

Notice Inviting Tender

**SUPPLY, INSTALLATION, COMMISSIONING & TRAINING OF AN
QUADRUPOLE INDUCTIVELY COUPLED PLASMA MASS
SPECTROMETER AND AN OPTICAL EMISSION SPECTROMETER
FACILITY FOR DETERMINATION OF ELEMENTAL CONCENTRATION
AND ISOTOPE RATIO**

Tender No. CEAS/2019-20/SM/002



INDIAN INSTITUTE OF
SCIENCE

CEAS/2019-20/SM/002
Centre for Earth Sciences
Indian Institute of Science, Bangalore – 560012

2020

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SECTION 1 – BID SCHEDULE

1	Tender No	CEAS/2019-20/SM/002
2	Tender Date	10/02/2020
3	Item Description	Supply, Installation, Commissioning, and Training for an Quadrupole Inductively Coupled Plasma Mass Spectrometry and a Optical Emission Spectrometry Facility
4	Tender Type	Two Bid System a) Technical Bid (Part-A) b) Commercial Bid (Part-B)
5	Place of Submission and tender opening	To, The Chairman, Prof. Nagesh Kumar Centre for Earth Sciences, Indian Institute of Science, Bangalore – 560012, India
6	Last Date & Time for submission of tender	02/03/2020, 17:00 hrs (2 weeks from the day of floating of the tender)
7	Date of opening of technical bids	02/03/2020
8	For further clarifications	Dr. Sambuddha Misra Centre for Earth Sciences, Indian Institute of Science Bangalore- 560012, India Email: sambuddha@iisc.ac.in with copies to bsreeni@iisc.ac.in and chair.ceas@iisc.ac.in +91-80-2293 2027; +91-80-2293 3405

SECTION 2 – ELIGIBILITY CRITERIA

Prequalification criteria:

1. The Bidder's firm should have existence for a minimum of 3 years. (Enclose Company Registration Certificate)
2. The Bidder should have qualified technical service personnel for the instrument(s).
3. If the Bidder is a local distributor/dealer/Agent, it is mandatory to attach authorization certificate along with the bid from the original equipment manufacturer.
4. The bidder should sign and submit the declaration for Acceptance of Terms and Conditions as per -Annexure 4
5. The Bidder must not be blacklisted/banned/suspended or have a record of any service-related dispute with any organization in India or elsewhere. A declaration to this effect has to be given as per Annexure 3.

SECTION 3 – TERMS AND CONDITIONS

A) Submission of Tender:

1. All documentations in the tender should be in English.
2. Tender should be submitted in two envelopes (two bid system).
 - a. **Technical Bid (Part-A) –**
Technical bid consisting of all technical details, check list for conformance to specifications, format in which the price bid is quoted without the actual prices (suppliers who include any indication of prices in the technical bid will be automatically disqualified).
 - b. **Commercial Bid (Part-B) –**
Indicating item wise price for the items mentioned in the technical bid, as per the format of quotation provided in tender, and other commercial terms and conditions
3. The technical bid and price bid should each be placed in a sealed cover, superscripting on both the envelopes the tender no. and the due date and Both these sealed covers are to be placed in a bigger cover which should also be sealed and duly superscripted with the Tender No & Due Date.
4. The **SEALED COVER** superscripting tender number / due date & should reach The Chairman, Centre for Earth Sciences, Indian Institute of Science, Bangalore – 560012, India on or before due date mentioned in the tender notice. In case due date happens to be holiday the tender will be accepted and opened on the next working day.

If the quotation cover is not sealed, it will be rejected.

5. All communications are to be addressed to- The Chairman, Centre for Earth Sciences, Indian Institute of Science, Bangalore– 560012, India.
6. GST/other taxes, levies etc., are to be indicated separately. The **BIDDER** should mention GST Registration and PAN in the tender document (Indian Bidders only).
7. If price is not quoted in Commercial Bid as provided in tender document the bid is liable to be rejected.
8. The Institute reserves the right to accept or reject any bid and to annul the bidding process and reject all bids at any time prior to the award of contract, without there by incurring any liability to the affected bidder or bidders or any obligation to inform the affected bidder or bidders.
9. Incomplete bids will be summarily rejected.

