

Notice Inviting Open Tender for Procurement of a single collector quadrupole ICPMS for measurements of concentrations of elements in liquid as well as solid samples (in-situ, laser ablation)

at the Indian Institute of Science, Bangalore

(Tender from Domestic Vendor and Suppliers)

Bids are invited from domestic OEM / authorized distributor of domestic OEM

(Last date of Submission November 25, 2021)

Date: November 10, 2021

Dear Sir/Madam:

Please send your tender documents valid for 180 days from the actual date of opening the technical bid, for the supply of equipment described below. Your documents/quotation should clearly indicate the terms and conditions of the quotations, delivery schedule, entry tax, payment terms, warranty coverage etc. The tender should be submitted in two separate sealed envelopes – one containing the “Technical bid” and other containing the “Commercial bid”, both of which should be duly signed and must reach the undersigned on or before 17:00 hours November 25, 2021. Please provide your contact details so that we can get in touch with you and set-up appointments for opening the bids.

Chairman (chair.ceas@iisc.ac.in)

Centre for Earth Sciences

Indian Institute of Science,

Bangalore 560012,

Karnataka, India.

Attn: Ramananda Chakrabarti

Section 2 - Eligibility Criteria:

With respect to this tender, the rules laid out by the Government of India in order No. P-45021/2/2017-PP (BE-II) issued by the Public Procurement Section, Department of Promotion of Industry and Internal Trade, Ministry of Commerce and Industry, dated 16th September 2020, will be followed. Per this order, only Class-I and Class-II local suppliers as defined below are eligible to participate in this open domestic tender. Non-local suppliers are ineligible to participate in this tender.

Relevant definitions as per Government of India order:

- Class-I local supplier - a supplier or service provider, whose goods, services or works offered for procurement, has local content equal to or more than 50%
- Class-II local supplier - a supplier or service provider, whose goods, services or works offered for procurement, has local content more than 20% but less than 50%.
- Non-local supplier - a supplier or service provider, whose goods, services or works offered for procurement, has local content less than 20%.
- Local content – the amount of value added in India which shall, unless otherwise prescribed by the Nodal Ministry, be the total value of the item procured (excluding net domestic indirect taxes) minus the value of imported content in the item (including all custom duties) as a proportion of the total value, in percent.

Only Local Suppliers are eligible to participate in the bid. The bidders must go through the Government of India order stated above and follow all the rules and regulations therein. The covering letter Should clearly indicate whether the vendor is a Class I or class II local supplier failing which the vendor will automatically be disqualified.

SECTION 3 – Technical Specifications

A single collector quadrupole ICPMS for measurements of concentrations of elements in liquid as well as solid samples (in-situ, laser ablation).

Sample introduction, ion source, RF plasma:

- Sample Introduction Kit including Peltier Cooled Spray Chamber (Temp Range -10 to 20 Deg C), PFA/ Glass/Quartz Nebulizer, Ni (or Pt) Sample and Skimmer cones.
- Complete set Suitable Accessory along with organic kit and MFC for oxygen to aspirate organic samples directly.
- Computer controlled 27 MHz RF generator operating from 400 to 1600 watts for automatic control of torch ignition, shutdown, and system warm up.
- The system should be able to change over from normal Plasma conditions to cool Plasma with direct control from software.
- The Plasma torch should have provision for software-controlled alignment for horizontal position, vertical position and sampling depth.

- Standard large orifice Ni sampling (1.1 mm ID) and skimming (0.5 mm ID) cones with suitable diameters.
- The ion deflection system should have efficient mechanism for removing all neutrals from the Ion path.
- The Ion path must be maintenance free

Gases, Cell technology and mass flow controllers

- System should have dedicated MFCs to control plasma, auxiliary, nebulizer, additional / dilution gas, reaction gases, collision gases, high TDS & oxygen for organic samples.
- The system must either have chemical or physical resolution to separate polyatomic and isobaric interferences from the following masses: 39K, 52Cr, 55Mn, 56Fe, 75As, 78Se, and 80Se in both HNO₃ and HCl matrices.
- For chemical resolution: The system should have reaction and collision cell with controlled reaction capability to carry out mass shift reactions.
- For physical resolution a range of $\Delta M/M$ of 300 to 1200 is desirable.
- ICPMS shall incorporate Cell offering operation: Standard Mode, Collision Cell (He) Mode with KED and Reaction mode for interference removal in a single analytical method simultaneously.
- Cell must be Non-consumable with zero maintenance. If consumable, then additional 2 cell should be quoted along with main system.
- There should be Four gas specific mass flow controllers for collision and reaction gas for He, H₂, NH₃, O₂ etc. in a safe premix or pure form and compliant manner. The offered instrument should have factory fitted MFCs as a standard feature. System should have the capability to handle an additional of min 15 CRC gases based on request.

