INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH

PUNE

CLARIFICATION ON TENDER NUMBER - IISER-PUR-0284-17

ITEM DESCRIPTION- PROCUREMENT OF GRAPHITE-FURNACE ATOMIC ABSORPTION SPECTROMETER WITH CHNS/O ANALYZER

Refer our Press Tender Notice No.IISER/S&P/10/17 dated 6/6/2017 for procurement of Graphite-Furnace Atomic Absorption Spectrometer With CHNS/O Anaylzer. Tender Reference Number – IISER-PUR-0284-17.

Pre-Bid meeting was held on June 13th , 2017 at 2.30 PM and minutes of meeting is as under.

At the outset, the Chairman welcomed all the Members and the representative of the Prospective Bidders and briefed in general the scope of the Project and thereafter requested Assistant Registrar (S&P) to brief the vendors on the salient features of the commercial terms and the indenting Officer to read out the clarification sought by the Prospective Bidders and replied thereto as detailed in Annexure -II

The representatives present were satisfied with the replies given and it was informed that the corrections / additons / clarifications given, as discussed during the Pre-Bid Conference would be hosted on the website of IISER Pune and all the Prospective Bidders are required to take cognizance of the proceedings of the Pre-Bid Conference before submitting their bids as stipulated in the Bidding Documents.

The other terms & conditions of the notice issued on our IISER website www.iiserpune.ac .in will remain unchanged. No more correspondence in this regard will be entertained

The meeting ended with vote of thanks to the Chair

Sd/-

13.6.2017 Assistant Registrar (S&P)

ANNEXURE -II

IISER PUNE

PRE-BID CONFERENCE FOR GRAPHITE-FURNACE ATOMIC ABSORPTION SPECTROMETER WITH CHNS/O ANALYZER

TECHNICAL QUERIES AND CLARIFICATION

TENDER NUMBER - IISER-PUR-0284-17 DATE : 13.6.17

S.No	Query/Clarification Sought	Clarification / Amendment
1	In the documents it is mentioned as Graphite-Furnace Atomic Absorption spectrometer **with** CHNS/O analyzer: We are manufacturers of only CHNS/O analyzer (one unit installed in IISER Pune) and do not have Atomic Absorption Spectrometer to offer. Can we quote the CHNS/O analyzer only? As there are hardly any manufacturers who can offer both instruments, on the other had if asked for individual instruments there are many manufacturers offering proven instruments in India.	We need a system that can analyze concentration of most of the elements in geological samples. The Atomic Absorption Spectrometer can measure many of the elements. The AAS may not measure abundance of few key elements (e.g. C, H, N, S, O), and hence, we also require a CHNS analyzer. We, therefore, require the Atomic Absorption Spectrometer with CHNS analyzer to meet our requirement and hence, no change in the specification is made in this regard.
2	Elemental Separation technique based on selective retention of the gases to have a steady-state,stepwise signal for accurate determination of gases : We	No clarification required.

	have most advanced and proven temperature program desorption TPD technique which is gives well defined peaks for each of the elements without any overlap even if the relative concentration of individual elements is very high as compared to each other.	
3	Sample size Mentioned is 0-500mg : We request you to also ask the bidders to show the demonstration of the analysis of the same on their respective instruments.	This suggestion has now been included in the revised specification.
4	The analytical ranges of the elements are not mentioned as how much mg of each elements are intended to be analysed.	The chemical compositions of geological samples vary widely and hence, no ranges are mentioned.
5	Suitable software for analyzing the data and running the instrument: Whether the instrument should be fully controlled through software for viz. setting temperature, flows, analysis start and analysis stop, etc.	We require suitable software for data analyses and running the instrument. Any additional feature in the software will be beneficial.
6	Request you to change alignment specification to automatic vertical alignment only.	We require automatic alignment both in vertical and horizontal direction. Therefore, no change is made in the specification in this regard.
7	Autosampler: Request you to consider capacity for same to be 60 or more.	As suggested, we have now changed the minimum auto-sampler position to be 60.
8	Request you to consider Self Reversal along with Zeeman.	This suggestion has now been included in the revised specification.
9	Request you to consider button push/ manual initial ignition.	We require automatic ignition of the instrument through software. Therefore, no change is made in the specification in this regard.
10	Sensitivity: We describe our AAS stability as RSD of <1% with 2ppm Cu solution at 0.3Abs. Kindly consider the same.	The suggested sensitivity for absorbance at 2 ppm has now been incorporated in the revised specification. We require a RSD of <0.5%, and hence, the RSD is not changed.
11	Revised Specifications	Revised Specifications are appended below

