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IIT Indore

File No: IITI(MM)/SIC/1/1A/689/KYP/2022-23

February 18, 2023

PREBID REPORT

The Online meeting for Pre-bid discussion was held at IITI on February 09, 2023, at 11: 00 AM for Procurement of Supply and Installation of Inductively Coupled Plasma Optical Emission Spectrometer GeM Bid No: **GEM/2023/B/302541** dated: **31/01/2023**.

The following firms attend Online Pre-Bid Meeting

M/s. Thermo Fisher Scientific

Ms. AMETEK Instruments India Pvt. Ltd.

M/s. PerkinElmer (India) Pvt. Ltd.

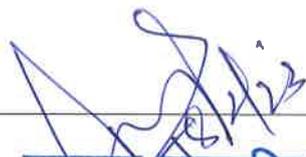
M/s. Shimadzu

M/s. C. Abhaykumar & Co.

The report of the meeting are as below:

Sl.No.	Query raised by firms	Query/Clarification/ Deviation sought	Clarification	Response from IITI
M/S C. Abhaykumar & CO				
1.	Point no.13 Technical Specification Page no.2	Halogen analysis; The equipment should be capable of determining Cl, Br and I present in the samples < 50 ppb level Reason: background is higher than 12ppb		Halogen analysis: The equipment should be capable of determining Cl, Br and I present in the samples to < 50 ppb level
2.	Point no.12 of Chapter 4 of ATC document page no.13	The quoted products should not be under end of sales or end of support in next 10(five) years from the date of submission. Declaration for the same is required.		The quoted products should not be under end of sales or end of support in next 10 years from the date of submission. Declaration for the same is required
M/s. PerkinElmer (India) Pvt. Ltd				
3.	Instrument Configuration: The ICP-OES instrument	The ICP-OES instrument should be compact instrument and d) Fully simultaneous and use	Most of the systems available in market are dual view which is more	The instrument must be ready in 30 minutes from shutdown even

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सहायक कुलसचिव
(सामग्री प्रबंधन विभाग)
Assistant Registrar
(Materials Management Section)

	<p>should be d) Fully simultaneous and use dual plasma view/ combined axial and radial viewing modes in a single method.</p> <p>g) The unit should be configured to aspirate and analyze aqueous and oil samples.</p>	<p>dual plasma view/ combined axial and radial in a single method in a single run automatically. There should not be manual interruption in Axial and Radial view. Instrument warm up time should be & lt;10 minutes.</p> <p>g) The unit should be configured to aspirate and analyze aqueous and oil samples. Suitable complete organic kit should be quoted for oil applications.</p>	<p>advanced technology.</p>	<p>when measuring elements below 200nm</p>
4.	<p>Optical System: a) The optical bench provided in the system should be a polychromator for simultaneous determination of multiple elements in a sample.</p> <p>b) If purge is required for the optical bench, provisions for purging either argon or nitrogen through a high-precision mass/volume flow controller should be provided.</p> <p>c) The usage of argon gas for purge should be less than 1 L/min. Else suitable gas generator should be provided.</p>	<p>a) The optical bench provided in the system should be a polychromator/Dual Monochromator for simultaneous determination of multiple elements in a sample.</p> <p>c) Instrument should work on N2 or Ar gas purge and the usage of argon gas for purge should be less than 1.5 L/min as standard. The vacuum pump should not be used in system. Else suitable gas generator should be provided-requested to remove this because N2 generator cannot be used and if it is used in instrument adds additional hardware requires routine maintenance.</p>	<p>Dual monochromator ICPOES is more advanced which doesn't require warm up and stabilization for 1 or 2 Hrs. This works on dynamic wavelength stabilization and does simultaneous background correction when doing analyte measurement. Suggested to remove N₂ generator because Most of the ICP available are need N₂ or Ar purging using cylinders. If Argon then Ar generators are not available and N₂ generator doesn't give pure gas and it takes more lab space as well. So, we do not prefer to use generator.</p>	<p>Every vendor has a polychromator based optics and if the optics are purged then more than 0.5 litres/min then high purity nitrogen gas generator. This is to address that when there is a gas cylinder change, the process of optimization of the whole ICP-OES as so needed in some system is done away.</p> <p>No change in the specs</p>
5.	<p>Plasma Geometry: Vertical plasma torch/Horizontal plasma torch design. The torch should be vertically /horizontally positioned with features for auto alignment and prevent soot deposit on the torch.</p>	<p>Vertical plasma torch plasma torch design. The torch should be vertically positioned with features for auto alignment and prevent soot deposit on the torch.</p> <p>Suggested to add below specifications which are very useful- Total plasma argon gas consumption should be less then 10L/min. The RF coil should not require water cooling and it should be maintenance free.</p>	<p>Suggested to keep Vertical plasma torch because most of the manufacturers they have changed their horizontal model to vertical because the torch life is more in vertical design compared to horizontal. Vertical designs are more compact we well. Argon is main expensive consumable in ICPOES so suggested to have better technology with min argon</p>	<p>To minimize the light loss when viewed from axial position of the torch. It is important to have the torch positioned axially especially when measuring elements in ppb level.</p> <p>To address the high TDS (> 20%) as well as organic samples it is preferred to also have a vertical torch.</p>