B) Cancellation of Tender:

Notwithstanding anything specified in this tender document, IISc Bangalore, in its sole discretion, unconditionally and without having to assign any reason, reserves the rights:

- a.** To accept OR reject lowest tender or any other tender or all the tenders.
- b.** To accept any tender in full or in part.
- c.** To reject the tender, offer not confirming to the tender terms.

C) Validity of the Offer:

The offer shall be valid 90 Days from the date of opening of the commercial bid.

D) Evaluation of Offer:

- 1.** The technical bid (Part A) will be opened first and evaluated.
- 2.** Bidders meeting the required criteria as stated in Section 2 of this document shall only be considered for Commercial Bid (Part B) opening. Further, agencies not furnishing the documentary evidence as required will not be considered.
- 3.** Pre-qualification of the bidders shall not imply final acceptance of the Commercial Bid. The agency may be rejected at any point during technical evaluation or during commercial evaluation. The decision in regard to acceptance and / or rejection of any offer in part or full shall be the sole discretion of IISc Bangalore, and decision in this regard shall be binding on the bidders.
- 4.** The award of contract will be subject to acceptance of the terms and conditions stated in this tender.
- 5.** Any offer which deviates from the vital conditions (as illustrated below) of the tender is liable to be rejected:
 - a.** Non-submission of complete offers.
 - b.** Receipt of bids after due date and time and or by email / fax (unless specified otherwise).
 - c.** Receipt of bids in open conditions.
- 6.** In case any BIDDER is silent on any clauses mentioned in these tender documents, IISc Bangalore shall construe that the BIDDER had accepted the clauses as of the tender and no further claim will be entertained.
- 7.** No revision in the terms and conditions quoted in the offer will be entertained after the last date and time fixed for receipt of tenders.
- 8.** Lowest bid will be calculated based on the total price of all items tendered for Basic equipment along with accessories for installation, operation, pre- processing and post processing, optional items, recommended spares, warranty, annual maintenance contract

E) Pre-requisites:

The bidder will provide the prerequisite installation requirement of the equipment along with the technical bid.

F) Mode of Shipment:

In case of foreign bidders, the consignment must be airlifted, insured and transported to the Indian Institute of Science. Necessary custom clearance from Bangalore International Airport will be facilitated by IISc, Bangalore.

G) Customs clearance:

The IISc, Bangalore will furnish the necessary papers for the import of items into India, necessary custom duty exemption certificate and other supporting documents to facilitate the import of the items will be provided.

H) Warranty:

The complete system is to be under warranty / comprehensive maintenance package for minimum 5 years / 60 calendar months (year wise breakup value should be shown in the commercial bid) including free supply of consumables, spare parts and data analysis software from the date of functional installation. If the instrument is found to be defective, it has to be replaced or rectified at the cost of the bidder within 30 days from the date of receipt of written communications from IISc, Bangalore. If there is any delay in replacement or rectification, the warranty period should be correspondingly extended.

I) Annual Maintenance Contract:

Annual maintenance contract for a period of 5 years post warranty should be provided on completion of warranty period.

J) Purchase Order:

1. The order will be placed with the bidder whose bid is accepted by IISc - based on the terms & conditions mentioned in the tender document.
2. The quantity of the items in tender is only indicative. IISc, Bangalore reserves the right to increase /decrease the quantity of the items depending on the requirement.
3. If the quality of the product and service provided is not found satisfactory, IISc, Bangalore reserves the right to cancel or amend the contract.

K) Delivery and Installation:

The bidder shall provide the lead time to delivery, installation and made functional at IISc, Bangalore from the date of receipt of purchase order. The system should be delivered, installed and made functional within 90 days from the date of receipt of purchase order. The supply of the items will be considered as effected only on satisfactory installation and inspection of the system and inspection of all the items and features/capabilities tested by the IISc, Bangalore. After successful installation and inspection, the date of taking over of entire system by the IISc, Bangalore shall be taken as the start of the warranty period. No partial shipment is allowed.

