INDIAN ASSOCIATION FOR THE CULTIVATION OF SCIENCE

2A & 2B, Raja S.C. Mullick Road, Jadavpur, Kolkata-700032

FORMAT OF TENDER

NIT No.:IACS-G/CSSJG/2025-26/59 **Date:13.02.2025**

Sealed tender in two bids system (technical bid and price bid) is invited from bonafide, resourceful and eligible manufacturer/exclusive distributor/vendors for **Technical Specifications of a High-Resolution Mass Spectrometer (HRMS)**

Part-I (Technical Bid) of the tender should contain technical specifications in detail as well as commercial terms and conditions. Part-II (Price Bid) should clearly indicate group-wise price, if needed, as mentioned in the technical bid. The Technical Bid and Price Bid are to be submitted in separately sealed envelopes, distinctly marked accordingly and both to be put inside another envelop, that should be sealed and superscribed with tender notice no. and due date. The bidders may submit bids duly signed in their own letterheads.

Completed tender bids should reach the office of **School of Chemical Sciences, Indian Association for the Cultivation of Science (IACS), 2A & 2B Raja S. C. Mullick Road, Jadavpur, Kolkata-700032** on or before the scheduled date and time specified below:

Tender Notice No.	**NIT No. : IACS-G/CSSJG/2025-26/59** **Date: 13.02.2025**
Last date and time of submitting tender	09.03. 2026 at 12.00 P.M.
Date, time and venue of Pre-bid meeting to discuss technical specification*	23.02. 2026 at 3.00 P.M. Room No M142, IACS
Date, time and venue of opening technical bid of the tender	10.03.2026 at 3.00 P.M. Room No M142, IACS
Date, time and venue of opening the price bid of the tender	Date and time will be intimated to the technically qualified bidders at their e-mail address
Contact	Email: ocjg@iacs.res.in Tel. +91-33-2473 4971 (Extn. 1426)

*If you wish to participate in the online Pre-bid meeting, please write a mail to the email account (ocjg@iacs.res.in) on behalf of your company so that the required link can be sent prior to the online meeting.

The technical bids will be opened first to judge/evaluate the technical specifications of the said instrument and thereafter the price bids of only technically qualified bidders will be opened.

Technical Bid Evaluation: The Technical Bids will be evaluated in the presence of the authorized representatives of intending bidders who will be able to clarify technical aspects of their bids, if any, required by the Technical Evaluation Team.

Opening of price-bid: The Price Bids of the bidders qualifying the technical bid will only be opened, the date of which will be intimated to the short-listed bidders at their email addresses. The rest of the bids will be rejected.

Please note that IACS will not provide any accommodation or reimburse any expenses to any of the bidders for attending opening of technical bid/price bid.

1. TECHNICAL BID

The technical bid should contain technical specifications and should be kept in a separate sealed envelope duly super scribed as 'TECHNICAL BID' on the outer cover of the envelop as already detailed above. It should be clearly mentioned on the envelope as " *Technical Specifications of a High-Resolution Mass Spectrometer (HRMS)*".

Technical Specifications of a High-Resolution Mass Spectrometer (HRMS)

