

**Department of Chemistry**  
**Indian Institute of Technology Delhi, Hauz Khas, New Delhi-110 016**

***Notice Inviting Quotations (NIQ) for the Purchase of a GC-MS***

Quotations (separate sealed envelopes of technical and commercial bids kept together in a single sealed outer envelope) are invited for the purchase of a “GC-MS” as per the specifications given below. Your sealed quotations should reach the address given below at the latest by 5 p.m. (IST) on 20-03-2013 with the superscription “GC-MS due on 20-03-2013”:

*Dr. S. Nagendran,*  
*Department of Chemistry*  
*Indian Institute of Technology-Delhi (IIT-Delhi)*  
*Hauz Khas, New Delhi-110 016*  
*E-mail: [sisn@chemistry.iitd.ac.in](mailto:sisn@chemistry.iitd.ac.in)*

***Minimum Technical Specifications for the GC-MS:***

***Mass Spectrometer:***

Ion source	:	External
Ionization Modes	:	EI, NCI, and PCI
Energy of the electron	:	Should be variable
Temperature of the source	:	At least up to 290 °C
Filament current	:	At least up to 225 $\mu$ A
Analyzer type	:	Quadrupole iontrap
Analyzer capability	:	It should be capable of doing EI/MS, EI/MS/MS, CI/MS, CI/MS/MS, and MS <sup>n</sup>
Desired mass range	:	At least up to 975 Daltons
Resolution	:	Should be unit mass over the entire range
Mass axis stability	:	At least $\pm$ 0.1 Dalton over 10 h
Maximum ionization time	:	At least 60 ms
Detector	:	Electron multiplier

Linear dynamic range	:	At least from $10^3$ to $10^4$
Full scan	:	Should be available
Scan rate	:	At least 5000 amu/sec
MS <sup>n</sup> , where the value of n should be	:	At least 4
SIS	:	At least up to 5
Scan Sensitivity: EI Scan	:	S/N of at least 20:1 with 500 fg OFN, on-column, RMS (for the extracted ion of <i>m/z</i> 272)
Scan Sensitivity: PCI Scan	:	S/N of at least 10:1 with 100 pg benzophenone (or equivalent compound), on-column, methane CI, RMS (for the extracted ion of <i>m/z</i> 183)
Scan Sensitivity: NCI Scan	:	S/N of at least 50:1 with 1 pg DFBZ, on-column, methane CI, RMS (for the extracted ion of <i>m/z</i> 362)
Vacuum pump	:	Should have at least 250 L/sec turbo-molecular pump

***Gas Chromatograph:***

Oven temperature	:	At least up to 450 °C
Temperature ramps	:	Should have at least 20 ramps and 21 isothermal holds
Ramp rate	:	From 0.1 to 100 °C/min or better
Rate of cooling	:	400 °C → 50 °C should be achievable at least in 5 minutes
No. of injectors	:	Two (one S/SL and one PTV)
Capillary column width	:	Variable
No. of columns	:	At least four capillary columns; should be suitable for separating small organic, inorganic, and organometallic compounds and oligomers
EPC	:	Full electronic pressure control for

injector, carrier, and detector gases

All the necessary items and accessories for making the unit complete and functional should be of supplied and should be mentioned in detail in the technical bid. The system should be completely integrated and digitally controlled.

**Workstation:**

Computer Control	:	The complete GC-MS system should be controlled through and computer
Computer configuration	:	A branded computer with the following minimum configuration: 2 <sup>nd</sup> generation Intel i5 3.1 GHz processor, 8GB memory, 500 GB hard drive, 21 inch high resolution color flat panel monitor
Operating system	:	Windows 7
Spectral library	:	Latest NIST and Wiley
Software	:	All the software should be original and should supplied in a CD-ROM. Any up-gradation of the software should be supplied free of cost in the future

**Mandatory Accessories:**

Air tight vials with PTFE caps	:	1000 pairs
Air tight syringes	:	10 $\mu$ L capacity (3 Numbers) 100 $\mu$ L capacity (1 Numbers) 500 $\mu$ L capacity (1 Numbers)
Inert column	:	Maximum 15 cm and should take the air and moisture sensitive samples into the MS system without any contamination with air.
Electronic capping and decapping tool	:	2 Numbers
Carrier gas	:	2 filled helium gas cylinders

		(47 L) with branded dual stage regulator
CI gas	:	2 filled cylinders with branded dual stage regulator
UPS	:	10 KVA branded (APC/Uniline/Numeric) UPS with 1 h backup at full load
Syringes	:	At least four micro syringes of different capacity
Gas purification panel	:	For at least three gases

All the other consumable items/parts required for the first three years of trouble free operation/maintenance and a comprehensive onsite warranty for the same period should be given.

**Optional Accessories:**

Vacuum interlock	:	1 No.
FID, ECD, FPD, and TCD detector	:	1 No. each
Probe for handling solid samples (like DIP, TSP, etc.)	:	1 No.
Vials for solid probe	:	Rate for 100 pieces
Liquid auto-sampler (minimum 100 sample vial capacity)	:	1 No.
Head space with transfer line for sampler	:	1 No.

**Terms and Conditions:**

1. Please submit the TECHNICAL and FINANCIAL bids in separate sealed envelopes. Mark the two envelopes clearly as “Technical Bid” and “Financial Bid”. Both the sealed envelopes should be sent in a single sealed envelope, with the marking “Quotations for a GC-MS due on 20/03/2013” on the top. The quote should reach the following address on or before 20/03/2013 (up to 5.00 PM).

S. Nagendran  
Assistant Professor  
Department of Chemistry

Indian Institute of Technology – Delhi (IIT Delhi)

Hauz Khas, New Delhi - 110016

2. Please quote both FOB and CIF (New Delhi) prices. Include the installation charges also.
3. Quote should be in Indian rupees as well as international currency and be valid for at least three months.
4. Attach all the relevant technical literature and a list of similar installations done in India.
5. A minimum of three years comprehensive onsite warranty should be provided. Also, quote warranty/AMC for the next three years after the completion of the onsite comprehensive warranty.
6. Mention if you can provide any technical support like training of IIT Delhi personnel at IIT Delhi or in your factory. Kindly mention about this in the technical bid.
7. If the quote is being submitted by the representative of the Principals/manufactures themselves, a valid Agency ship/Dealership Certificate authorizing the agent to quote to IIT Delhi on behalf of the Principals should be enclosed.
8. The Institute reserves the right to accept/reject any/all quotations without assigning any reasons thereof.
9. Complete set of manuals for the operations and servicing of equipment should be given. All circuit diagrams, other mechanical, and electrical schematics must be provided to main unit, sub systems, and accessories.
10. Spare set - A complete set of spares and consumables should be supplied for three years of trouble free operation.
11. Delivery period: Within 2 months from the receipt of PO.
12. Clearly specify the installation requirements – such as space, power, frequency, environment (temperature and humidity) etc.
13. If the items quoted are proprietary in nature, please enclose proprietary certificate from the principals stating “certified that ----- is a proprietary item of M/s. ----- and no other manufacturer make these items”.
14. If the bidder is Indian agent, the agency certificate should be enclosed.
15. Please produce compliance certificate for the aforementioned technical specifications with suitable details. Just mentioning “Yes” for all without adequate literature may lead to the rejection.
16. Please ensure that the Indian agent has been enlisted with the Department of Expenditure, evidence may please be attached.

17. The details regarding the service network of the company in India should be clearly mentioned in the technical bid.