- M) Payment Terms:**
The payment will be through a Letter of Credit and milestone of the payment will be determined after the mutual discussions with the successful bidder.
- N) Statutory Variation:**
Any statutory increase in the taxes and duties subsequent to bidder's offer, if it takes place within the original contractual delivery date, will be borne by IISc, Bangalore subject to the claim being supported by documentary evidence. However, if any decrease takes place the advantage will have to be passed on to IISc, Bangalore.
- O) Disputes and Jurisdiction:**
Any legal disputes arising out of any breach of contract pertaining to this tender shall be settled in the court of competent jurisdiction located within the city of Bangalore, India.
- P) General Requirements:**
1. A breakdown of costings for all items included in the specification;
 2. Details of third-party components included within the specifications which the Institute could purchase directly from manufactures (e.g. computer hardware, software and peripherals, vacuum system components);
 3. Details of warranty provisions.
 4. Details and costings of spares kit.
 5. Details of maintenance arrangements/agreements.
 6. Details of service engineer's call out charges (per day).
- Q) General:**
1. All amendments, time extension, clarifications etc., within the period of submission of the tender will be communicated electronically. No extension in the bid due date/time shall be considered on account of delay in receipt of any document(s) by mail.
 2. The bidder may furnish any additional information, which is necessary to establish capabilities to successfully complete the envisaged work. It is however, advised not to furnish superfluous information.
 3. The bidder may visit the installation site before submission of tender, with prior intimation.
 4. All imported equipment should be quoted in the currency of the country of origin, and all locally sourced items should be quoted in Indian Rupees.
 5. Any information furnished by the bidder found to be incorrect, either immediately or at a later date, would render the bidder liable to be debarred from tendering/taking up of work in IISc, Bangalore.

Section – 4 – Technical Specifications

Technical Specifications for procurement/installation of a Quadrupole based Inductively Coupled Plasma Mass Spectrometry Along with an Optical Emission Spectrometry facility at the Indian Institute of Sciences (IISc), Bangalore, India.

The Indian Institute of Sciences (IISc), Bangalore, India is a premier research institute carrying cutting edge research in the field of Sciences and Engineering. The institute is planning to set up a plasma-based quadrupole mass spectrometry facility to measure abundance and isotope ratio of multiple elements in natural, environmental, extra-terrestrial, and biological samples with high precision and accuracy. The Institute invites Sealed Tenders for the procurement, commissioning, standardization and calibration of the mass spectrometer(s) as per the technical specifications given below.

Please quote your specifications in the same order as per this document. A compliance statement must be submitted item-wise showing your compliance / deviations in clear terms. Hard and soft copies of the quote MUST be inserted along the documents.

The instrument(s) should be capable of measuring the abundance of select elements (as tabulated below) and with high precision and accuracy. The scientific interest of the Centre covers a wide range of elements in the field of Earth, Planetary, Ocean, and Biological Sciences. The utilization of the instrument will not be restricted to the measurement scheme below, but research and development of new concentration and isotope systematics, determination techniques, and analytical methodology. Bidders are requested to highlight additional features of their instrument that would enable the users at IISc to utilize the instrument to establish cutting-edge concentration determination methods. Following are some of the elemental systematics we intend to measure, both in solution and Laser Ablation mode. The quoted instrument(s) should have demonstrated ability to determine the abundance of these elements in natural samples from low parts per trillion (<10 ppt) to high parts per million (>100 ppm) range – either as a stand-alone instrument or as a combination of two instruments.

The elements of interest are: lithium, boron, sodium, magnesium, phosphorus, silica, sulfur, potassium, calcium, titanium, vanadium, chromium, manganese, iron, cobalt, nickel, zinc, copper, cadmium, molybdenum, strontium, arsenic, selenium, antimony, barium, Rare Earth Elements (light and Heavy), mercury, and lead.

SECTION – A: MAIN INSTRUMENT(S)

A. Description for Instrument(s) Capable of Elemental Isotope Ratio and abundance of elements with high precision and accuracy:

This specification describes any inductively coupled plasma mass spectrometer that is equipped with THREE QUADRUPOLES and is capable of measuring the abundance and / or isotopic ratios of multiple elements in solid and liquid samples.