Technical Specification for ESI High Resolution Mass Spectrometer with Ultra High-Performance Liquid Chromatography System with facility to use sub 2 µm particle size columns for both qualitative and quantitative analysis. **A Bidder must be a single manufacturer of the entire instrument & shall be responsible for the entire instrument and all the accessories supplied with the system. The instrument must be fully automated with automatic calibration & tuning along with all system checks so that no manual intervention is required.**	
Technical specification	
Ionization Source:	**A.** The instrument must be equipped with combined Multi-Mode/dual electrospray ionization (ESI) and atmospheric pressure chemical ionization (APCI) as standard along with the APCI probe capable of handling flow rates up to 2 ml/min or higher. **B.** Sample introduction must be possible directly with integrated system fluidics without any external assembly or syringe pump outside the system in case of direct infusion of the samples & also through a combination with suitable Ultra High liquid chromatographic system. **C.** It must provide a calibrant delivery system with Automated Mass Calibration to ensure the performance is accessible to both experts and non-experts. The instrument should be capable of internal reference mass correction for MS and MS/MS operation without losing sensitivity. **D.** The ionization must be done both in positive & negative mode. An atmospheric pressure solids analysis probe for the direct sampling and introduction of solids and liquids should be available as an additional source. **E.** The ion source must be of Dual Orthogonal Off Axis or better for maximizing sensitivity while maintaining system robustness. A suitable technology or device must be available to allow the source elements & the Neutral molecules and gas load to be actively exhausted for getting higher sensitivity in the system. **F.** The cleaning of the source should be done without venting the system and a facility for Vacuum Interlock should be provided. The Vacuum must remain intact during the cleaning, Source interchange or Servicing of the system with some isolation in the system. Vendors must ensure the same in writing.
Desolvation Temperature	• The upper limit of the desolvation temperature must be more than 600 degree C, which should be programmable and can be used in all different probe usages including combined / dual / ESI & APCI or the solid probe for every solvents & compounds.
Quadrupole:	**A.** Instrument must have Quadrupole for isolation followed by collision cell and appropriate assembly

	required for high resolution mass data. Precursor ion selection should be done using Quadrupole. **B.** Mass Range: The instrument must have a high mass filter (quadrupole) for efficient transmission of ions having mass range at least ≤ 20 to ≥ 15,000 m/z or higher. The calibration must be possible for the entire mass range.
Time of Flight (TOF) or other equivalent mass analyzer	**A.** Analyzer: Geometry with quadrupole followed by TOF or equivalent Mass Analyzer with a collision cell in between should be present for HRMS. **B.** The mass range of the Mass Analyzer ToF or Equivalent must be at least ≤20 to ≥80,000 m/z or higher. The mass analyzer must have linearity of response of Minimum 4 orders or better of magnitude whilst maintaining specified resolution for quantitation purposes.
Resolution	**A.** The resolution of the TOF or equivalent Mass Analyzer must be 40,000 FWHM or higher at around m/z 1000 and 35,000 FWHM or higher at around 200 m/z. (Proof of Statement must be provided) **B.** Data acquisition rate must be 30 Spectra per second or better in MS and MS/MS mode independent of any conditions. (Proof of Statement must be provided)
Mass Accuracy & Sensitivity	**A.** The mass accuracy of the system should be a minimum of less than 0.5 - 1 ppm, for both MS & MS/MS modes on 10 consecutive repeat measurements on column analysis. (Proof of statement must be provided) The instrument must be sensitive enough for detecting sub ppb/femtomole levels of compounds. **B.** Sensitivity: Full MS mode ≤ 100 femtogram/femtomole or better on column, at S/N ratio ≥ 1500:1 or higher and MS/MS mode 100 femtogram/femtomole or better on column at S/N ratio more than > 3000:1 or higher (Proof of statement must be provided for S/N ratio)
Scan modes & Capability	The instrument must be able to operate in Full Spectrum MS, MS/MS product ion scanning, simultaneous MS and MS/MS scanning, UHPLC/Fast DDA Scan, UHPLC – MS^E/MS^N, Mass Analyzer (TOF or equivalent) Multiple Reaction Monitoring, Precursor Ion Scan. The software should be capable of data acquisitions whereby high and low collision energy data is acquired simultaneously to provide fragmentation data for all detectable molecular ions and Multiple Reaction Monitoring.
Vacuum System	A high efficiency vacuum system with turbo pumps & rotary pumps or equivalent must be provided for making the instrument sensitive enough.
Software	The software should have capabilities to perform the following functions: • Automated mass calibration, resolution, sensitivity check should be performed by software. • Software tools for addressing Screening, Component Identification workflows, Quantification, Deconvolution etc. must be provided. The software must incorporate an elemental composition calculator as standard. Included in the calculator must be algorithms for isotope pattern modeling that allow data interpretation of actual isotope patterns. A goodness of fit from actual to theoretical isotopes must be included. • The Software must have increased selectivity with rapid scan rates of around 200 spectra or higher which should translate to cleaner MS/MS data and must allow both discovery and quantification from a single injection using commonly accepted and established workflows. The results must be right the first time, giving improved data quality through high selectivity and more reliable database searches. • The ability to filter out incorrect elemental composition calculations using intelligent spectral interpretation algorithms must be incorporated. Software should give elemental formula with mass accuracy or ppm error and isotopic fit value. • The model offered by the vendor should have the capability to demonstrate the above-mentioned parameters like fast LC, high resolution, high mass accuracy in one single run along with comprehensive accurate mass precursor and fragment ion information from a single analysis. The Software must be perpetual in nature.
Instrument & Software IQ/OQ	The instrument must be Qualified/validated along with the Software. Necessary reagents along with Documents must be provided for valid Instrument Qualification, Operational & Performance Qualification