Revised Technical Specifications of Graphite-Furnace Atomic Absorption spectrometer with CHNS/O analyzer

The Earth and Climate Science program at IISER, Pune aims to procure a system for chemical analyses of geological samples. This system should have Atomic absorption spectrometer and CHNS analyzer with the following minimum specifications:

1. **Graphite-Furnace Atomic Absorption Spectrometer**

   Fully Automated Personal Computer controlled Integrated (graphite-furnace and flame) Atomic Absorption Spectrometer System with Double Beam optics.

Atomizer System

A space-saving compact integrated dual atomizer system with inbuilt flame and furnace atomizers.

An instant changeover from Flame to Furnace mode and vice-versa should be automatic through the software.

The vertical and horizontal alignment of the flame burner head in the light beam should be totally automatic through the software.

The Graphite Furnace Atomizer must be permanently aligned with no movement, alignment and optimization required. The Furnace autosampler must be integrated to main Spectrometer with a minimum of 60 sample positions.

Built-in camera in the graphite furnace to display actual sample introduction and method optimization. Accessory to provide high definition video images from inside the furnace graphite cuvette.

The Graphite Furnace system should be equipped with pyrolytically/equivalent coated graphite tube (20 nos. each) and maximum attainable temperature should be 3000 °C.

An imported air compressor (oil free, noiseless air compressor with air purifiers and moisture trap) and an imported recirculating water chiller unit of appropriate capacity for cooling of Graphite Furnace must be quoted by the vendor.

Stainless steel exhaust hood along with fan and fitting hardware required for supplied AAS unit.

Optics

A true double beam spectrometer system with high light throughput.

Minimum Wavelength range: 190 – 900 nm

Variable slit width between 0.2 to 1.0 nm with automatic slit selection.

Detector: Photomultiplier Tubes (PMT) or Solid State Detector

Lamps: The system should have a minimum 6 lamp holder with a provision for automatic aligning turret with computer controlled lamp selection for both flame and furnace.

Single element Coded Hallow Cathode Lamps for Na, K, Ca, Mg, Al, Fe, Mn, V, Ti, Ba, Sr, Rb, Cu, Cr, Ni, Co, Mo, Cd, Pb, Zn; and special lamps that are used for the analysis of volatile elements like As, Hg, Se. should be supplied with the instrument.

Standards: NIST traceable standards for each element separately 100 ml (1000 ppm) each for Na, K, Ca, Mg, Al, Fe, Mn, V, Ti, Ba, Sr, Rb, Cu, Cr, Ni, Co, Mo, Cd, Pb, Zn, As, Hg, Se should be quoted.

Sample Introduction System

A high sensitivity nebulizer system including impact bead and flow spoiler with corrosion resistant against the acids like 5% hydrofluoric acid, hydrochloric acid and Nitric Acid. Corrosion resistant spray chamber.

Background Correction Methodology

Deutrium and Zeeman background/self-reversal background correction/equivalent.

Deutrium (D2) lamp should be included as standard in the offer.

Gas Flows system

Software controlled flame ignition and automatic changeover of oxidant flow from acetylene to nitrous oxide when switching to or from air-acetylene to nitrous oxide - acetylene flame.

Fully software controlled oxidant and fuel gas flow monitoring.

All safety interlocks built-in and additional feature like Burner Head Interlock, Nebulizer/End Cap Interlock, and Drain Interlock to be built-in.

Vendor should quote appropriate ultra purity grade acetylene cylinder, nitrous oxide gas cylinder with dual stage regulators with stainless steel diaphragm and purification panel.

