Notice Inviting e-Tender

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Procurement, supply and installation of Hi Tech Analytical Instruments for State Drugs Control & Research Laboratory (SDCRL) of the Government of West Bengal

(Submission of Bid through *online*)

Bid Reference No.: WBMSCL/NIT-279 /2025 **Dated-08.04.2025**

The following amendment have been made in the tender document,

Amendment –I (Revision of Technical Specification)

The revised technical specifications for the item is given below,

Quadrupole Inductively Coupled Plasma – Mass Spectrometer (ICP-MS)

S. No.	Feature	Requirement
1.	Purpose	Analysis of trace metals to ppb/ppt level in diverse kind of samples like cosmetics, drugs, water etc.
2.	Basic Design	Latest and advance technology bench-top ICP-MS with cell collision & reaction cell technologies. The system should be completed in all respects with built in features of hardware & software.
3.	Sample Introduction	• Integrated computer controlled minimum 3-channel peristaltic pump with 10/12 roller suitable arrangements. • Integrated Peltier cooled spray chamber (-5 to 20°C or better) with an accuracy of ±3°C for effectively improving signal stability and reducing oxide interferences • System should have integrated and software controlled UHMI/AMS/Prepfast accessories alongwith 100 fold or more dilution capabilities to handle total dissolved solids (TDS) more

		than 25% by Argon &or liquid dilution. All necessary accessories required for running high matrix high TDS samples should be included as standard supply.
4.	Plasma and Torch Setup	• RF power range: 600-1500W or better • RF Generator: 27/34 MHz • Torch Alignment: X,Y,Z automatic and computer controlled • Should have at least software controller variable 04 mass flow controllers to control plasma, auxiliary makeup, carrier gases and makeup/dilution gas
5.	Interface	• Cone Interface: Standard Ni sampler and skimmer cones. ICPMS systems must have Single interface to achieve all guaranteed performance specifications of ICP-MS instrument without and manual intervention or changeover for high matrixes, high sensitivity, and high TDS samples. • Lon Lens: off-axis ion lens or suitable design to provide high ion transmission and backgrounds to deliver superior detection limits, sensitivity, and oxide ratio.
6.	Collision Reaction Cell technologies	• System equipped with best in line technology: Capable of operating in standard (No gas), Collision modes and Reaction mode (Pure or Premix gas form) should be able to remove polyatomic interferences as per all national and international regulations. • Fully automated and software-controlled changeover between No gas, Collision and Reaction mode without manual intervention with dedicated MFC/EFC for collision and reaction Gas. Cell gas must automatically changed. • Separate gas lines with dedicated MFC/EFC for Collision and Reaction gas with automatic control must be supplied for contamination free trace analysis, as per system requirement (i.e. He, $H_2/O_2/CH_4$/Mixture of gases etc.).
7.	Mass Analyzer and Detector	• Quadrupole based, 2.0 MHz or more • Mass Range: 5-260 amu or better to analyze all elements • True Linear Dynamic: 10 orders $\leq$0.3cps to $\geq 10^9$cps or better without any hardware interchange of software adjustment • Dwell time: $\leq$3ms or better • Scan speed: $\geq$3000amu/s or more
8.	Performance Specifications	Detection Limit ng/L (ppt) • Low mass (Be^9/Li): $\leq$0.5 • mid mass Y/In/Co^{59} $\leq$0.2 • High Mass U/TI/Bi : $\leq$0.2 Sensitivity (M cps/mg/L) • Low mass (Be^9/Li): $\geq$40 • Mid Mass In/Y: $\geq$150; • High Mass U/TI/Bi: $\geq$80 ➢ Oxide ratio: CeO^+/Ce^+ $^{<2\%}$; ➢ Background noise (no gas mode) @4/9 amu or suitable : $<$1 cps ➢ Mass resolution (5-260 amu) : Variable $\leq$0.4 to $\leq$1 amu or better & should be definable in mass range 5-260amu
9.	Detector	• The ion detector should be discrete Dynode electron multiplier unit or equivalent. Detector should be able to analyze high and low concentration simultaneously • It should have true Linear Dynamic range of 10 orders of

		magnitude. • Both the analog and pulse counting modes should be protected against overload. Integration time 100μs in both pulse count and analog modes as per system hardware requirement.
10.	Vacuum system	Should have rotary pump and turbo molecular pump with spilt flow for extremely high gas throughput. Vacuum should be 5 x 10^{-6} mbar or suitable range in open valve condition and shall be $1x10^{-6}$ mbar or suitable range in closed valve condition or suitable specifications as per system design requirement
11.	Software	User-friendly that guide users through method and sequence development and method templates for rapid development of commonly used methods. The software must GLP compliant for research institute.
12.	Standard Accessories Required	i) ICPMS Autosampler: Minimum 200 vials or more capacity, 10 ml or suitable volume, Complete sealed/covered enclosed & duct/hose. Welplate/Microplate kit must be included. ii) NIST calibration standards 21 elements 100ppm (250ml), - 125ml iii) Suitable OEM recommended PC CPU, 24" Monitor, MS Office and color laser Printer. Factory supplied suitable & compatible branded PC for running offered software or Portable Data Handling & Storage.
13.	Items for Installation requirement	Gas cylinders for ICPMS-Argon -02 No. , regulators for cylinders as applicable, He gas cylinder – 01, Reaction gas cylinder i.e. hydrogen/oxygen as per system hardware requirement -1 No., Gas Panel as per requirement. 15 KVA Online UPS with 30 min Backup, Gas line installation, Exhaust for ICP-MS.
14.	Installation and Acceptance Testing	The performance of the instrument along with accuracy and precision must be demonstrated wit real samples and international CRMs.
15.	Consumables (All the consumables should be quoted & specified with OEM or local Number alongwith qualities)	1. Nickle tipped sampler, Skimmer cones – 01 set 2. Standard nebulizer – 01 Nos. 3. Standard spray chamber – 01 set 4. Standard Peristaltic pump tubing for drain Pk/12 – 05 set 5. Standard Peristaltic pump tubing for samples Pk/12 – 05 set 6. Peristaltic pump tubing for ISTD Pk/12 – 04 set 7. Oil Element/Mist Filter – 01 set 8. Pump oil- 5liter 9. Cone cleaning solvent – 1 gallon 10. Swab-cotton tipped both ends (pk/100) – 2 pack 11. Autosampler Vials – 2000 Nos.
16.	Warranty	3 (Three) Years for complete supplied system from the date of installation. The warranty should be from OEM with part number. The warranty should cover total ICP-MS, UPS, fume hood, Exhaust, manifold & other 3rd Party Items (Except Consumables items) system including all accessories.
17	Sample Preparation System: Microwave Digestion System	• The system should have 8 or more • Microwave power ≥ 1900 W or more • Vessel Volume: 100ml or more • Cavity volume: 70 L or more • Maximum operating temperature: 260^{0}C or more • Maximum operating pressure ≤ 45 bar or more

	to be Added	• Cavity chamber made solid stainless steel with PTFE layer for corrosion resistance. • Rotor with vessel made of PTFE/TFM • Necessary UPS minimum 6 KVA • Necessary Fume Hood