& Certification	of the instrument along with Specification check during the installation. The vendors must quote the Qualification kits with defined list of items along with valid Cat. No./Cas No/Product ID etc.
Computer workstation	Workstation should be provided for controlling the mass spectrometer, the UHPLC with data acquisition & data processing analysis as per the following specifications: • Memory / RAM: Minimum 64 GB or higher, Hard drives: 512 GB SSD & 10 TB SATA HDD or higher • CPU: Dual-Processor; Operating system: Windows 11, 64 - bit or latest at the time of supply. • 27-inch LCD monitor, Laser jet Printer. • All hardware and software including drivers, monitor, device interfaces cards / network must be preinstalled and preconfigured on the computer provided along with Microsoft office of latest version.
Nitrogen Generator	A noise free Nitrogen Gas Generator with in-built compressor having max pressure 100 psi & flow rate >30 liters/min must be supplied along with other auxiliary Gas cylinders which should be provided to operate the system.
UPS	The vendor must provide 10 KVA online UPS with a minimum 60 mins backup with the system.
UHPLC SYSTEM: An Ultra High Performance Liquid Chromatography system as an inlet to the Mass Spectrometer with the following specifications must be provided.	
Pump	• Quaternary operating pump with an operating pressure of minimum 15000 psi or better having automatic purging of pumps controlled by software. • The flow rate range should be 0.010 to 2.000 mL/min or better, in 0.001 ml increments, Flow rate accuracy: ±0.1 % & Flow Rate Precision: ≤ 0.075% Relative Standard Deviation or better. • Solvent Blending must be Fully Automatic & must program gradient methods directly in terms of pH and percent organic, pH and salt concentration, pH and ionic strength to minimize manual mobile phase preparation and reduce potential for human error in routine analysis.
Degasser	The instrument should have an in-built Vacuum degasser facility with minimum four lines and should be efficient to remove dissolved air online.
Gradient Delay Volume	It should be less than 400 microlitre or better, independent of system backpressure along with Gradient Delay Volume of Less than 300 microlitre or better. The Total Bandspread should be less than 12 microlitre or better.
Autosampler	• Autosampler should be available with a capacity of approx. 90 vials or more of 1.5/2 ml. The autosampler should have a cooling facility up to 4 degrees or better and heating up to 40 degrees or better. • Programmable injection volume from 0.1 ul to 10 ul or better must be available with Integral, Active & Programmable needle wash. It must have advanced features like Auto-Dilution, Auto-Addition & Load Ahead capabilities. • The carryover of the autosampler must be less than 0.002% or better. Compressibility Compensation for the Solvents should be Automatic & Continuous.
Column Oven	Column Temperature Control should be from ambient to ≥ 90 deg. C or better with a Temperature control from ambient to maximum operating temperature. Temperature control precision should be 0.1^0C.
Columns & Accessories	• C18 Hybrid Column with 1.7µm, 2.1 X 100 MM – 2 No. with a pH level of 2 – 12. • High Strength T3 Column for polar & non-polar 1.7 µm, 2.1 X 100 MM – 1 No. with a pH level of 2 – 12. • LCMS Certified Clear Glass 12 X 32 Screw Cap PTFE Vials 2ML 2000 No's. • Column usage history tracking technology must be associated with the column so that all the information related to number of injections, solvent consumption, Temperature, Pressure etc. should be available electronically & archive all of them to acquire the data & must help to create a paperless laboratory.
Warranty	The warranty for the Entire instrument including Nitrogen Generator and UPS must be 5 years comprehensive and except consumables /Perishables like UHPLC Columns, Local Accessories consumables