I. QQQ-ICP-MS unit

Mass Analyzers (applicable primarily for concentration and isotope ratio determination)

<p>A. Sample introduction system</p>	<ol style="list-style-type: none"> 1. The sample introduction system should have significantly low dead volume (quick washout) with option for low uptake rate (100 micro-l/min or lower) sample introduction. 2. The sample introduction system, torch, lenses, and cones should be easily accessible for maintenance 3. Quartz demountable torch with the option of quartz, sapphire and / or platinum injector should be available 4. System should be provided with Peltier-cooled spray chamber, which can operate over a temperature range of -5°C to + 20°C or higher. 5. System should have demonstrated ability of analyzing samples of high total dissolved solid (TDS) concentration (approximately 10% TDS or more). 6. There should be computer-controlled precise torch movement in X-Y-Z directions
<p>B. Ion Source and RF Plasma</p>	<ol style="list-style-type: none"> 1. The ICPMS must have computer-controlled RF generator operating at 27 MHz 2. There should be demonstrated ability of instrument operation over the range of forward plasma power of 600W to 1500W for periods ≥ 18 hrs at a stretch. 3. The RF Generator & Coil should preferably be water cooled
<p>C. Ion Extraction / Plasma Interface</p>	<ol style="list-style-type: none"> 1. The instrument should have water-cooled plasma-interface that is maintained under high vacuum and is equipped with standard and high-performance Nickel and / or Platinum based sample and skimmer cones to suit multiple applications. 2. The cones/interface should be easily demountable with automated / computer-controlled torch movement in X-Y-Z directions, and to allow for easily cleaning and replacement. 3. Lens /cones system should be outside the vacuum system to reduced down time
<p>Ion focusing system</p>	<ol style="list-style-type: none"> 1. Off - Axis ion focusing system capable of removing all neutrals & photons from the ion path with minimal physical damage to the optics.
<p>Quadrupole system</p>	<ol style="list-style-type: none"> 1. The mass spectrometer should have true hyperbolic profile rods for best ion transmission and resolution tuning. 2. The system should include in tandem quadrupole system. 3. Preference would be given to a triple quadrupole / mass filter arrangement of one quadrupole before the collision/reaction cell and the second one after the CRC. 4. The first Quadrupole must have unit mass filtering capability.

Ion Detector	1. Standard SEM type detector with detection ability in both analogue and digital mode with detection ability over > 10 orders of magnitude
Performance	<p>1. The instrument should have mass Sensitivity (Mcps/ppm) as follows:</p> <ul style="list-style-type: none"> • Li (7) > 100 • Y (89) > 400 • Tl (205) > 250 <p>2. Elemental Detection Limit (pptr)</p> <ul style="list-style-type: none"> • Be: 0.1 pptr • In: 0.05 pptr • U: 0.05 pptr <p>3. Oxide ratio of CeO/Ce: $\leq 2\%$</p> <p>4. Background (electronic noise): ≤ 0.5 cps @ masses 9 and 238 (amu)</p> <p>5. Abundance sensitivity of ^{133}Cs: 1×10^{-10} (L, H) or better</p>
Cell Technology	<p>1. System should have a collision and reaction cell to remove polyatomic & isobaric interferences.</p> <p>2. There should be separate gas lines and mass flow controllers for the collision & reaction gases. The gas flows should be controllable by instrument software.</p> <p>3. Collision / reaction cell should have separate gas lines for He, H₂, NH₃, O₂ and/or other gases like: CH₄, C₂H₂, C₂H₆, C₃H₄, C₃H₈, CH₃F etc.</p>
Quadrupole analyzer	<p>1. The mass range should be from 3 to 275 amu or more</p> <p>2. The dwell time should be as short as 100 usec for fastest settling</p> <p>3. Scan speed should be >3000 amu/s</p> <p>4. The analyzer must have the ability to discretely control the resolution of selected mass regions dynamically without affecting the overall nominal resolution of the system.</p>
Ion detector	1. The ion detector must be discrete dynode electron multiplier with analogue and digital mode of operation. It should be capable of having 10 to 11 orders of linear dynamic range.

Vacuum system	<p>1. The instrument should be provided with high capacity roughing pump and specific Turbo Pumps</p> <p>2. There should be provision for automated vacuum reading at the low and high vacuum ends of the mass spectrometer.</p>
Computer and Software	<p>I. Operating Computer: The instrument(s) should come with dedicated computer system(s) with the latest configuration, and a secondary hard-drive which is integrated in the CPU and duplicates the operation hard-drive in real time. The computer system should be supplied with a twin monitor (21" LED screen each).</p> <p>II. Printer: A laser color printer should be supplied.</p> <p>III. Software: The operational software should be capable fully integrated operation of the mass spectrometer and the sample introduction systems. It should also support other peripheral systems (such as third-party laser ablation, peri-pumps, and auto sampler). Software upgrades should be supported for at least for 10 years at no additional cost.</p>

