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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-4/139-2018 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 **28-05-2018** for the **Purchase of Atomic Absorption Spectrometer (AAS) Equipment 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 **25-05-2018** 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 **28-05-2018**.

Tenders to be opened on **28-05-2018** 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	Atomic Absorption Spectrometer (AAS)	01	Rs. 6,720/- (Cost-Rs. 6,000/- + GST 720/-)	EMD at 1% of the Instrument Value	1 Month

(Specifications are Overleaf)

REGISTRAR

Atomic Absorption Spectrometer - Flame and Furnace Specifications

1. **Atomizer System**
   - I. A space-saving compact integrated and dual atomizer system with inbuilt flame and furnace atomizers.
   - II. An instant changeover from Flame to Furnace mode and vice-versa should be automatic through the software / manually.

Flame Atomizer

- I. The system should have software controlled automatic vertical and horizontal alignment of the flame burner head for optimum light transmission.
- II. System should come with Standard 10 cm titanium burner head for Air – Acetylene flame for better absorbance. For elements that need N_2O – Acetylene flame, 5 cm burner head should also be quoted.
- III. System should have software controlled flame ignition.
- IV. System should be quoted with suitable air compressor.

Furnace Atomizer

- I. The heating of the Graphite Atomizer should bethrough the walls of the tube, ensuring the uniform temperature distribution across the graphite tube.
- II. The Graphite Furnace Atomizer must be permanently aligned with no movement, alignmentand optimization required. The Furnace Autosampler must be integrated to main Spectrometer with a minimum range of 50 - 100 sample positions and should have the autodilution capability.
- III. Dispensed sample volume should be in the range of 1 -80 ul in increment of 1 ul or better and flushing volume should be more than 1 ml.
- IV. The system should be equipped with an integrated graphite furnace camera for easy autosampler tip alignment and real time viewing of the process happening in graphite furnace.
- V. The Graphite Furnace system should be equipped with pyrolytically coated graphite tube, L'vov platform, rapid furnace heating (up to 2600 ^{o}C), internal gas stop, matrix modification, fast signal processing, peak area measurements and Zeeman background correction for effective interference removal.
- VI. An imported recirculating water chiller unit of appropriate capacity for cooling of Graphite Furnace must be quoted by the manufacturer.
- VII. Zeeman / Hyper pulse / self reversal BG correction upto 2.5Abs

2. **Lamps**
   - I. The system should have 8 lamp holder with a provision of automatic lamp selection and fixed lamp positions.
   - II. Built-in power supplies for both theCoded Hallow Cathode Lamps (Cu, Na, Mn, Ni, Cr, Cd, Ca, K, Mg**)** and the special lamps that are used for the analysis of volatile elements like As, Hg, Se. (e.g. Boosted HCL's Ultra Lamps, Super Lamps, Electrode Less Discharge Lamps, etc.)
3. **Sample Introduction System**
   - I. A high sensitivity nebulizer system including impact bead and flow spoiler with corrosionresistant against the acids like 5% hydrofluoric acid, hydrochloric acid and Nitric Acid.
   - II. Corrosion resistant spray chamber.
4. **Optical System**
   - I. Monochromator system with a diffraction grating ruling density of atleast 1800 lines/mm blazed in both the UV and Visible regions.
   - II. A focal length of minimum above 250 mm and the Reciprocal Linear Dispersion of 1.6 nm/mm.
   - III. Variable slit width between 0.2 to 2.0 nm with automatic slit selection.

IV. System should have the maximum light transmission for the best detection limits with least maintenance.

V. System should Automatically adjusts to changes in lamp intensity for stable baselines and compensates for drift multiple times per second.

VI. System should have fast start-up and exceptional long-term stability without recalibration.

5. **Detector**
   I. Wide range Photomultiplier Tubes (PMT) - R 955 or Solid State Detector, with highest quantum efficiency.
   II. Wavelength range: 185 – 900 nm
   III. Operator selectable Read time from 0.1 to 120 seconds.
6. **Background Correction Methodology**
   I. Continuum Source (Deuterium Lamp) Background Correction for Flame.
   II. Zeeman Background Correction for the Graphite Furnace with the magnetic field parallel to the light beam.
7. **Gas Flows system**
   I. Software controlled flame ignition and automatic changeover of oxidant flow fromacetylene to nitrous oxide when switching to or from air-acetylene to nitrous oxide - acetyleneflame.
   II. Fully software controlled oxidant and fuel gas flow monitoring.
8. All safety interlocks built-in and additional feature like Burner Head Interlock, Nebulizer/End Cap Interlock, and Drain Interlock to be built-in.
9. **Sensitivity**: Vendor should provide report of the quoted system demonstrating >0.9 absorbance with the precision of <0.5% RSD from 5 second integrations for 5 ppm Cu standard.
10. **System should be quoted with** Vapor/hydride accessory to connect with Flame to address volatile/hydride forming elements. Hydride generation shall be automatic continuous flow type or flow injection type.

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11. Vendor should quote appropriate UPS, fume hood, acetylene cylinder, nitrous oxide, Argon and zero air cylinder or compressor with dual stage regulators and purification panel, PC and printer.

Warranty	: Two-year use guarantee should be provided.
Computer	: Suitable Desktop LED Monitor, Laser Color printer to work with the offered instrument.
UPS/AC	2 Ton AC and Suitable UPS for Flame and Furnace technique.