			gas consumption at;10L/min.	No change in the specs
6.	Focal length of optics: The focal length of the polychromator optics should be minimum 750 mm or higher.	The focal length of the polychromator optics should be minimum 300 mm or higher to cover all wavelengths in working range.	750 mm focal length is applicable to only one vendor. PerkinElmer Avio focal length is 300mm covers the whole optical length from 165 to 900nm. The focal lengths are depend on instrument optical design and different for different manufacturer so, suggested to remove this specification.	Please note that resolution over a wider range not just at 200nm is obtained when the optics have focal length above 750mm. Also, the generation of stray light is mitigated which raises spectral interference.
7.	Variable RF power Output: Provision to vary the power output of the RF generator in the range of 1500 W and higher should be provided and the same should be controlled through software.	Provision to vary the power output of the RF generator in the range up to 1500 W or more should be provided and the same should be controlled through software.	PerkinElmer has range up to 1500W and it is sufficient for plasma generation.	Operating a plasma >80% of the total RF output during analysis mode always put a additional stress on the RF system No change in the specs
8.	Spectral window: The instrument should be capable of measuring the wavelength from 135 to 770 nm or wider.	The instrument should be capable of measuring the wavelength from 170 to 770 nm or wider.	The range lower to 135nm is available with only one vendor. Suggested to change it. PerkinElmer Avio range is from 165nm to 900nm and we can do halogens.	Please note that multiple vendors do offer high end ICP-OES system having similar/ broader wavelengths. Further we are looking to measure halogen below ppm level. No change in the specs
9.	Halogen Analysis: The equipment should be capable of determining Cl, Br and I present in the samples & It; 10 ppb level.	The equipment should be capable of determining Cl, Br and I in ppm levels. suggested to remove- present in the samples & It; 10 ppb level.	ICPOES is many designed for metals. Cl, Br, I can be done but 10ppb is difficult so suggested to change it.	ICP-OES system offering a LOD of 50 ppb is acceptable
10.	Detector System: b) Even at extreme light intensities, the detectors should be capable of eliminating blooming effects and should read trace elements low signals irrespective of any adjacent high intensity peaks dominance. The detector	b) Even at extreme light intensities, the detectors should be capable of eliminating blooming effects /background effects and should read trace elements low signals irrespective of any adjacent high intensity peaks dominance. The detector can be either SCD or CCD or CID or CMOS. The	ICPOES is capable to do concentrations from ppb to higher ppm in dual view system so do not have challenges in running higher ppm concentrations. Set of detectors are available only with one	This system will be needed at our centre of excellence where all kind of samples from single digit ppb to double digit % are to be measured in all kinds of samples.