Installation Accessories	<ol style="list-style-type: none"> 1. ICPMS tuning solutions 2. Required exhaust system for the ICPMS. 3. Manifold and Regulators for the following Gases: Ar, He, H₂, O₂, NH₃ 4. Certified multi-element standards for major and trace elements in water
Training/Application Support	<ol style="list-style-type: none"> 1. Training on routine operation, maintenance and applications to be done at site

II. ICP- Optical Emission Spectrometer System: The instrument must be a polychromator based simultaneous reading ICP-OES that utilizes solid-state detector technology.

Optics: The ICP-OES’s optical configuration should include Echelle-based polychromator with a focal length of 400 mm or more, should utilize a single solid-state detector, and a single entrance slit to the optics. The resolution of the system must be 0.007 nm or better at around 200 nm. **The entire optical system must be enclosed in a purged and thermostatic optical enclosure. The system must cover wavelength range of 167 to 780 nm or more, and the detector must have anti-blooming protection on each pixel.** An optical purge system in the polychromator must be standard. Either argon or nitrogen may be used as purge gases and the gas flows must be controlled by automated MFC.

ICP SYSTEM: The inductively coupled plasma must be vertically mounted with ‘dual view’ facility to view the plasma axially and radially both.

SYSTEM DETECTOR: The instrument should preferably utilize a single focal plane CCD detector that is optimized for performance across the entire emission spectrum. The instrument should be capable of reading all emission wavelengths simultaneously. **Each detector pixel must have antiblooming protection to enable the simultaneous measurement of trace level analytes in the presence of major matrix constituents.** The detector must be cooled by a Peltier device to minimize detector dark current thereby enhancing instrument performance and detection limits. The detector must be hermetically sealed and require no gas consumption for detector purging.

RF GENERATOR: The RF generator must be a solid state one and should have an optimal power output range of 700 - 1500 watts.

GAS FLOW CONTROLS: All plasma related gas flows should have separate Mass Flow Controllers on them, including plasma, auxiliary and nebulizer gas. It should also have two additional MFCs for option and make up gas.

SAMPLE INTRODUCTION SYSTEM: The instrument should preferably include a double pass glass cyclonic spray chamber and a glass concentric nebulizer. Option for inert sample intro system for handling aggressive acid like HF must be available. The system must include four or more channels, variable speed, computer controlled peristaltic pump as standard which allows for on-line addition of internal standards and online vapor generation mode of operation.

Operating Computer: The instrument(s) should come with a dedicated computer system with the latest available configuration, and a secondary hard-drive, is integrated in the CPU, that duplicates the operation hard-drive in real time, wireless network cards. The computer system should be supplied with a twin monitor (21” LED screen each). II. Printer: A laser color printer with USB as well as ethernet connectivity; Automatic Duplex printing (both side printing); 1200 X 1200 print quality or better should be supplied. III. Software: The operational software should be capable fully integrated operation of the mass spectrometer and the sample inlet systems. It should also support other peripheral systems (such as third-party laser ablation, peri-pumps, and auto-sampler). The instrument must be able to read both background and emission data simultaneously and allow for manual or automatic background correction.

AUTO SAMPLER: A compact auto sampler with small footprint, short sample path (essential for smaller sample size) and a protective cover to prevent sample contamination. It should have dual flowing rinse stations, which can operate in gas displacement or peristaltic-pump mode. It should have at least 48 sample holders and should be compatible with sample volumes as low as 500µL and up to 22ml. Other options of sample rack configuration, if any, should be quoted separately. The operational voltage should be 240VAC (50Hz). It should be compatible and integrated with instrument software.

Installation, Accessories/Supplies	<ul style="list-style-type: none"> • ICP-OES tuning solutions • Required exhaust system. • Gas Cylinders and Regulators for Ar • NIST traceable Multi-element standards including REEs
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Training/Application Support	Training on routine operation, maintenance and applications to be imparted at site
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II. INSTRUMENT PERFORMANCE GUARANTEE

The quotation MUST include full performance figures of merit of the instrument, including sensitivity, detection limit, accuracy and precision for short- and long-term analyses of standard solutions of Li, B, V, Cr, Fe, As, Se, Sr, Pb, and U. Following are a select few performance guidelines that the supplier must guarantee to demonstrate on the proposed machine.

