

INDIAN ASSOCIATION FOR THE CULTIVATION OF SCIENCE
2A & 2B , Raja S.C. Mullick Road, Jadavpur, Kolkata-700032

NIT No. :IACS/OC/JD/ 21-22/63

Date: 22.07.2021

Sealed tender in two bids system (Technical bid and Price bid) is invited from bonafide, resourceful and eligible manufacturer/exclusive distributor/vendors for **Gas Chromatography Mass Spectrometry (GCMS)**.

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 envelope, 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 the **Registrar, 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.	IACS/OC/JD/21-22/63	Date: 22.07.2021
Pre-bid meeting(date, time & place) to discuss technical specification	02/08/2021, 2.30 PM (Room No. 107A, Main Building, IACS)	
Last date and time of submitting tender	16/08/2021, within 3.00 PM	
Date and time of opening tender (Technical Bids)	19/08/2021, 2.30 PM	
Place of opening tender	Room No. 107A, Main Building, IACS	
Date and time of 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.	
Contact	Email: ocjd@iacs.res.in Tel.+91 33 2473 4971 [Ext 1405]	

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 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.

Quotations received incomplete or beyond the stipulated time will be summarily rejected.

Bidders should submit their past experience for supplying and successful installation of similar units to other research Institutes/Universities/other organizations in India and abroad. Please provide documentary proofs of such successful installation and supportive documents that the instruments are running successfully.

The equipment is estimated to cost of Rs. 42,00,000/-

(This estimate however is mentioned merely as rough guide and indicative)

1. TECHNICAL BID

The technical bid should contain technical specifications and should be kept in a separate sealed envelope duly superscribed as 'TECHNICAL BID' on the outer cover of the envelop as already detailed above. **It should be clearly mentioned on the envelope as "Technical Specification for Gas Chromatography Mass Spectrometry (GCMS)".**

Tender specifications for Gas Chromatography Mass Spectrometry (GCMS).

1. GC MAINFRAME :

- Gas Chromatograph with Advanced / Electronic /Programmable Flow control technology for Simultaneous Pressure, Temperature and Flow Programming
- Large Column Oven with temperature range from Ambient +4°C to 450°C or better
- Temperature Accuracy : ±1 %
- Oven temperature programmed rate setting range : -250 to 250°C.
- Retention time repeatability: < 0.0008 min.
- Peak area repeatability: < 1 % RSD.
- Temperature set point resolution: 0.1 °C
- Graphical user interface with large LCD display
- Self-diagnostic function with GLP/GMP support
- Fast oven cooling speed 450 deg to 50 deg within 4 minutes
- GC Should be capable of accommodating capillary as well as Packed columns.
- Electronic Control of Detector Gases
- **Constant Linear velocity mode, constant pressure, constant flow mode must be available with documentary evidence.**
- Auto Ignition facility should be there for FID
- Self-diagnostic function with GLP/GMP support
- Functions such as analysis counter, automatic ON/ OFF scheduling, etc
- **The system should be able to use Hydrogen and Nitrogen also as carrier gas. Documentary evidence is required to be furnished.**

System should have Sleep/Wake Function to put the GC into sleep mode when not in use to save valuable energy

2. INJECTORS :

- Independently temperature controlled injection ports.
- Split / Splitless injector for capillary Columns with Septum Purge functions.

Split/splitless Injector:

- The Split/Splitless Injector should have advanced sealing mechanism ensuring quick and easy column to injection unit and column to detector connections without using any mechanical tools.
- Must be able to install 3 independently temperature controlled injector units simultaneously.
- Split ratio range: 0 to 9000 or higher.
- Maximum operating temperature up to 450°C.
- Number of temperature programming steps : 7 or higher
- Must be able to set total flow range : 0 to 1,300ml/min or higher for He , and advance flow control pressure range up to 1000 KPa or higher
- Efficient gas saver mode built-in to reduce gas consumption during standby without affecting performance.
- Must have electronic septum purge flow control to eliminate carry-over.

