

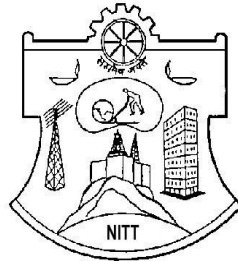
NATIONAL INSTITUTE OF TECHNOLOGY

TIRUCHIRAPPALLI – 15

Department of chemical engineer

Web : www.nitt.edu

Phone : 0431 - 2503100



TENDER DOCUMENT

Tender Notification No.: NITT/F-NO 05/PLAN 2012-2013/CHE

Dated:18/02/13

Name of the component	: Gas chromatographic Mass spectrometry (GC-MS)
Quantity required	: 1
EMD Amount	: Rs. 60000
Cost of the Tender Document	: Rs.1500
Delivery	: 4 weeks after the purchase order
Last Date of submission of Tender	: 11/03/2013 up to 3 p.m.
Address for submission of Tender	: The Director, National Institute of Technology- Tiruchirappalli, Tiruchirappalli – 620015, Tamilnadu, India Kind ATTN to: J.Sarat Chandra Babu
Date of opening of bid	: 11/03/2013 at 3:30 p.m



NATIONAL INSTITUTE OF TECHNOLOGY
TIRUCHIRAPPALLI – 15

DEPARTMENT OF

Tender Notification No.: NITT/F-NO 05/PLAN 2012-2013/CHE

Dated:18/02/2013

NOTICE INVITING TENDER

The National Institute of Technology, Tiruchirappalli (NITT) is an autonomous body under MHRD, GOI, imparting Technical Education and engaged in Research Activities. It is proposed to procure the following component for the departmental academic/research activities.

Sealed Quotations under ***two cover system/Single bid*** are invited for the following component subject to the following terms and conditions, from the reputed manufacturers or their authorized dealers so as to reach this office on or before scheduled date and time. The technical cover will be opened on the same day in the presence of bidders or their authorized agents who may choose to be present.

Name of the component : Gas chromatographic Mass spectrometry (GC-MS)
Quantity required : 1
EMD : **Rs.60000**
Cost of the Tender Document : **Rs.1500**

Time for completion of supply after placing purchase order : **15 days**

Last Date of submission of Tender : **11/03/2013 up to 3:00pm**

Tender to be submitted at the following address : The Director,
National Institute of Technology- Tiruchirappalli,
Tiruchirappalli – 620015, Tamilnadu, India
Kind ATTN to: J.Sarat Chandra Babu

Place, Date and time of opening of bid :

Date: **11/03/2013**

Time: **3:30**

Venue: Central Stores

Note : The Institute shall not be responsible for any postal delay about non-receipt / non delivery of the bids or due to wrong addressee.

INSTRUCTIONS TO BIDDERS

BIDDER'S COPY

1. This document set contains the following:
 - a) Terms and conditions of the Tender
 - b) Details of the Firm offering this Quote
 - c) Technical Compliance Form
 - c) Quotation form (Price Bid)
 - d) Currency Form (quoted on behalf of the foreign suppliers)
 - d) NIT-T's check list copy
2. The bidder's copy is for your future records. Please fill in and return only NIT-T's copy.
3. The bidder should give details of their technical soundness and provide list of customers of previous supply of similar items to Universities, Institutes or Government Departments/Undertakings/public sectors with contact details. The details of the agency/profile should be furnished along with the copy of all related documents.
4. Read through the terms and conditions given and affix your signature and seal if you find them acceptable. Any deviations may be recorded. Read carefully list of specifications that we have enclosed.
5. Fill in the questionnaire regarding the Firm.
6. The downloaded documents '**Technical Compliance Form**' and '**Quotation Form (Price Bid)**' should be **TYPE WRITTEN USING CAPITAL LETTERS ONLY**. At the time of filling the "**Quotation Form (Price Bid)**" make sure that you have not missed anything. Specify the model number & specification for each item. The form should be filled item-wise. Do not leave blank fields. If you are not quoting for a specific item, you should specify "**NOT QUOTING**".
7. **Do not use** ambiguous terms like "**yes**", "**complied**" or "**available**". Specifically mention the matching specification of the product offered by you. Make sure that you have affixed your signature with date and seal on all the documents.
8. Please send the tenders in a sealed envelope super scribed as "**QUOTATIONS AGAINST TENDER NOTIFICATION NO: ... NITT/F-NO 05/PLAN 2012-2013/CHE Item No.05.....** :" so as to reach "The Director, National Institute of Technology, Tiruchirappalli - 620 015, India" on or before **...11/03/2013.....** at **...3:00pm.....** **along with a Softcopy of the Technical Compliance form and Quotation Forms in MS-Excel file format in a CD/DVD or USB drive.**
9. For any further clarifications, contact by E-Mail: sarat@nitt.edu or by written request to "The Director, National Institute of Technology, Tiruchirappalli - 620 015, India"
10. Prebid conference will be held on **...11/03/2013.....** at **.....Central stores.....**