- (A) The sensitivity, detection limit, accuracy, and precision, determined on standards recognized by the geochemical community / high purity ICP-MS concentration standards at concentrations (i) ≤ 1 ppb and (ii) ≥ 10 ppm for the following elements: Li, B, V, Cr, Fe, As, Se, Sr, Pb, and U.
- (B) Demonstrated ability to determine Li, B, Mg, Sr, and U to Ca ratio in natural carbonates. Preference will be given to instrument with peer reviewed publication on metal to calcium ratio determination in natural carbonates.
- (C) Internal Precision (2σ) of isotope ratio determination of Cu, Ag, and Pb on any high purity mono-elemental solution at approximately 10 ng mass consumption or less per analysis.
- (D) The tender should include the best sensitivity, detection limit, internal precision (2σ), and external precision (2σ) for the elements listed below in the format tabulated below from any representative instrument. The values for the parameter can be quoted from published results in any recognized peer reviewed journal or from a factory instrument with an undertaking from the company. For reporting of the sensitivity, the exact sample introduction setup should be mentioned, and for internal- and external precision the exact number of ratios determined (cycle / block) and the number analyses averaged (n) should be quoted. The total mass of analyte consumed per analyses and detector / amplifier utilized must be mentioned.

Elements of key Interest: lithium, boron, magnesium, phosphorus, silica, sulfur, potassium, calcium, titanium, vanadium, chromium, manganese, iron, cobalt, nickel, zinc, copper, cadmium, molybdenum, arsenic, selenium, antimony, barium, Rare Earth Elements (light and Heavy), mercury, and lead. Demonstrated ability to resolve plasma-based interferences, through utilization of physical or chemical mass resolution, should be part of the performance report.

Element and Isotope	Matrix (Solution / Solid)	Front-end Configuration (Nebulizer aspiration rate / type of spray chamber)	Sensitivity (V/ppm)	Detection Limit (ppt)	Mass of Analyte Consumed (ng)	Internal Precision (2σ)	External Precision (2σ)

(E) Instrument Performance:

- I Quotation should include full specification of mass spectrometer performance, including both internal and external precision in measurement for most of the elemental systems mentioned above. The service engineer should carry out various performance parameters of the instrument(s) according to those mentioned in the brochure and/or quoted in the technical bid submitted by the vendor, whichever is better both at factory before delivery and at IISc after delivery. Towards this the supplier should provide test certificates.
- II Quotation to include clear, unambiguous statements of expected routine performance of the various preparation systems in combination with the mass spectrometers. It should state the overall precisions derived from analyses of multiple replicate samples of standard materials, with a clear indication of any effects in relation to sample size.

SECTION –B: ACCESSORIES AND SPARES

The offer should include all of the required accessories/ spares/ consumables for seamless performance of the system and its peripherals. A list of spares and consumables should be provided.

- a. The offer should also include following essential accessories and quoted preferably in Indian rupees.
- b. A 25 KVA 3-phase UPS (only from reputed brands/ manufacturers) that has an inbuilt Isolation Transformer and is capable of one hour of back up time with power output quality as per instrument's requirements should also be quoted separately. This UPS will be tested by the ICP-MS manufacturer for electronic noise and other key performance parameters.

SECTION C: ADDITIONAL GENERAL REQUIREMENTS

- a. List of all installations in India with contact details of scientist / individual in-charge.
- b. The technical specifications listed above are a minimum indicative. The ease of operation and maintenance, the ability to integrate latest technology, and after sales service facilities are some of the key factors in the evaluation process.
- c. The details, credentials, and experience of individuals who are factory trained service engineers of the quoted model of mass spectrometer and is currently on roll in India or at the nearest service hub should be submitted with the offered quotation.
- d. Quotation should include all cost including logistics required to complete the installation at IISc.
- e. The Vendor should certify and confirm availability of spares, service support and, both hardware and software upgradation for at least 10 years from the year of installation.
- f. Any equipment of component procured locally and supplied with the instrument should be quoted in Indian Rupees.
- g. List of select user laboratories of an instrument of similar configuration and scientific application must be provided with the contact details (e-mail) of the person-in-charge of the instrument, model and date of installation.
- h. IISc may opt for demonstration of any technical specifications and performance of the quoted model, at any available user site in India or at the factory / preferred demonstration site for the company, as a part of technical evaluation.

