

Amendments to

Tender Notification for the procurement of “GC and MSD with TDU” at the Indian Institute of Science, Bangalore

(Last date of submission of tenders: **20-MARCH-2017**)

REF: CES/RMB/2016-17

Dear Sir/Madam,

Kindly send your best quotation for the following item on C.I.P. Bangalore basis. Your quotation should clearly indicate the **terms of bid valid, delivery, delivery schedule, payment terms** etc. 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, 20 March 2017**

Please enclose a item wise compliance report along with the technical bid.

Yours Sincerely,

**The Chairperson,
Centre for Ecological Sciences,
3rd Floor, Biological Sciences Building,
Indian Institute of Science,
Bangalore – 560 012, Karnataka, India,**

SPECIFICATIONS OF GC AND MSD WITH TDU

The Single Quadrupole GCMS should have the following features to deliver high performance operation, maximum sensitivity, maximum uptime, and maximum productivity.

All the instrument specifications should be published in the Website of the vendor & available for verification.

A. Thermal Desorption Unit Specification:

Autoinjector / Autosampler:

- 1) Fully automated liquid auto injector / auto sampler
- 2) Thermal desorption unit to be attached to the GC/MS for dynamic headspace sampling.
- 3) TD measurements (can be combined with liquid autosampler if possible for at least **100** samples).
- 4) Remote controlled, cooled injection system.
- 5) It should inject from 0.1 µL to 200 µL or better range with variable speed and must perform from software.
- 6) Auto Sampler must have facility to inject samples at two injection port or others.
- 7) No. of Channels – At least two, Operating Voltage 230 V.

- 8) Separate Tube conditioner module (heater and gas flush) for separate preconditioning of TD sample tubes.
- 9) It should be an ideal system for field based situations and cryogen free operation.
- 10) Capable of Electrical cooling, low gas consumption and possibly stringent leak testing.
- 11) Company should provide servicing for TD Equipment

B. Gas Chromatography Specification:

- 11) High performance GC oven temperature control from 40 °C to 450 °C.
- 12) GC Oven Should support 20 oven ramps & 21 Plateaus.
- 13) Maximum achievable temperature ramp rate should be 120°C/min or better.
- 14) Cool down rate 450°C to 40°C within 4 minutes or less.
- 15) Advanced electronic flow control modules with Pressure set points adjustable in increments of 0.001 psi, with typical control ± 0.001 for the range 0.000 to 99.999 psi.
- 16) System should have Gas saver mode to reduce gas consumption without compromising performance.
- 17) Possible to use capillary columns of 50, 100, 250, 320 microns.
- 18) Programmable Split / splitless inlet with electronic flow control up to 10 ramps & 900 Deg/Min.
- 19) GC should have inbuilt back flush facility.
- 20) All gases flow rate should be adjustable/controlled by software with no manual control.

C. Mass Spectrometer Specification:

Ion Source Type:

- 21) Standard Inert Source: Dual filaments for non-coated EI source with EI scan S/N of 1500:1. Should be easily removable/interchangeable.
- 22) Jet Clean Self Cleaning Ion Source for maintenance free operation periods and all JetClean operations should be controlled by the Software.
- 23) EI and CI (PCI and NCI) source with repeller, source lenses, RF lens and dual filaments (optional) in all ionization modes, programmable up to 350°C or higher.
- 24) Inert ionsource, Lifetime Source.
- 25) Ion source temperature 110 to 350 °C.
- 26) Non coated inert EI source with dual filament to run sample with complete confidence and reduces cleaning requirements, especially when analyzing dirty samples.

Transfer line Temperature:

27) Transfer line temp 100-350°C

Mass Range:

28) Mass range of 2-1000 amu or better.

Mass Axis Stability:

29) ± 0.1 amu or better results over 24 hours or time required

Scanning Capabilities:

30) Scan speed of 20,000 u / sec or better.

Tuning:

31) Should have software controlled Auto tune or manual tune to enable quick start up for quantitative analysis.

Vacuum Pump

32) Oil free Vacuum pump for no oil contamination.

33) One split flow turbomolecular vacuum pump for creating high vacuum.

Sensitivity

34) High S/N in all modes with femtogram detection. To be demonstrated on site using OFN standard.

Quadrupole

35) Quadrupole should be made up of inert material with hyperbolic shape preferable to have better mass transfer efficiency.

36) Quadrupole temperature: 150-200°C preferable, Quadrupole should be heated to keep quadrupole clean for a longer period.

Detector:

37) TripleAxis Detector with high energy dynode and long life electron multiplier.

38) Femtogram level limits of detection and quantification should be possible.

Library and Data System Software:

39) Should provide the latest version of NIST library (see also Point 45).

40) Software for routine GC, GCMS quantification.

41) Capable of working both online and offline for data acquisition and manipulation.

42) Provision of Auto tune (to optimize MS parameters automatically) and Manual tune (tuning programs).

43) Database for Environmental and Food Safety with Compound Database of over 800 pesticides.

44) Standards for Pesticides. (Not required)

45) Commercial mass spectral library options, including NIST/Wiley libraries; Pesticides, Pollutants and their Metabolites. Except NIST library, other libraries are to be quoted as optional.

46) Licensed version of all software / database is required.

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47) Minimum detectable level (for Tridecane): <1.4pg C/s.

48) Linear dynamic range: >10(7).

49) 450 °C maximum operating temperature.

50) Splitter for GC detector & MS.

51) Split / Splitless inlet.

Optional Items:

53) Remote start/stop.

54) Storage of at least 10 methods.

55) Easy parts identification and part number finder software.

Other Accessories and Consumables:

56) SPME holders and its accessories.

57) 10 KVA OnLine UPS with 60 min Backup.

58) Gas cylinders with Regulators, Gas filter pane.

59) PC with latest configuration and laser printer.

60) Syringes, Auto sampler vials with screw cap, septa for injector, rings for injector liner, split vent trap. Vials and Inserts should be provided in bulk quantities (at least 50 packs). Crimper and decapper should also be provided.

61) Vendor should provide minimum 3 performance certificates for GC MS system with the details of application.

62) List of installations in India should be provided.

63) Maintenance kit, ISI marked Hydrogen, Nitrogen, Zero air, Helium cylinder with regulators.

64) Two compatible Columns of length 30m with 0.25mm ID and 0.25µm film thickness and other columns for better performance in the analysis of chemicals, plant extracts, fragrances, pharmaceuticals, agrochemicals, water, pollutants, etc.

TERMS AND CONDITIONS:

1. The vendor should have a track record of having previously supplied at least **THREE** similar equipments in India / if any (please furnish the contact details of the customers).

2. The vendor should have **qualified technical service personnel** for the equipment based in India (preferably in Bangalore).

3. Spares to be provided for at least 3 years.

4. Complete training for at least 2 persons.

5. The payment will be through confirmed **Letter of Credit**

6. Alternate modes of payment can be suggested with suitable justification.

7. The lead time for the delivery of the equipment should not be more than 4 months from the date of receipt of our purchase order.

8. The instruments must carry a **comprehensive warranty of 3 years** from the date of installation.