



CSIR-NML

सीएसआईआर - राष्ट्रीय धातुकर्म प्रयोगशाला

(सीएसआईआर की एक संघटक प्रयोगशाला, विज्ञान एवं प्रौद्योगिकी मंत्रालय)
भारत सरकार, बर्मागिंस, जमशेदपुर - 831007, झारखंड (भारत)

CSIR-National Metallurgical Laboratory

(A Constituent Laboratory of CSIR, Ministry of Science & Technology)
Govt. of India, Burma Mines, Jamshedpur - 831 007, Jharkhand (India)

10.09.2026

CORRIGENDUM

Tender Reference No. :- PUR/48/MDR/DB/EQM/26-27

Tender ID :- 2026_CSIR_289642_1

**Item Name :- Supply, Installation & Commissioning of
INDUCTIVELY COUPLED PLASMA-MASS SPECTROMETER SYSTEM**

NOTE: The Bids must be submitted in the Central Public Procurement Portal (URL:<https://etenders.gov.in/eprocure/app>) only. Manual/Offline bids shall not be accepted under any circumstances. Bidders should quote in INR only.

Consequent to the Pre-Bid Meeting held on 07.09.2026, the revised technical specifications are attached in Annexure-A.

The bidders are requested to submit their bid based on this revised technical specifications as per Annexure-A.

All other terms and conditions shall remain same.

Stores & Purchase Officer,
CSIR-NML, Jamshedpur

ANNEXURE-A

Technical Specification of Inductively Coupled Plasma – Mass Spectrometer System

S. No	Description	Specification
1.	Instrument	Automated, single quadrupole-based Inductively Coupled Plasma Mass Spectrometer (ICP-MS) system for an accurate and precise analysis of trace and ultra-trace elemental concentrations (ppm, ppb, and ppt levels) in a wide variety of sample matrices, from a single sample aspiration under a user-defined analytical method.
2.	Sample Introduction System:	- System should have a high-precision peristaltic pump (4 channel, 12 roller). - It should have the capability for direct handling of samples with a minimum of 25% total dissolved solids without liquid-liquid dilution. - Standard single-piece quartz torch with a removable quartz injector of 2.0–2.5 mm inner diameter for efficient sample introduction, atomization, and ionization.
3.	Ion Source:	RF generator of power of minimum output 1.5 kW and frequency of either 27 or 34 MHz
4.	Extraction Interface:	- Sampler cone (Ni) and skimmer cone (Ni) with suitably designed orifices for efficient ion transmission. - System should support platinum (Pt) sampler cone and skimmer cones for future upgradations. - Background noise must be <1 cps at 4.5/9/220 amu.
5.	Cooling System:	- Compatible water re-circulating chiller should be provided for continuous cooling of system and its peripherals. - Chiller unit should function for 24x365 continuous operation. - The noise level should be < 70db
6.	Vacuum System:	- Should have a rotary pump and turbo molecular pump with split flow for extremely high gas throughput. - Provision for maintaining vacuum in the analyzer housing when plasma is off or in the event of a power failure.

7.	Mass Analyzer System	• Collision and suitable mass cut off feature and should operate in between 2.0 – 3.0 MHz
8.	Mass Analyzer:	• Mass Range: 2 to 260 amu or more • Mass Stability: <0.05 amu/8 hours of continuous operation or better • Scan Speed: > 3500 amu/sec
9.	Gas Flow Control System:	• Gas flow control system should be of microprocessor-based precision electronic mass flow controller (MFC) (or) electronic flow controller (EFC) for all the gas channels such as plasma support gasses. • Offered instrument should have factory-fitted MFC/EFC as a standard feature for operating in standard mode. • It should have computer-controlled safety interlocks and automatic gas flow controls for startup and shutdown operation.
10.	Detector System:	• Ion detector should be a discrete Dynode electron multiplier unit or equivalent. • Detector should be able to analyze high and low concentration of isotopes simultaneously with 11 orders or more dynamic range in a single scan. • Both the analog and pulse counting modes should be protected against overload. • Minimum dwell time 100µs in both pulse count and analog mode.
11.	Cell Technology for Interference Removal System	• In addition to Standard Mode, the system must have a cell before the mass analyzer, which is capable of removing polyatomic interferences on various analytes by using the mass cut-off feature or equivalent. • System must have cell for collision/reaction cell gases
12.	Instrument Control and Operating Software	• System shall be supplied with integrated software for complete instrument control along with the measurement precision better than 0.2 % RSD. • Computer Workstation: A branded desktop PC with 22-inch or larger LED monitor, i7/ equivalent/higher processor, minimum 32 GB RAM, minimum 1 TB SSD or higher-capacity storage, pre-installed windows operating system, basic Microsoft office compatible with the offered ICP-MS software, keyboard and optical mouse • One laser jet printer with automatic duplex printing facility.