Auto Injector :

- Sample injection method: Liquid sample injection via micro syringe
- Number of samples: 12 vials or more, upgradable to 150 vials
- Number of sample injections: minimum 1-99 injections per sample
- Cross contamination: Less than 10^{-4}

3. MS Detector with EI (Electron Ionization) source:

- Mass Filter : Metal Quadrupole rods with contamination removing Facility by pre rod/pre filter.
- Mass Range : 1.5 to 1000 m/z or higher
- Sensitivity EI scan : 1 Pg OFN, m/z 272 should produce S/N \geq 2000 :1 for the entire mass range.
- Mass Stability : ± 0.1 amu / 48hours or better
- Scan Speed : 20,000 u/sec or better
- SIM : 64 channels x 128 ions sets/groups or higher

- Variable Ionization Voltage : 10 – 200ev or higher
- Variable Ionization Current : 5 - 250 μ A or better
- Ion source Temperature : Variable between 140-300 $^{\circ}$ C or better and should be Independently controlled
- Filament : Dual (Automatic Switching during analysis should be possible)
- Detector : Electron Multiplier with Overdrive lens giving dynamic range of 8×10^6 or better.
- Turbo molecular pump 350 L/s or higher capacity.
- Auxiliary pump/Rotary pump: minimum 30 L/min 1 no, for initial Vacuum build-up support.
- Evacuation System Control: Fully automatic “Auto Startup” and “Auto Shutdown” automatically should execute Turning - on and - off of Turbo pumps, Fore line pump, and leak valves.
- The Ion Source should be Front access type for easy maintenance.
- There should be provision for Hydrogen and Nitrogen gas to be used as carrier gas apart from He.

4. Software for Control of GC as well as GCMS :

- Windows based Software Should Provide Single Point Control of all GC Parameters, Injectors, detectors.
- Post run analysis tool with built in colour flagging facility must be there with documentary evidence.
- Software should have Security, Audit trail , System check , Software integrity and system Suitability test should be included as standard functions.
- Flexible report Format i.e for Method, chromatogram, Mass Spectrum, Peak table, Quantitation result, calibration curve, Status Log , texts, graphics.
- There must be suitable software tool for easy post run analysis with color flagging for pass/fail /to be checked for easy reporting. Documentary evidence to be furnished for the same with the technical bid.
- It should provide automated tuning & File management functions with Library Search facility.
- Complete Software control of vacuum system with Auto Start-up / Shut-down and vacuum protection against Power Failures.

5. Columns :

- Rxi- 5SIL MS or equivalent capillary column 30mx0.25mm, 0.25 μ – 1 No

6. Essential utility kit including essential spares for Trouble Free maintenance for minimum of 2 years should be quoted.

7. Installation Accessories :

- Branded Computer with LaserJet Printer – 1 set
- Additional Computer for Data analysis – 2 set
- 5KVA Online UPS with 1 Hour Battery backup for GCMS system – 1 Number
- Filled IOLAR grade Helium Cylinder – 1number.
- Double Stage Gas Regulators for all the above Cylinders.
- Gas Panel for He should include Molecular sieve, Moisture & Oxygen traps with necessary tubing's, Nuts & Ferrules.

8. Upgradability to Direct Sample Injection facility to MS:

Suppliers should quote the GCMS model with upgradability option for directly injecting (DI) sample to the MS ion source at programmable high temperature up to 500°C without the need of injecting sample through GC. Documentary evidence must be submitted.

9. Warranty: The GCMS instrument with all accessories except consumables should be covered with 2 years Warranty.

A compliance table (see below) must be prepared and submitted along with the technical bid.

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

2. PRICE BID:

The financial bid indicating (item-wise) 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 they 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 on CIF Kolkata and also FOB basis.

3. BID SECURITY:

a. An Account payee Demand Draft/Pay Order of any of the Nationalized Banks for Rs. 1,50,000/- (Rupees one lakhs & fifty thousand only) drawn in favour of “Indian Association for the Cultivation of Science (State Bank of India, Jadavpur University Branch, A/C No. 11079699211, IFSC: SBIN000093, 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, as Bid Security money or Earnest Money Deposit (EMD). Alternatively, the Bidder shall have the option to furnish the EMD in the format of Bank Guarantee (BG).

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

4. PERFORMANCE SECURITY:

An Account Payee Demand Draft on any nationalized bank of India of 10% 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.

5. TERMS OF PAYMENT:

Payment will be made through irrevocable Letter of Credit in two instalments. 90% of the money will be released on submission of shipping of documents. Remaining 10% will be released after successful installation of the instrument.

6. 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. Installation/Demonstration/Application training at site: Installation & user training at IACS, free of cost by the supplier.

6. Service facility: In India, preferably Kolkata, supplier should mention their details of service setup and man powers who are responsible for after sales support. Response time should be within 24 hrs.

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

8. Proposed delivery schedule should be mentioned clearly.

9. 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.

10. Authorized dealership certificate should be provided in case of principal manufacturing company is not quoting directly.

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

12. 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.

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

14. For any clarification regarding technical specifications, information etc., please send your queries to **Prof. Jyotirmayee Dash** (ocjd@iacs.res.in).

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

Acting Registrar