

INDIAN ASSOCIATION FOR THE CULTIVATION OF SCIENCE

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

NIT No. : **IACS/SCS/PG/2020-21/19**

Date: 02/12/2020

Sealed tender in two bids system (technical bid and price bid) is invited from bonafide, resourceful and eligible manufacturer/exclusive distributor/vendors for "**GC-MS System**"

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.	NIT No. IACS/SCS/PG/2020-21/19 Date: 02-12-2020
Last date and time of submitting tender	28.12.2020 by 12:00 noon
Pre-bid meeting(date, time & place) to discuss technical specification	14.12.2020 at 3:00 PM, ONLINE (Interested bidder may contact icpg@iacs.res.in for meeting details)
Date and time of opening tender (Technical Bids)	28.12.2020 at 3:00 PM
Place of opening tender	School of Chemical Science Office
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: icpg@iacs.res.in , Tel. +91 33 2473 4971 [Ex 1351]

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.

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 envelope as already detailed above. **It should be clearly mentioned on the envelope as "Technical Specification for GC-MS System".**

Technical specification for GC-MS system along with all the essential accessories

Gas Chromatography-Mass Spectrometer (GC-MS) with original licensed windows-based software and Split-Splitless capillary Injector. Easily swappable interchangeable injector/detector position as per the requirement in the future.

- Gas Chromatograph with Electronic Flow control for Simultaneous Pressure, Temperature and Flow Programming
- All gases flow should be adjustable/ controlled by software with no manual control.
- Auto shut down of instrument in case of leak detection in carrier gas.
- Flame out test to prevent injection by setting the GC to a 'not ready' state.
- Should have Isolation mode to allow septum change without interrupting carrier flow.

Column Oven:

- Temperature Programming Ramps: 20 or higher
- Should have an operating range of few degrees above ambient to 450°C;
- Maximum Heating Rate: 120 °C/min or better; Maximum Number of Ramps to facilitate better analysis of environmental pollutant.
- Operating Range: Ambient +3 °C to 450 °C or better
- Oven cool-down (22 °C ambient): 450 °C to 50 °C in <4 min
- EPC Pressure Range: 0-140psi or better
- Retention time repeatability: <0.0008 min or better Overheat protection.
- Typical peak area repeatability: <0.5 % RSD or better
- Provision to install two or more columns, Retention time lock facility preferable

Pneumatics:

System should have pneumatic Electronic Flow Control for all injectors & detectors.

Injectors - Split/Split less injector:

- Split/Split less injector for capillary Columns with Septum Purge functions
- Must be suitable for all capillary columns, 50 um to 530 um id
- Split ratio range: 10000:1 or better, must be available to avoid column overload
- Maximum operating temperature up to 400°C
- Efficient carrier gas saver function built-in to reduce gas consumption during standby without affecting performance.
- Must have electronic septum purge flow control to eliminate carry-over
- Should have upgradation facility of Isolation mode to allow column change without breaking the vacuum.
- Pressure range: 0–1000 kPa (0–145 psi)

Mass Spectrometer:

MS system should be offered with air-cooled >250 Litre vacuum output turbo molecular pump, EI ion source and with the following specifications:

Ion Source: should be Free from any form wired connection, easy to clean, easy to maintain off-axis ion source, with suitable facility to carry out helium ion burn in source before the main quadrupole.

- Should have dual filaments in all ionization modes. Source with Programmable heating at 350 °C or better
- It should have accurate regulation of emission current up to 350 μ A or more with improved regulation at low current.
- It should have Integrated, dual filament assembly mounted with the same geometry with improved filament lifetime and effective regulation of emission current across the available emission current range.
- The user definable electron energy should be adjustable from 0-150 eV or more
- It should have constant calibration gas pressure for optimum system tuning.
- The GC transfer line temperature should be programmable up to 400 °C or more.
- The system should have suitable technology to prevent neutrals to gain entry into the main analytical quadrupole.
- The system should have the upgradation facility for no vent to change the column as well as source cleaning without venting the vacuum of MS
- EI source with maximum temperature of 350 degree C or better
- Electron energy up to 150 ev.or better
- Emission current range - Up to 350 μ A or better

Mass Spectrometer:

- EI sensitivity changed to 2000:1 (Guaranteed & to be demonstrated during installation. The supporting specification to be available in Company WEBSITE)
- Scan speed : 20000 u/s or better
- The Main quadrupole rods should be non-coated, homogeneous, solid metal rod and cleanable (No heating is preferred)
- It should utilize new generation discrete dynode electron multiplier integrated with linear-log electrometer with maximum linear output
- Electronic dynamic range $> 10^8$ or better
- Mass Stability: 0.1 u/48 hours or better
- Mass Range: 2 –1000 u or more
- Resolution: Unit mass resolution maintained over the entire mass range
- Scan Rate: Fast quadrupole scanning up to 20,000 u/s or better
- Sensitivity: EI scan sensitivity 2000:1, by 1 micro liter injection of 1pg/ul OFN standard scanning from 50 to 300 amu at nominal 272 or better.
- EI SIM Instrument detection limit should be 5fg or less.
- Detector : 10KV conversion dynode detector with Overdrive lens
- Turbo Molecular Pump: turbo molecular pump with capacity of 250L/sec or better
- 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.
- EI source should be inert to active compounds
- Should have provision for Selected Ion Monitoring Scan while simultaneously acquiring data in the Full Scan Mode.