Last Date for receipt of tender at NIT-T : **11/03/2013 up to 3:00pm**
Opening Date for Tender : **11/03/2013 at 3:30pm**

CHECKLIST TO BE FILLED IN BY BIDDER

List of documents to be enclosed	Completed & Signed
1. Terms and Conditions form	YES / NO
2. Details of the Firm offering this Quote	YES / NO
3. NIT-T's Quotation form (Technical & Price Bid)	YES / NO
4. Currency Form(quoted on behalf of the foreign suppliers)	YES / NO
5. Other technical specifications & pamphlets	YES / NO

- Note:** 1. "Cover" should contain the following:
- a. Form of "**Acceptance of Terms and Conditions**".
 - b. Form of "**Firms details**"
 - c. Pamphlets, if any (in a separate sealed cover)
2. Quotation Form (Technical, Price Bid and Currency Form)

Please retain this page with you for your future reference.

Section 1. IN THE CASE OF TWO BID TENDERS

1.1 *Bids are to be submitted under two cover system.*

1.2 Cover 1:

Cover 1 should contain the following:

- a. *EMD - Earnest Money Deposit (EMD) is to be remitted by way of Demand Draft drawn on any Nationalised bank in India by Demand Draft drawn on any scheduled bank in favour of "The Director, NIT, Trichy" payable at Trichy should be submitted. EMD shall bear no interest. Any bid not accompanying with EMD is liable to be treated as non-responsive and rejected.*
- b. *Technical pamphlets*
- c. *Detailed technical specification*
- d. *The agency should furnish copy of license certificate for manufacture/supply of the item**
- e. *The agency should furnish Income Tax PAN number & TIN number.**
- f. *The agency should furnish the last three years balance sheet approved by the CA and the IT clearance certificate.**
- g. *Warranty period offered for the tendered item to be specified. If the warranty period is not conforming with the schedule of requirements given in section 3 of the document, the bid is liable to be treated as non-responsive and rejected.*
- h. *Duly filled up technical questionnaire, if any*
- i. *Duly filled up deviation schedules to technical specification*
- j. *Copy of supply orders completed during the last three years*
- k. *If the prices are revealed in the cover 1, the offer will be summarily rejected*

1.3 *The cover 1 shall be super scribed as 'Technical cover' duly indicating the Tender reference No. and the due date of opening.*

** Appropriately pertaining to the country of origin.*

1.3 Cover 2:

Cover 2 should contain the following

Cover 2 shall contain Price only and shall be super scribed as 'Price Cover' duly indicating the Tender Reference No. and the due date of opening.

Each Cover shall be sent in a double sealed cover. The inner covers (Cover 1 and Cover 2) should be sealed individually with the Sellers's distinctive seal and super scribed with the tender reference no. and due date of opening. Both the inner covers shall be placed in a common outer cover which shall also be sealed with seller's distinctive seal and super scribed with the tender reference no. and due date of opening.

Mention "Kind Attention:J.Sarat Chandra Babu, and submit at the address given in the Notice Inviting Tender.

Cover 1 will be opened on the scheduled date and time mentioned in the tender enquiry.

Cover 2 of the technically and commercially suitable offers alone will be opened on a date which will be intimated to the qualified bidders.

Section 2. “TERMS AND CONDITIONS FORM”