Mass Analyser

- User definable resolution for improved dynamic range and extended sensitivity
- Minimum Unit mass (1 amu) resolution capability
- Mass calibration assessed and automatically updated.
- The Mass range should be from 4-290 u or better
- Scan speed: >3700 u/sec or better at 40 mass intervals
- Mass stability: ≤ 0.025 amu per day or more.

Detection and performance specifications

- The ion detector should be a dual mode discrete dynode electron multiplier (or equivalent) with 10 order or more magnitude of dynamic range
- The dual-mode detector assembly must come standard with the system.
- Minimum dwell time of 100 μ s or better in pulse and analog.
- Sensitivity specifications (must be demonstrated during installation):

Sensitivity (Mcps/ppm):

- Li/Be: ≥ 65
- In/Y: ≥ 280
- U/Tl: ≥ 330

Detection limits (ppt):

- Li/ Be: < 0.50
- In/ Y: < 0.1
- U/ Bi: < 0.1
- 32S (as SO+) : < 200
- 31P (as PO+) : < 50
- 78Se : < 1
- Oxide ratio: CeO/Ce <2% or better
- Ba⁺⁺ or Ce⁺⁺/ Ba or Ce <2% or better
- Background mass 4.5/9/220: No gas <1 cps
- Short Term Stability ≤2% RSD or better
- Long Term Stability <3% RSD or better
- Mass Stability < ± 0.025 u per day

Software and control PC

- Suitable Data Station with all Software controls & future upgrade controls with Instrument software.
- Software should provide comprehensive functionality for analysis through fully automated process with auto tuning.
- The software should have data handling and data management, Data security and access control with 21 CFR part 11 environment supports, compliance management and customizable reporting etc.
- The system should have Server connectivity and should be capable of 21 CFR Part 11. There should be facility for automatic data transfer from ICPMS PC to central server.
- Minimum 2 offline software licenses must be provided as standard
- The software must be a 64 bit application for future upgradeability.
- The future software upgradeable should be free of cost.
- System should be upgradable with suppressor-based separation system using integrated single window-based software operation for all the modules connected with MS.
- Branded HP/Dell Personal Computer should be supplied along with instrument from manufacturer.

Consumables:

- A complete set of essential and comprehensive accessories/consumables/spares/sample should be quoted for 3 years of operation. These include Ni sampler and skimmer cones, PFA nebulizer (with both detachable and integrated probe), spray chambers, plasma torch, injectors, preventive maintenance kits, etc.
- Any other consumable required for smooth operation of system must be quoted separately. (List of comprehensive and essential consumable must be mentioned in tabular form with individual cost of the item)

Other requirements:

- Details of installation-site requirements maintenance and service support should be described
- Details of gases, regulators, cylinders necessary for both solution ICPMS and laser ablation ICPMS should be provided and maybe quoted separately
- Operation and service manual shall come with the equipment.
- Suitable UPS with 30 min Backup
- Autosampler of minimum sample vial holding capacity of 200 positions or more should be offered. It should be metal free and should have independent X-Y-Z movement.
- Vendor must give list of references in India and elsewhere in the world where the quoted system is working satisfactorily (both for solution ICPMS and laser ablation ICPMS)
- Vendor has to give 5 days on site training after the installation for practical demonstration for both solution ICPMS and laser ablation ICPMS.

Warranty

- Warranty service that includes parts and labor for at least 24 months, which shall begin after successful commissioning of the equipment. Please also quote subsequent (i) comprehensive maintenance cost (parts & labour) and (ii) maintenance cost (labour only) after expiry of the warranty period.
- The warranty should cover all laser components that are not considered consumables. Spare of beam path optics that are consumables and replacement dependent on number of laser shots and energy applied for back-up should be provided.
- Equipment installation, commissioning tests and training should be included in the tendered price.

Support Service

- Online support includes phone, e-mail and internet-based remote access within 24-48 hours of initial contact.
- On-site service is included, as deemed necessary, following online evaluation. Goal to provide on-site service within 48 hours once a service call has been entered based on engineer availability.

Section 4–Terms and Conditions:

1. The tender document should be in English and be submitted in **two bid system; i.e., Technical bid, and Commercial bid in two sealed envelopes with commercial or technical bid clearly indicated on the envelope.** These two sealed envelopes should be placed within a larger envelope and “ICPMS Bid – Ramananda Chakrabarti, Centre for Earth Sciences, IISc” should be written on the outer envelope.
2. The technical bid must include all details of technical specifications of the instrument along with commercial terms and conditions masking only the price component. Bill of materials, brochures, technical datasheets, and any other document may be enclosed to help the

evaluation of the technical bid. Please also include warranty terms and any other information on upgradation terms/extra accessories in the technical bid.