SECTION D: Training

- I. After the successful installation of the mass spectrometer and its peripherals, selected personnel from IISc should be provided with hands-on and in-depth training on the operation, maintenance and application of the instrument by factory engineer. The cost of an on-site training session should be part of the quotation.

SECTION E: Warranty (to be quoted as a separate item)

Supplier should provide comprehensive onsite warranty (including parts and labour) for a minimum of 5 years (60 months), to be executed in a 1 yr (manufacturer warranty) + 4 yr (extended warranty) fashion, including all locally supplied items after successful installation of the system. The supplier should also quote for annual service maintenance contract (breakdown visits and two preventative service visits) for the next five years after the warranty period.

SECTION F: Pre-installation

Guideline

A comprehensive guideline/list of requirements for site preparation, installation of pre-installation infrastructure with their specifications is to be provided by the manufacturer.

Installation:

The complete installation of the supplied INSTRUMENT system should be carried out by the factory engineer. All the expenses including travel, accommodation etc. towards this should be included in the quote.

It is the responsibility of the vendor to ensure that all of the required accessories and ancillary items are included in the quotation for carrying out the installation, standardization, optimization and calibration of the instrument. The supplied system should be complete in itself in all respect to take up the sample analysis at the IISc premises.

Bidding Format:

Sr. No.	Technical Compliance Statement for Multi Collector Inductively Coupled Plasma Mass Spectrometer (MC-ICP-MS) System.	Complied/ Not Complied	Extra Features
	<p><u>PLEASE QUOTE THE SPECIFICATIONS IN THE ORDER OUTLINED IN THIS DOCUMENT ABOVE.</u></p> <p><u>A COMPLIANCE STATEMENT MUST BE SUBMITTED IN AN ITEM-WISE FASHION AND DEMONSTRATING THE COMPLIANCE / DEVIATIONS IN CLEAR TERMS.</u></p> <p><u>Hard and soft copies of the quote MUST be inserted along the documents.</u></p>		

The table heads should be listed according to and in order of the criteria listed in pages 9 onwards. For example:

	<p>SECTION – A: MAIN INSTRUMENT (INSTRUMENT) Demonstrated ability, based of published results and / or performance of an installed instrument (with certification of undertaking) of the best precision achieved for the elements listed in the table in page 9. Mass consumption for each analysis should be mentioned.</p>		
	<p>I. <u>INSTRUMENT unit</u> (1) Sample introduction system for solution mode</p>		
	<p>1.1 Peristaltic pump:</p>		
	<p>1.2 Nebulizers and spray chambers:</p>		
	<p>(a) Self aspirating PFA nebulizers with provision for sample flow rates of 35, 50, 100 and 200 microliters/minute with and without PEEK/Teflon reinforced sample uptake tube.</p>		

Section 5: Technical Bid

The technical bid should include all requirements of the tender along with all annexures, and should be submitted to:

The Chairman, Prof. Binod Sreenivasan
Centre for Earth Sciences,
Indian Institute of Science,
Bangalore – 560012, India

Annexure-1:

Details of the Bidder

The bidder must provide the following mandatory information & attach supporting documents wherever mentioned:

Details of the Bidder		
Sl No	Name of the Bidder	
1	Nature of Bidder (Attach attested copy of Certificate of Incorporation/ Partnership Deed)	
2	Registration No/ Trade License, (attach attested copy)	
3	Registered Office Address	
4	Address for communication	
5	Contact person- Name and Designation	
6	Telephone No	
7	Email ID	
	Website	
8	PAN No. (attach copy)	
9	GST No. (attach copy)	

Signature of the Bidder

Name
Designation, Seal

Date:

Annexure-2:

Declaration regarding experience To,
The Chairman, Prof. Binod Sreenivasan
Centre for Earth Sciences,
Indian Institute of Science,
Bangalore – 560012, India

Ref: Tender No: CEAS/2019-20/SM/002
Dated: 10/02/20

Subject: Supply, installation, and training of an Inductively Coupled Plasma Mass Spectrometry Facility
at the Centre for Earth Sciences, IISc

Sir,

I've carefully gone through the Terms & Conditions contained in the above referred tender. I hereby declare that my company / firm has ---- years of experience in supplying and installing Inductively Coupled Plasma Mass Spectrometers.