	like UPS Battery, Consumables of Computer and Printer, Gases etc. The Vendor must point out the consumable items where the warranty is not covering.
Others	**A.** The system must be attended within 48 hrs of reporting. The other auxiliary gases along with regulators should also be supplied along with the system. **B.** Training and Installation: Installation must be done at the user's site with no extra costs involved. A two week (at least) general entry- level training-cum- workshop and advanced- level training- cum-workshop must be arranged at the user's site by the vendor on experimental and data analysis part, with no extra cost involved. **C.** Proof of Performance documents must be provided with the Compliance sheet. The vendors must submit/upload all the Technical Data Sheets as per their claim in original & authenticated. Standards/reagents & MS Grade Solvents required for successful installation must be supplied. **D.** The bidder must submit at least 10 or more, latest customer details / PO copies / references of the same Quoted / similar model supplied in India within last 5 years along with the Service Support details which must be present in Eastern India with Certified LCMSMS/QTOF/HRMS Service Engineers details, Address in Eastern India, along with email id's.

ELIGIBILITY CRITERIA:

Past performance

The bidder or its OEM (Original Equipment Manufacturer) should have supplied same or similar category products for 50% of bid quantity, in at least one of the last there financial years before the bid opening date to any Central/Sate Govt. organization/PSU/Autonomous body. Copies of relevant contacts to be submitted along with Bid in support of quantity supplied in the relevant financial year. Users lists of similar equipment supplied in India should be provided (Enclose full list of the users in India). Vendor should have at least one (1) user available in the eastern zone of India.

Minimum Average Annual Financial Turnover:

The minimum average annual financial turnover of the bidder during the las t three years ending 31st March of the previous financial year should be Rs. 43 Lakh. Documentary evidence in the form of certified audited Balance Sheets of relevant periods on a certificate from the Chattered Accountant/Cost Accountant indicating the turnover details for the relevant periods shall be submitted with the bid.

Warranty: The warranty for the Entire instrument including Nitrogen Generator and UPS must be 5 years comprehensive from the date of installation and successful commissioning and except consumables /Perishables like UHPLC Columns, Local Accessories consumables like UPS Battery, Consumables of Computer and Printer, Gases etc. The Vendor must point out the consumable items where the warranty is not covering.

Technical compliance chart should be provided in the following format,

Sr. No	Tender specification	Your offered instrument specification	Extent of compliance

Proof of Performance documents must be provided with the Compliance sheet. The vendors must submit/upload all the Technical Data Sheets as per their claim in original & authenticated. The specification sheets should also be available in the public portal.

Tender will not be accepted if the technical compliance chart is not provided following the above format.

2. PRICE BID

The financial bid indicating (item-wise, if required) price for the item(s) mentioned in the technical bid should be kept in a separate sealed envelope duly superscribed as 'PRICE BID' on the outer cover of the envelop as already detailed above. Price bids of only technically qualified bidders will be opened and the corresponding manufacturer/exclusive distributor/vendors will be intimated the date and time of the opening of price bid at their e-mail ids. Rest of the bidders will stand rejected.