IMPORTANT: READ ALL THE FOLLOWING TERMS AND CONDITIONS AND SIGN THE ACCEPTANCE CLAUSE FOLLOWING IT

1. The offers should be addressed to “The Director, National Institute of Technology, Tiruchirappalli 620015, India” and should be sent in a sealed envelope super scribed “**QUOTATIONS AGAINST TENDER NOTIFICATION No.: NITT /F-NO 05/PLAN 2012-2013/CHE Item No. :05.....**” so as to reach us **on or before...11/03/2013 ,3:00pm.....**
2. Each offer should be sent in a sealed cover with the tender documents. Tenders received through email or FAX will not be considered. **Softcopy of the Technical Compliance form and Quotation Forms should be submitted along with the tender in MS-Excel file format in a CD/DVD or USB drive. However, if there is any dispute between Hard copy and Soft copy, Hard copy will be taken.**
3. The tenders will be opened on...**11/03/2013, 3:30pm** in the presence of the vendors present with authorization letter from the respective companies / firms. Suppliers intending to attend the tender opening should intimate us in advance.
4. Full technical specifications and pamphlets should be sent along with the tenders. **Offers without proper technical specifications will be rejected.**
5. The rate quoted should be on unit basis. Taxes and other charges should be quoted separately, considering exemptions if any.
6. All offers should indicate the taxes and duties applicable, if any. Additional charges for packing, forwarding, freight, insurance etc., if any, should be clearly mentioned. Clearance at Customs will be arranged by us.
7. NIT-T is paying concessional Customs & Excise duty under Government of India Notification No.51/96 for Central Customs and 10/97 for Central Excise Duty vide Certificate No.TU/V/RG-CDE(183)/2011 dt.10.10.11. Currently the purchaser is paying 5% Basic Customs Duty, 2% Educational Cess on Basic Customs Duty, 1% Higher Education Cess on Educational Cess, and 4% Import Additional Duty.
8. The Institute is not authorized to issue C and D forms of Sales tax certificate.
9. In case the offered items are to be imported, the rates should be quoted in foreign currency on C.I.F. Chennai Airport basis, and it should include the Freight up to Chennai airport and the insurance cover should be up to National Institute of Technology, Tiruchirappalli. NIT-T shall pay Customs duty if any.
10. If the price quoted is in foreign currency and if the order value is more than US\$10,000 then 100% payment will be made through **Letter of Credit (LC) at sight on acceptance**. If the order value is less than US\$10,000 , then 100% payment will be through a Telegraphic Transfer (TT). **The bank charges outside India should be borne by the Supplier / Beneficiary. Part shipment not allowed.** If the price quoted is in Indian Rupees, then 100% payment will be made only after installation and commissioning. **No advance payment will be made.**
11. No revision of the price bid will be allowed once the price bids are opened. In case of foreign currency, the agency should mention the % of currency fluctuations they can bear.
12. No increase in price will be allowed after our firm orders are placed.
13. **Payment of excise duty and sales tax / VAT (on ultimate products)** as applicable on the closing date of tender will be to the supplier’s / contractor’s account. Any statutory variation (both plus and minus) in the rate of excise duty/sales tax/VAT after closing date of tender/revised price bid but before the expiry of the contractual delivery / completion period will be to the account of the office.
The bidder(s) will indicate, in their bid, the amount with exact rate of the Excise and Sales tax/VAT on ultimate finished product, as applicable at tendering stage, separately in the bid. In case the above information subsequently proves wrong, incorrect or misleading (a) this Institute will have no liability to reimburse the excess in the difference in rates of the item under which the duty/tax assessed finally (b) this Institute will have the right to recover the difference in case the rate of duty / tax finally assessed is on the lower side.

Any increase in excise duty, sales tax / VAT during extended period of the contract / supply order will be to supplier's / contractor's account where such extension in delivery of the materials/completion of the project was on the request of supplier / contractor. However, any decrease in excise duty/sales tax/ VAT during extended period of the contract / supply order, will be to the account of this Institute.

