

Thursday, 9th March 2017

Tender Notification for the Procurement of a High-Resolution Mass Spectrometer (Last date for submission: 31st March 2017)

Kindly send your best quotation for a High-Resolution Mass Spectrometer with the following technical specifications on C.I.P. Bangalore basis. Your quotation should clearly indicate the terms of delivery, delivery schedule, estimated delivery date, and payment terms. The tender should be submitted in two separate sealed envelopes - one containing the technical bid and the other containing the commercial bid, both of which should reach us, duly signed on or before 1700 hours on Friday, 31st March 2017.

The bids should be addressed to:

*Chairman
Department of Organic Chemistry
Indian Institute of Science
Bangalore – 560 012, INDIA*

The sealed bids should be sent to:

*Chairman
Department of Organic Chemistry
Indian Institute of Science
Bangalore – 560 012, INDIA
Ph: +91-80-2293-2403
E-mail: chairman@orgchem.iisc.ernet.in*

Please enclose a compliance statement along with the technical bid.

Technical Specifications for the High-Resolution Mass Spectrometer

We are seeking to procure a state-of-the-art bench-top fully automated high resolution mass spectrometer (HRMS) system with suitable analyzer for the exact mass and true isotopic measurements, with a robust design. The system should be equipped with latest version of hardware and software, and should be capable of handling both qualitative and quantitative applications.

The following technical criteria are to be met by any HRMS system being quoted under this tender notice:

1. *Ionization Source:*

- A combined ESI/APCI source with both the positive and negative modes of ionization. The combined ESI/APCI must permit switching between the two ionisation types during a single LCMS experiment.
- Flow rates of up to 2000 $\mu\text{L}/\text{min}$.
- The dual ESI/APCI must have dual electrospray to facilitate separate infusion of reference and analyte solution for automated exact mass measurement for compounds.
- An atmospheric solids analysis probe must be available.

2. *Mass Analyzer:*

Quadrupole-Time of Flight(Q-TOF) analyzers with the following specifications:

- Mass range: 20 to 100,000 m/z or better
- Quadrupole Mass range for MS MS/MS analysis: capability minimum 30,000 m/z
- Mass Accuracy: ≤ 1 ppm (Internal calibration); ≤ 3 ppm (External calibration)
- Mass Resolution: 40,000 or better
- Sensitivity: Full sensitivity in MS mode: On column reserpine (100 fg) should give S/N $>100:1$; Full sensitivity in MS/MS: On column reserpine (10 fg) should give S/N $>100:1$
- Acquisition Speed – Resolution: $> 40,000$ FWHM at a data acquisition rate of at least 30 Hz
- Quadrupole isolation for MS/MS experiments
- MS/MS capability: Auto MS & MS/MS Modes; Auto MS/MS of All

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- Scan Speed or Acquisition Speed in MS and MS/MS Mode: At least 30 Hz
- Data Independent Acquisition (DIA): Data acquisitions whereby low and elevated collision energy data are acquired simultaneously to provide precursor ion data and fragmentation ion data for all detectable molecular ions.
- Automated Integral Fluidics: Automated infusion for instrument calibration, lockmass and sample introduction into the source
- Calibration: Automated MS resolution and calibration checks with continuous system monitoring

3. Vacuum System:

A suitable high vacuum system with air cooled, oil-free turbo molecular pump with back up rotary pumps

4. Software for the HRMS:

- The provided software should be capable of formula generation and elemental composition, true isotope pattern of parents and fragment ions
- Processing Software & Features: A user friendly software for the operation of the HRMS and capable of performing MS, MS-MS and HRMS modes. Elemental composition calculator from the HRMS data. Deconvolution tool for the determination of molecular weights of high molecular weight compounds.

5. Gas Generator:

- Noiseless, vibration-free nitrogen gas generator along with the trouble free inbuilt compressor and appropriate capacity reservoir capable of delivering the gases required to run the system should be supplied with the system
- Should be complete with all necessary accessories with minimum three years warranty

6. Computer and Operating System:

- Latest model reputed brand computer with all necessary hardware and preloaded Windows 7 or higher operating system (OS) that is compatible with the software of the mass spectrometer. All future up gradation to higher OS should be free of cost. LCD monitor and laser printer should be provided as well.

7. UPS:

- 15 KVA UPS with a minimum of 2 hours back up for the entire system including the vacuum pump, nitrogen generator may be quoted under optional items.

8. Terms and Conditions:

- The vendor is responsible for the installation of the system at the Institute.
- The price quotation should include the cost of installation and training of users to be conducted by technical and application experts.
- The equipment must be covered under full comprehensive warranty for service and all spare parts for the first three years, after successful installation and training. Two years of additional warranty may be quoted.
- The system downtime must be limited to 24-48 hours from the time of reporting.
- Annual Maintenance Contract (AMC) charges for three years may be quoted from the date of expiry of warranty.
- The vendor should have a track record of having previously supplied similar HRMS systems in India. Details of HRMS systems that were previously supplied must be provided.
- The vendor should have qualified technical service personnel for the equipment based in India.
- The lead-time for the delivery of the equipment should not be more than 3 months from the date of receipt of our purchase order.
- The indenter reserves the right to withhold placement of final order. The right to reject all or any of the quotations and to split up the requirements or relax any or all of the above conditions without assigning any reason is reserved.