	can be either SCD or CCD or CID or CMOS. To minimize the turnaround time, offer with six sets of detectors.	Detector should be capable to get linearity more than 1000 mg/L. To minimize the turn-around time, offer with six sets of detectors - suggested remove six sets of detectors as it is applicable to one vendor only.	vendor. Suggested to keep one detector only.	No change in the specs. But we can accept with two sets of detectors, and they should be supplied with the system
11.	Control and evaluation software: g) Integrated NIST line library of over 60000 pre-defined lines. j) Facility to store complete spectrum together with complete and actual spectrum data for every analysis for future re-processing for quantitative analysis.	g) Integrated NIST line library of over >10000 pre-defined lines. j) Facility to store complete spectrum together with complete and actual spectrum data for every analysis for future re-processing for quantitative analysis-suggested to remove this as not useful if standards are not aspirated.	Every element in periodic table have maximum 4-5 sensitive wavelengths and there are total 70 elements can be done on ICPOES so there are max 350 wavelengths are useful for analysis. 60000 are not required so suggested to keep at 10000nos.	We are looking at a polychromator based optics which measures >30,000 wavelength. To accommodate here we revise this to >5000 wavelengths.
12.	Microwave Oven: 1. System should have at least two magnetrons with total minimum output power of 1800 Watt in un-pulsed mode over the whole power range for precise reaction control. 8. System must have built-in LCD touch screen display of size 10.1" for all routine operations and system should have built in manuals and videos on board. External displays are not acceptable.	1. System should have at least two magnetrons with total minimum output power of 1500 Watt in un-pulsed mode over the whole power range for precise reaction control. The system should be top loading to have easy access to individual vessels. 8. System must have built-in LCD touch screen colourful display of big in size for all routine operations and system should have built in manuals and videos on board. External displays are not acceptable.	PerkinElmer high pressure microwave digestion system installed power is 2000W and output kept is 1500W which is sufficient to achieve pressure 100bar. So suggested to keep 1500W output power. The size of	This system will be needed at our centre of excellence where all kind of samples will be needed to digested without stressing out the magnetron or damaging the vessels so used No change in the specs.
12.	High performance Multimode Rotor system (01 no): 2. Must have simultaneous active pressure measurement and control on all vessel positions via 8 nos. of hydraulic pressure sensors with pressure increase rate control for precise reaction control and highest safety during operation. Vessel monitoring via	2. Must have simultaneous active pressure measurement and control on all vessel positions via 8 nos. of hydraulic IR pressure sensors with pressure increase rate control for precise reaction control and highest safety during operation. Vessel monitoring via remote NOx or Acid Sensors in exhaust not acceptable to ensure highest safety during operation. Vessel Specifications (Qty. 8 or	Suggested to keep 100bar pressure which is necessary to digest difficult samples. 60 bar MDs system is low pressure digestion system,	Will revise the specs to 100 bar pressure which is necessary to digest difficult samples.

	remote NOx or Acid Sensors in exhaust not acceptable to ensure highest safety during operation. Vessel Specifications (Qty. 12 or more): 1. Volume: 100 ml or more 2. Operating temperature and Pressure: 260 °C or more at 60 bar pressure withhold times up to 3 hours or more for complete digestion of even the most difficult to digest samples. 3. Max. Temperature and Pressure: 310 °c or more and 140 bar or more.	more): 1. Volume: 100 ml or more 2. Operating temperature and Pressure: 260 oC or more at 100 bar pressure with hold times up to 1 hours or more for complete digestion of even the most difficult to digest samples. There should two years warranty on vessels. Consumables for 2500 runs. should be quoted with instrument.	
13.	Warranty period for ICP-OES	3 Years	No changes in the warranty period
14.	Warranty period for Microwave digestion system	3 Years	
15.	Warranty period for Accessories	3 Years	
16.	Warranty period for consumables	3 Years	Vendor should supply consumables that would last for at-least 3 years.
17.	We also request you to give us minimum 15 days for bid submission from amendment date on GEM or on IIT Portal.		Bid submission date extended upto 27/02/2023 ✓
18.	AMC Charges after warranty		AMC charges should be quoted as option given in the GeM portal ✓

Last Date & Time of Submission of Bids online (Technical & Financial Bid):- February 27/02/2023 at 03:00 PM (IST)

Opening of Technical Bids online:-

February 27/02/2023 at 03:30 PM (IST)

All prospective/willing bidders are requested to take note of this report as part of the Tender document. All other parts of the tender including the terms and conditions of the tender will remain Unchanged.

Assistant Registrar (MMS)

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