Secondary electron (SE) Back scattered electron (BSE) with required resolution mentioned above. IR-CCD camera for chamber view.
10	Non-conductive samples	Should have low vacuum facility for imaging non- conductive samples.
11	Vacuum mode:	Menu selectable, switching between high and low vacuum without involving any mechanical / electronic alignments. The column vacuum should be separated from chamber vacuum
12	Pressure Range in low vacuum mode	10-400 Pa
13	No. of Ports	10 or more for future expansion
14	Image display mode	19 inch LCD/TFT monitor, live images of different detector to be viewed simultaneously, full image live display, split live image, built in digital zoom, built in magnification, Pseudo color, Histogram display, Digital images should have resolution better than 2000 X 2000 pixels and should be saved as BMP,

		TIFF or JPEG format / 16,384 x 16,384 pixels, adjustable separately for live image (in 3 steps) and for stored images (11steps), selectable square or 4:3 or 2:1 rectangle
15	Computer	Desktop PC [Windows 10.0; 2GB DDRAM, Pentium dual core 3.5 GHz, 1.0 TB HDD], LED Monitor, Laser Color printer
16	Software	Should have the capability for performing 3D data analysis. Software should be capable to do measurement of data. Auto contrast, auto focus, auto stigma, auto gun alignment and biasing, maintenance videos, click center zoom, frame step move, saving position coordinate and seamless auto bias.
17	Other requirements	Safety measures against vacuum and power. Suitable anti-vibration platform, tool kit, spares filaments for two years (approx. 25 hrs per week). Calibration of magnification, dimension and resolution. Support kit/tool for specimen handling, stage and sample mounting stubs (including 45/90 degree SEM mount -4 nos.), stub holder.
18	Sputter Coater:	Sputter coater with gold and carbon targets, oil free
19	Energy dispersive X-ray detector (EDS)	EDS should have a minimum area of 30 mm. It should be liquid nitrogen free EDS. Elemental detection from Boron to Uranium. Resolution at least 129 eV. Should be capable of qualitative, quantitative and mapping analysis. Software: Automatic peak labeling, qualitative and quantitative analysis, elemental mapping, selective area analysis and multipoint analysis. Suitable elemental standard. Standard and standard less techniques should be possible. Customizable report generation.
20	Power Requirements	As per Indian Electrical Standards
21	Warranty	One year warranty and two years AMC
22	UPS/AC	Suitable online UPS for un-interrupted data collection of up to one hour. 2 Ton A/C – 1 No

Additional items incorporated to the above specification:

1. Lanthanum hexa boride crystal source for 2nm resolution against Tungsten (3nm)

2. Larger stage movement/chamber
   Enable large sample of around 200mm

3. Scanning transmission electron microscopy detector capable of doing Bright field & dark field image. (STEM detector)

4. VPSE Detector for low vaccum application (Bio) (VPSE detector)

5. Critical point dryer for Bio samples. (For Bio sample preparation)

6. Fisheye mode, stage navigation software.

7. Control panel/hard panel for manual adjustment of focus, astigmatism, scan rotation

8. Joystick for stage movement