



Indian Institute of Technology Madras

Department of Chemistry
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Tender Enquiry No: CHY/GSEK/2013-14/018/SPLX January 9, 2014

Sub: Quotations required for Gas Chromatograph Mass Spectrometer (GC-MS)

Dear Sir/Madam,

I would like to buy a Gas Chromatograph-Mass spectrometer (GC-MS). The technical specifications are attached with this letter. I request you to kindly send your quotations according to the specifications attached with this letter before 5:00 PM of 23rd January 2014 (Thursday) along with the corresponding manuals, data sheets, technical specifications and the user list. Please submit your quotations following two bid system in sealed and signed envelopes (one technical bid and one commercial bid). The quotations should be addressed to

DR. G. Sekar
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Department of Chemistry
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Chennai - 600 036.

Sincerely

(DR. G. Sekar)

SPECIFICATIONS FOR GC -FID and MSD with Auto Sampler & Accessories:

Gas Chromatograph Mass Spectrometer

General:

- System should be capable of supporting two inlets and two detector ports simultaneously, should have electronic pneumatic / pressure controls for all the gases and should have Chromatography Data system which is based on Microsoft Windows operating system for instrument control, data acquisition, data analysis, quantization, automation & customization with online and offline sessions provided.
- System should have capability of locking / adjusting the retention time so that same Retention time can be reproduced from system to system and the method should be electronically transferred. NIST 2011 library along-with AMDIS and Deconvolution reporting software should be provided and also Retention Time Locked database for, VOC and Semi-VOC to be provided

The instrument should meet the following requirement:

a	Provision to install two or more columns
b	Operating temp range of oven from near ambient to 450°C
c	Oven temp ramp rate of oven should be 120°C or better
d	Possible to program 15 temp ramps (16 plateaus) or better
e	15 EPC/PPC channels for inlets, detectors or auxiliary gases or more
f	Flow sensor for control & storage of split ratio
g	Possible to use capillary columns of 50, 100, 250, 320 microns and Above
h	The pressure set points should be adjustable by increments of 0.001 psi up to 100 psi Maximum temperature attainable should be 400°C or more
i	Inlets: Two Capillary split/split less inlets should be provided.
j	The system should have one FID detector with the following specification or better: <ul style="list-style-type: none">• MDL: < 1.5 pg c/s OR BETTER(SPECIFY THE COMPOUND)• Dynamic range: > 10⁷• Data acquisition rate: up to 400 Hz OR BETTER All gases flow should be adjustable/controlled by software with no manual control.
k	Auto sampler: Having capacity of 15 vials or more with area reproducibility of 0.3% RSD or less

MS SPECIFICATIONS : LAN based quadrupole MS system with Non-coated Inert source conforming to International safety standards, designed and manufactured under a quality system registered to ISO 9001 with appropriate computer & printer to support the system from original manufacturer. Should include turbo molecular pump WITH 250 L/SEC CAPACITY OR MORE with EI and CI source

- Mass range of 2-1000 amu in 0.1 amu steps
- Mass axis stability should be 0.10 amu/48 hrs

- Scan speed up to 12,000 u/sec or better
- Ion source temp - up to 350oC for better sensitivity for active compounds and it should be programmable. Transfer line temp - 100-350 DEG C
- Quadrupole temp - 150-190o C. Quadrupole should be heated to keep quadrupole clean for a longer period.
- Ionization energy range 5-220eV
- Ionization current range - 1-315μ A
- EI source should be inert to active compounds and should be programmable with maximum tempt of 350 deg C
- EI scan sensitivity and is a must parameter to demonstrate atleast: 600:1 S/N for 1 pg OFN scanning from 50-300 amu at nominal m/z 272 ion
- EI SIM Instrument detection limit of 10 fg **or better** for OFN standard at nominal 272 u ion should be demonstrated at site
- The mass spectrometer shall have the capability to cerate a 90 SIM ion groups with up to 45 ions per group or more.
- Preferably Mass Spectrometer must utilize a Quadrupole Mass filter consisting of a Monolithic Quartz Structure.
- Should have auto tunes feature, One-click auto tune for BFB, DFTPP
- Spectral libraries: NIST LATEST VERSION WITH LICENCE.

General Terms and Conditions:

System should be installed by company professional & thorough technical training to be provided in analyzing and troubleshooting

Please quote the following accessories separately (If it is already in main quote no need to list here)

1. Non-Stick BTO Inlet Septa 11mm 50 pk Non-Stick Bleed & Temperature Optimized 11mm inlet septa; max temp 400c in Tri-Fold Blister Pack of 50
2. Ferrule, 0.5mm ID, Graphite, 0.1-0.32mm column, short, 10/pk
3. Ferrule, 0.5mm ID, 15% Graphite/85%Vespel, 0.32mm column short, 10/pk
4. Inlet Liner Non-Stick O-Ring, 10 pack Fluorocarbon,standard inlet weldment Pre-cleaned & treated to prevent outgassing & sticking
5. Column nut, universal Agilent inlets or detectors 2/PK
6. Syringe, 10ul 23/26 ga, GT, FN, Taper
7. Filament,high temperature EI for GCMS
8. Helium conservator
9. 10 kAV UPS
10. One year consumable kit
11. DB-5 MS and DB-1 column or equivalent
12. GC chiral columns-2 (excluding cyclosil-β)
13. One each Helium, nitrogen, hydrogen, zero air cylinder and related accessories