13.	Performance	<u>Sensitivities</u> • 7Li: > 45 Mcps/(mg/L) • 115In: > 140 Mcps/(mg/L) • 205Tl/238U: > 120 Mcps/(mg/L) <u>Detection Limits :</u> • 7Li / 9Be: ≤0.5 ppt • 115In: ≤0.1 ppt • 205Tl/238U/209Bi: ≤0.1 ppt
14.	Spare Parts, Accessories, Consumables and other essential requirements:	Additional spares/consumables that will be supplied in addition to the standard spares • Nebuliser-01 No. for acid and 01 No. for alkali • 01 No. HF Resistant Sample introduction kit, along with nebulizer, torch and all the sample introduction accessories • Sampler Cones-(Ni Cones: 01 No. and Pt Cone: 01 No.) • Skimmer Cones-(Ni Cones: 01 No. and Pt Cone: 01 No.) • Injector- 02 Nos. • Torch- 01 No. • Spray chamber- 01 No. • Sample introduction peristaltic pump tubing- 10 packs (12 per pack) • Sample drain peristaltic pump tubing- 10 packs (12 per pack) • In sample cone gasket – 02 Nos. • REEs multi-element calibration standard solution (17 elements)- 100 mL; 100ppm; 01 No. • PGE calibration standard solution (Pt, Pd, Rh, Ru, Ir, Os)-100 mL; 100ppm; 01 No. • Trace element and multi-element calibration standards (Ag, Al, As, B, Ba, Be, Bi, Ca, Cd, Cs, Co, Cr, Cu, Fe, In, K, Li, Mg, Mn, Mo, Na, Ni, Nb, Pb, Rb, Sb, Se, Sr, Ti, Tl, V, U, Zn)-100 mL; 1000ppm;01 No. • Si, P and S multi-elemental/individual calibration standard 100 mL; 100 ppm; 01 No. • Fume exhaust system: 01 Set • Sufficient amount of coolant for offered chiller for trouble free five years of operation • one numbers of additional RF coil should be quoted for uninterrupted operation
15.	UPS	• Branded 20 KVA or better true online UPS for 30mins backup of main system and its necessary peripherals.
16.	Installation Peripherals	• Vendor must supply all necessary pre-installation requisites/consumables, including tuning solutions,

		gases, and ICP-MS standards for the complete installation and demonstration of the instrument. • Gas cylinders with regulators (Ar gas: 04 Nos. and He gas: 02 Nos.) • Minimum 3-position gas manifold and Gas Panel (Argon, Helium for collision and reaction cell gas as per system requirements). • Suitable Exhaust System
17.	Warranty & AMC	• On-site comprehensive warranty on the entire setup with accessories for 03-years from the date of commissioning and acceptance of the system. • After completion of 03- year comprehensive warranty, AMC will be effective for 02- years. • During AMC period, for each year, two preventive and two breakdown visits (as and when required) must be incorporated. • AMC offered amount will also be considered for price comparison.
18.	Training, Commissioning and Installation	• Onsite application training should be given for at least 03 days after installation for minimum 06 members. • Commissioning, demonstration and installation must be carried out by the supplier at CSIR-NML, Jamshedpur.
19.	Acceptance Test	• Vendor should demonstrate performance specifications of the instrument as follows: <u>Sensitivities</u> • ^7Li: > 45 Mcps/(mg/L) • ^{115}In: > 140 Mcps/(mg/L) • $^{205}\text{Tl}/^{238}\text{U}$: > 120 Mcps/(mg/L) <u>Detection Limits :</u> • $^7\text{Li} / ^9\text{Be}$: ≤ 0.5 ppt • ^{115}In: ≤ 0.1 ppt • $^{205}\text{Tl}/^{238}\text{U}/^{209}\text{Bi}$: ≤ 0.1 ppt
20.	General Requirements	• The technical specifications of the quoted models shall be verifiable from the official brochure and/or official website of the OEM. • Manuals related to instrument, operation and service should be provided along with the instrument. • Vendor should provide an undertaking that spares should be available for at least 10 years from the installation of the system. • Vendor should provide undertaking that all the software upgrades will be free of cost during comprehensive warranty.

		• Vendor must share the compliance statement and submit it along with the technical bid with their own model details. • Recent PO (at least two numbers) of same/ similar kind of equipment, supplied to Govt./PSU/reputed Pvt. organization in last three years should be submitted along with the bid.
21.	Scope of NML	• Single Point Electrical connection • Space for installation