3. The technical bid must clearly state the specifications of the main instrument (A) along with the accompanying standard items and all other details including the warranty terms (B-I) as specified in section 3 of this document.
4. The commercial bid must include the base price of the instrument delivered in place and all components including controller accessories plus any additional GST component.
5. The commercial bid must indicate detailed component-wise and itemized price breakup and must include optional items/accessories.
6. Bidder should have well established own establishment. Enclose Company Registration Certificate, PAN, 3 years of audited balance sheets and turnover.
7. **The covering letter in the technical bid should clearly mention whether the vendor is a Class I or Class II local supplier, failing which the vendor will be automatically disqualified.**
8. In the technical bid include the complete details all components of the main instrument and the accessories as to whether they are sourced locally or foreign made/imported along with the manufacturer and sourcing details.
9. The 'Class-I local supplier/Class-II local supplier' is required to indicate the percentage of local-content and provide self-certification that the item offered meets the local content requirement for 'Class-I local supplier/Class-II local supplier' as the case may be. They shall also give details of the location(s) at which the local value addition is made.
10. The vendor should provide detailed cost breakup for the Indian and foreign content of the bid in the commercial bid proving their status as a Class I or Class II local supplier. Vendors who do not provide such justification in the commercial bid will be automatically disqualified.
11. In case if there are any imported/foreign made components, the commercial bid must indicate procurement price from the manufacturer and any import duties incurred. IISc will not be responsible for any import duties.
12. The vendor should have a good track record of having previously supplied similar equipment in India or elsewhere in the world (Please furnish complete details including names and contact addresses). Reference letters may be sought by the committee to arrive at the decision.
13. The vendor should have qualified technical service personnel for the instrument based in Bengaluru.
14. Bidder should have executed at least three order of similar instrument in India in the last 2 years. (Please provide copy of purchase orders and details).
15. The bidder should provide a list of national and international publication resulting from the data of the instrument.
16. The Bidder should not be currently blacklisted by any institution, bank in India or abroad (Please provide self-declaration).
17. No advance payment will be made, the payment will be made after delivery and installation of equipment.
18. Agency commission (not encouraged) if any should be clearly mentioned and detailed in the commercial bid.

19. The lead time for the delivery of the equipment should be less than two months from the date of receipt of purchase order and must be mentioned in the technical bid.
20. If the equipment or any parts/accessories are found to be defective, they must be replaced or rectified at the cost of the supplier within 30 days from the date of receipt of written communication from us. If there is any delay in replacement or rectification, the warranty period needs to be extended by a year and/or face a penalty equal to the valuation of the equipment.
21. The technical bid will be opened first and evaluated.
22. Bidders meeting the required criteria as stated in Section 2 and 3 of this document as well as the terms and conditions shall only be considered for Commercial Bid opening. Further, agencies not furnishing the documentary evidence as required will not be considered.
23. Following the opening of technical bid a presentation may be sought from the bidder.
24. During the warranty period, the bidder shall be fully responsible for the manufacturer's warranty in respect of proper design, quality, and workmanship of all the systems supplied. If there is any delay in replacement or rectification, the warranty period needs to be extended by a year and/or face a penalty equal to the valuation of the equipment.
25. During the warranty period, the bidder shall attend to all the hardware problems on site and shall replace the defective parts at no extra cost to the purchaser.
26. The Engineers of the parent manufacturer or bidding firm must install, demonstrate, and provide the training on laser ablation ICPMS for two days at IISc, Bangalore without additional cost.
27. The bids should be valid for at least 90 days from the last date of submission of the quotation.
28. The price should be quoted in INR only. The cost should be inclusive of delivery till the IISc campus. Price offer must be on FOR-IISc Bangalore basis. Please note that IISc being a DSIR recognized research institution under GST notification no. 47/2017 and the items under this procurement is required for research purposes only, is eligible for reduced GST (5%). Please also include any available educational discounts in the commercial bid. IISc may issue the GST Exemption Certificate upon a formal request from the vendor along with a copy of invoice.
29. The decision of the purchase committee will be final.
30. IISc, Bangalore reserves the right to accept or reject any bid and to annul the bidding process and reject all bids at any time to award of construct without thereby incurring any liability of the affected bidder or bidders.
31. Tender documents that do not satisfy the "Terms and Conditions" listed herein will be disqualified.
32. The tender documents should be sent to the following address no later than 25/11/2021 5:00 PM IST.

The Chairman (chair.ceas@iisc.ac.in)
Centre for Earth Sciences, Indian Institute of Science
C. V. Raman Road
Bangalore 560012
Karnataka, India.
Attn: Ramananda Chakrabarti