(Signature of the Bidder)
Printed Name

Designation, Seal

Date:

Annexure-3:

**Declaration regarding track record To,
The Chairman, Prof. Binod Sreenivasan
Centre for Earth Sciences,
Indian Institute of Science,
Bangalore – 560012, India**

Ref: Tender No: CEAS/2019-20/SM/002

Dated: 10/02/20

**Subject: Supply, installation, and training of an Inductively Coupled Plasma Mass Spectrometer Facility
at the Centre for Earth Sciences, IISc**

Sir,

I've carefully gone through the Terms & Conditions contained in the above tender (Ref: Tender No. CEAS/2019-20/SM/002). I hereby declare that my company/ firm is not currently debarred / blacklisted by any Government / Semi Government organizations / institutions in India or abroad. I further certify that I'm competent officer in my company / firm to make this declaration.

Or

I declare the following

Sl.No.	Country in which the company is Debarred /blacklisted / case is Pending	Blacklisted / debarred by Government / Semi Government/Organizations /Institutions	Reason	Since when and for how long
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(NOTE: In case the company / firm was blacklisted previously, please provide the details regarding period for which the company / firm was blacklisted and the reason/s for the same).

Yours faithfully

(Signature of the Bidder)

Name

Designation, Seal

Date:

Annexure – 4:

Declaration for acceptance of terms and conditions To,
The Chairman, Prof. Binod Sreenivasan
Centre for Earth Sciences,
Indian Institute of Science,
Bangalore – 560012, India

Ref: Tender No: CEAS/2019-20/SM/002
Dated: 10/02/20

Subject: Supply, installation, and training of an Inductively Coupled Plasma Mass Spectrometer Facility
at the Centre for Earth Sciences, IISc

Sir,

I've carefully gone through the Terms & Conditions as mentioned in the above-referred tender document. I declare that all the provisions of this tender document are acceptable to my company. I further certify that I'm an authorized signatory of my company and am, therefore, competent to make this declaration.

Yours faithfully,

(Signature of the Bidder)

Name

Designation, Seal

Date:

Annexure – 5:

Details of items quoted:

Company Name	
Product Name	
Part / Catalogue number	
Product description / main features	
Detailed technical specifications	
Remarks	

Instructions to bidders:

- 1. Bidder should provide technical specifications of the quoted product/s in detail.**
- 2. Bidder should attach product brochures along with technical bid.**
- 3. Bidders should clearly indicate compliance or non-compliance of the technical specifications provided in the tender document.**

Section 6: COMMERCIAL BID

The commercial bid should be furnished with all requirements of the tender with supporting documents as mentioned under:

Sl No	Description	Catalogue Number	Quantity	Unit Price	Sub Total
1	Instrument price				
2	Accessories for operation and installation				
3	All Consumables, spares and software to be supplied locally				
4	Warranty (min 5 years)				
5	Cost of Insurance and Airfreight				
6	CIP/CIF IISc, Bengaluru				

Sl No	Description	Quantity	Unit Price	GST	Total

Addressed to:

The Chairman, Prof. Binod Sreenivasan
Centre for Earth Sciences,
Indian Institute of Science,
Bangalore – 560012, India

SECTION 7 – CHECK LIST

(This should be enclosed with technical bid- Part A)

The following items must be checked before the Bid is submitted:

1. Envelope “A”: Technical Bid

a) Section 5- Technical Bid (each page signed by the authorized signatory and sealed) with the below annexures:

Annexure 1: Bidders details

Annexure 2: Declaration regarding experience

Annexure 3: Declaration regarding clean track record

Annexure 4: Declaration for acceptance of terms and conditions

Annexure 5: Details of items quoted

b) Copy of this tender document duly signed by the authorized signatory on every page and sealed.

2. Envelop “B”: Commercial Bid

Section 6: Commercial Bid

The quotations must be submitted in two separate sealed envelopes: Technical Bid (Envelope A) and Commercial Bid (Envelope B) super scribing on both the envelopes with Tender No. and due date and both of these in sealed covers and put in a bigger cover which should also be sealed and duly super scribed with Tender No. & Due Date.