Instrument Control:

- It should have scan modes like full scan, SIM, and alternating full scan/SIM.
- It should have ability to alternate between full scan MS and SIM target analysis on successive scans.
- In full scan/SIM mode, the data should be acquired into a single file with the ability to be parsed into separate views by the data system.
- Auto SIM and timed acquisition (t-SIM) scan modes.

System should be Field upgradeable with the following Features:

- Analysis of High boiling components directly into the MS bypassing the GC by injecting directly to MS.
- Upgradation with high sensitive source to achieve an IDL <1fg for highly sensitive application.

Instrument guaranteed detection limit: 5fg or less

Library: NIST-2017 library with license

Columns: (2 numbers) DB5MS/HP5MS/EB5MS or equivalent column with dimension – 30m x 0.25 mm x 0.25µm. (2)

Computer: Suitable factory fitted Compatible Computer workstation should come along with GCMS

All essential spares & consumables like: EI Filament, Spacer, Septa, Graphite ferrule, Vespal Ferrule, Washers, Nuts, Glass Inserts Split / Split less, O-ring, Standard Tuning Sample (PFTBA), Aluminum Packing, Standard OFN Sample, Vacuum pump Oil, FID jet, FID Nozzle etc. should be provided for trouble Free maintenance for 2 years along with the system.

SPECIAL NOTE:

- All specifications offered Needs to be supported with original literature as well as the same literature needs to be available on the official website of the manufacturing company.
- The offer to be made in details with all technical specification, item details with part no's.
- All supporting technical literatures complying the technical specification need to be attached along with the order.
- Extensive Training to be provided at installation site with a qualified application specialist

Delivery: offered final/complete cost to door delivery basis up to IACS Jadapur, Kolkata.

Installation, demo of Instrument and all related expenses to supply instrument up to the Lab. has to be borne by the supplier.

WARRANTY: 1 YEAR (Comprehensive)

One year warranty (comprehensive) should be provided from the date of installation of the system. Supplier should also quote five years AMC charges separately from the date of expiry of the standard one year warranty.

Manual liquid Syringe- 10ul (3 numbers)

Printer: Laser Jet Printer

UPS: Suitable 10KV_a UPS having insulation class of Transformer and & choke class H with 45 minutes Back up with 3 years warranty.

Gas Cylinder: Helium gas cylinder (2 numbers) filled with ultra pure (99.999) Helium gas with quality certificate.

Gas line: Complete installation of suitable He-gas line for smooth running of the instrument with all necessary accessories like double stage gas cylinder regulator, purification panel, gas line with Stainless Steel tube etc.

Additional:

Supplier should arrange application training by their personnel for minimum three working days after the installation of the system. Users lists of similar equipment supplied in India should be provided (Enclose full list of the users in India). Vendor should have couple of users available in last 5 years in the eastern zone of India. A detailed technical compliance is required with supporting data where possible to show compliance.

Warranty: Minimum 1 year while 3 years extendable warranty is preferred.

Servicing facility within India is a must while service engineer stationed at Kolkata will be preferred. A list of other places where the instrument has been installed should also be provided.

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

*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) price for the item(s) mentioned in the technical bid should be kept in a separate sealed envelope duly super scribed 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:

An Account payee Demand Draft of any of the Commercial Banks for Rs. 1,00,000/ (Rupees one lakh 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 along with Technical Bid, except Micro and Small Enterprises (MSEs) as

defined in MSE Procurement Policy issued by Department of Micro, Small and Medium Enterprises (MSME) or are registered with the Central Purchase Organisation or the concerned Ministry or Department.

Alternatively, the bidder shall have the option to furnish EMD in the form of Fixed Deposit Receipt, Banker's Cheque or Bank Guarantee from any of the Commercial Banks. The Bid-Security should have at least 90 (ninety) days validity period beyond the final bid validity period.

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 commercial bank of India or Bank Guarantee (BG) of any Commercial Bank preferably located at Kolkata 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 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. In case of any litigation the matter will be dealt within the jurisdiction of the High Court of Calcutta only
15. For any clarification regarding technical specifications, information etc., please send your queries to Prof. Pradyut Ghosh (icpg@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.

Acting Registrar

N O T E :

- 1) **WARRANTY:** Minimum 1 year while 3 years or more is preferred (as per requirement of the indenter)
- 2) **PRICE:** Price to be quoted on CIF Kolkata and FOB basis or as per the requirement of the indenter (this may be modified as per the requirement of the indenter)
- 3) **BID SECURITY:** Amount of bid security may be accepted in the range between two percent to five percent of the estimated value of the goods to be procured.
- 4) **PERFORMANCE SECURITY:** Performance Security may be accepted for an amount of five to ten percent of the value of the contract as specified in the bid documents.
- 3) **TERMS OF PAYMENT:** As per nature of the transaction
- 4) **GENERAL INSTRUCTIONS:-**

Item No.- 5 : Installation/Demonstration/Application training at site : This may be modified as per the requirement of the indenter/technical committee.

Item No. - 6 : Service facility : This may be changed by the indenter as per requirement.