PRICE: Price to be quoted in both CIP Kolkata Airport and DDP price, up to IACS, Kolkata preferably on INR (The Indian Rupee)

3. BID SECURITY: Declaration in terms of F.9/4/2020-PPD dated 12.11.2020

a. An Account payee Demand Draft/Pay Order for Rs. 8,00,000.00 (Eight lakh only) drawn in favor of "Indian Association for the Cultivation of Science (State Bank of India, Jadavpur University Branch, A/C No. 11079699211, IFSC: SBIN0000093, MICR Code: 700002048)" is to be furnished by the bidders except those who are registered with the Central Purchase Organizations, National Small Industries Corporation or the concerned Ministry or Department. Bid Security money or Earnest Money Deposit (EMD) may also be deposited in Bank Guarantee or any other acceptable form.

b. The Demand Draft for the Bid-Security should have at least 90 (ninety) days validity period from the date of opening of the bids.

c. In case of non-award of the work the Bid Security money would be returned to the unsuccessful Bidders. The Bid Security will not carry any interest.

4. PERFORMANCE SECURITY:

An Account Payee Demand Draft or a Bank Guarantee on a Schedule Bank of 3% of the order value in the name of "Indian Association for the Cultivation of Science" is to be furnished by the successful bidder as Performance security. Performance security money should remain valid for a period of 60 days beyond the date of completion of all contractual obligations of the supplier including warranty obligations. Bid security money or EMD will be refunded to successful bidder on receipt of the Performance security money. No interest is payable on the Performance Security.

GENERAL INSTRUCTIONS

1. Validity of tender: Tender submitted should remain valid for at least six months from the date of opening the tender. Validity beyond six months from the date of opening of the tender shall be lapsed by mutual consent.

2. The tender should accompany a compliance chart.

3. Incomplete and conditional tenders as well as tenders received after the due date will be summarily rejected without assigning any reasons thereof.

4. At any time prior to the bid due date, IACS may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective bidder during pre-bid meeting, modify the bidding documents. The amendment(s) will be notified on the institute website. Prospective bidders are advised to occasionally to visit the website (www.iacs.res.in/tender) for any amendment.

5. 100% payment after delivery and successful installation or 90% after delivery in case of LC.

6. Installation/Demonstration/Application training at site: Installation & user training at IACS, free of cost by the supplier. Installation must be done at user's site with no extra costs involved. A one-week (at least) general entry-level training-cum-workshop and advanced-level training-cum-workshop must be arranged at the user's site by the vendor on experimental and data analysis part, with no extra cost involved.

7. Service facility: In India, preferably Kolkata, supplier should mention their details of service setup and man powers who are responsible for after sales support. The system must be attended within 48 hrs of reporting.

8. The model number, make and a printed literature of the product should be submitted positively.

9. Proposed delivery schedule should be mentioned clearly. Delivery of the materials to the PI should be within 60 days from the date of purchase order.

9a. An amount at the rate of 0.5% per week or part thereof subject to a maximum of 10% of the cost be deducted from the Bill/Tax Invoice in the event of delayed supply.

10. Original Equipment Manufacturers / exclusive distributors / vendors should have history of supplying this type of instruments to this or other scientific organizations. Availability of a list in this regard would be preferred.

11. Authorized dealership certificate should be provided in case of Original Equipment Manufacturers is not quoting directly.

12. Guarantee certificate, users' manuals etc. are to be handed over to the user after successful commissioning of the system.

13. In the event of date being declared a closed holiday for purchaser's office, the due date for submission of bids and opening of the technical bids will be the following working day at the appointed time.

14. In case of any dispute, the decision of IACS authority shall be final and bidding on the bidders.

15. For any clarification regarding technical specifications, information etc., please send your queries to Professor Joyram Guin (ocjg@iacs.res.in).

16. The authority of IACS reserves the right to reject any or all of the tenders received without assigning any reason thereof.

17. The OEM/vender should have at least one user available in the eastern zone of India, preferably in Kolkata.

Registrar