UPS

Suitable, branded UPS of 10 kVA should be included for minimum 1 hour back-up to run the AAS instrument during failure of power supply.

Sensitivity: Greater than 0.7 absorbance with the precision of <0.5% RSD from 5 second integrations for 5 ppm Cu standard, or equivalent sensitivity (i.e. 0.3 absorbance with <0.5 % RSD from 5 second integrations for 2 ppm Cu standard). System should be quoted with Vapor/hydride analysis for flame and furnace to gain an extra mileage of accessing ppb and ppt levels respectively.

Desktop Computer for AAS

Branded state of the art desktop Personal Computer having minimum configuration:

1 TB HDD, Latest Processor, 4 GB RAM, TFT-LED 21" Monitor, DVD writer, Optical Mouse, 10 usb port, Keyboard, Serial Port-2, Suitable Licensed Windows 7 or higher O/S loaded

2. Branded 23" LED colour monitor for an easy viewing

3. Branded USB Keyboard, mouse and b/w printer.

Suitable software for analyzing the data and running the instrument

Vendor should include 3 years of extended warranty.

2. CHNS analyzer

Elemental Separation technique based on selective retention of the gases to have a steady-state, stepwise signal for accurate determination of gases.

Samples

Sample size: 0-500 mg

Sample Type: solid and liquid samples

Micro analytical balance for weighing the sample with at least 1 µg readability.

Vibration free table of suitable size for keeping analytical balance

CHNS kits for 2000 sample analyses in solid and liquid matrices should be quoted.

Furnace

Two Furnaces for CHNS/O and CHNS/CHNS analyses

There should be facility in the instrument to shift from one furnace to another furnace automatically through software without manual intervention.

Furnace temperature: 1100°C (during the combustion the furnace temperature can reach >1600°C)
Pyrolysis (Oxygen determination) furnace temperature > 1000°C

Autosampler

Solid Sample introduction with > 60 Samples
Liquid sampling device as applicable for natural water sample analyses.
Liquid Sample Introduction (syringe-10, 50, 100 µL).

Detector

Thermal conductivity detection (TCD) or any other suitable detection methods.
Detector suitable for S analysis < 50 ppm to be included in the offer.

Gas requirements and accessories

Carrier gas: Mainly helium with ultra high purity
Combustion gas: oxygen with ultra high purity
Ultra high pure helium, ultra high pure oxygen and ultra-high pure nitrogen cylinders with necessary tubing, connectors and gas regulators must be offered in the main system

Desktop Computer for CHNS

Branded state of the art desktop Personal Computer having minimum configuration:
1 TB HDD, Latest Processor, 4 GB RAM, TFT-LED 21" Monitor, DVD writer, Optical Mouse, 10 usb port, Keyboard, Serial Port-2, Suitable Licensed Windows 7 or higher O/S loaded
2. Branded 23" LED colour monitor for an easy viewing
3. Branded USB Keyboard, mouse and b/w printer
Suitable software for analyzing the data and running the instrument

Warranty

Minimum warranty of 10 years for both the furnaces and Thermal conductivity detector (TCD) should be quoted.
Minimum warranty of 3 years for the instrument should be quoted.

UPS

Suitable, branded UPS of 10 kVA should be included for minimum 1 hour back-up to run the CHNS instrument during failure of power supply.

The bidder has to successfully demonstrate all the technical specifications of the quoted instrument to qualify for commercial bidding.

ANNEXURE -III

IISER PUNE

PRE-BID CONFERENCE FOR GRAPHITE-FURNACE ATOMIC ABSORPTION SPECTROMETER WITH CHNS/O ANALYZER

COMMERCIAL QUERIES AND CLARIFICATION

TENDER NUMBER - IISER-PUR-0284-17 DATE : 13.6.17

S.No	Query/Clarification Sought	Clarification / Amendment
1	The EMD asked is combined for both the instruments if we are allowed to quote for CHNS/O analyzer what will be the value tender fees and EMD we are supposed to submit.	The AAS instrument with CHNS analyzer needs to be quoted together.