14. The warranty period should be clearly mentioned. The maintenance charges (AMC) under different schemes after the expiry of the warranty should also be mentioned.
15. Quote should come from authorized dealer or distributor or reseller for each of the product quoted. An authorization letter should accompany your quote for each product quoted; otherwise it may lead to rejection.
16. The delivery period and other terms should be clearly mentioned.
17. Eligibility: Quotation from registered firms/company's / manufacturer under TNGST/CST / other statutory bodies alone be considered. Any Manufacturer / Supplier / Dealer who has been declared ineligible by World Bank/government of India shall not be eligible to participate in this bid. Any fraudulent practices including concealing of facts at the time of submission of bid and there after shall lead to disqualification. List of beneficiaries especially from Educational Institutions / R & D Institutions should also be enclosed with the quotations.
18. For those instruments Cost exceeding 5,00,000/- the company should have (i) Three similar works, each of value not less than 40% of the estimated cost put to tender, or (ii) Two similar works, each of value not less than 50% of the estimated cost, or (iii) One similar work of value not less than 80% of the estimated cost, all amounts rounded off to a convenient full figure, in the last 7 years ending on the last day of the month previous to the one in which the tenders are invited.
19. Complete user, technical and service documentation, and spare parts catalogue are to be provided along with the supply of the item.
20. The vendors are informed that they should not call us over phone or contact us in person. All clarifications can be obtained through E-Mail/FAX/Post. Vendors shall not make attempts to establish unsolicited and un-authorized contact with us after the opening of the offers and prior to the notification of the award. Any attempt by any vendor to bring to bear extraneous pressures on us shall be sufficient reason to disqualify the vendor.
21. Delay / loss in postal transit or due to other reasons will not be NIT-T's responsibility.
22. We are not responsible for accidental opening of the covers that are not properly super scribed and sealed before the time scheduled for opening.
23. The tender should be made only on the "Technical compliance form" & "Quotation form" which is available in our website, otherwise it shall lead to rejection. The technical compliance form & PRICE BID FORM should be duly filled up (preferably **TYPE WRITTEN IN CAPITAL LETTERS**) and should clearly mention the features offered by the bidder against each specification.
24. Authorized signatory should sign on all the pages. Bids without authorized signatures will be rejected.
25. The manufacturers of the quoted make of the product must be of national / international repute and having ISO certificate.
26. **Liquidated damages:** If the bidder/supplier, after accepting the Purchase Order, fails to deliver any or all of the Goods within the period specified in the Order, NIT-T shall, without prejudice to its other remedies under the Rules of Purchase, proceed to cancel the order or agree to accept a delayed delivery on the condition of payment of liquidated damages by the bidder / supplier a sum equivalent to 0.50% of the total cost as indicated in the Purchase Order (which will be deemed as agreed price) for each week or part thereof of delay until actual delivery or performance is completed and such penal charges shall be limited to a maximum of 5% of the total cost. Once the maximum is reached NIT-T may proceed on its own to consider the termination / cancellation of the order.
27. **The vendors are informed that they should sign a stamp paper agreement with us, for Warranty, AMC, etc. before placing the final purchase order as per our terms & conditions and 5% -10% of purchase order value in the form of bank guarantee towards performance security. The bank guarantee will be returned to the supplier after the successful completion of supply, installation, and the warranty period.**
28. Failure to comply with all the terms and conditions mentioned herein would result in the tender being summarily rejected.

29. Vendors are informed that once the companies are shortlisted based on the technical specification, only then the price bids of the firms that meet NIT-T's Technical specification / requirements would be compared.
30. The order will be based on the actual requirement at the time of ordering, optional items may also be ordered based on the actual requirements at the time of ordering. Not quoting for this may result in disqualification.
31. NIT-T reserves the right to modify or alter the specifications after short listing of tenderers.
32. NIT-T reserves the right to change the order quantity or split the orders among multiple vendors without assigning any reason(s) whatsoever.
33. NIT-T reserves the right to reject any or all the tenders without assigning any reasons whatsoever.
34. NIT-T reserves the right to purchase decrease the number of quantity of the item to be purchased
35. The agencies should submit their rate as per the format given in Section 4 of the Notice Inviting Tender in this cover. All the pages of the bid should be signed affixing the seal. All corrections and overwriting should be initialed.
36. The tender will be acceptable only from the manufacturers or its authorized supplier.
37. The bid shall be in the format of price schedule given in Section 4. The contract form as per format given in section 5 shall be submitted. Incomplete or conditional tender will be rejected.
38. Details of quantity and the specifications are mentioned in Section 3 appended to this Notice Inviting Tender
39. The item to be used is strictly according to the specification and subject to test by the Institute/concerned authorities. It must be delivered and installed in good working condition.
40. The Contractor/Supplier shall have no claim to any payment of compensation or otherwise whatsoever, on account of any profit or advantage which he might have derived from the execution of the work/supply in full but he did not derive in consequence of the foreclosure of the whole or part of the works.
41. In case of dispute, the matter will be subject to Tiruchirappalli, Tamil Nadu Jurisdiction only.

Release of EMD: The EMD shall be released after receipt of performance security from successful bidder.

Validity of bids: The rate quote should be valid for a minimum of 120 days. No claim for escalation of rate will be considered after opening the Tender.

Imports: In case, goods are to be imported, the Indian agent should furnish authorization certificate by the principles abroad for submission of the bid in response to this Notice Inviting Tender.

Clarification of Tender Document: A prospective bidder requiring any clarification of the Tender document may communicate to the contact person given in this notice inviting tender.

Amendment of tender document: At any time prior to the last date of receipt of bids, Institute may for any reason, whether at its own initiative or in response to a clarification requested by prospective bidder, modify the Tender document by an amendment.

The Institute may at its own discretion extend the last date for the receipt of bids.

The bids shall be written in English language and any information printed in other language shall be accompanied by an English translation, in which case for the purpose of interpretation of the bid, the

English translation shall govern.

The Institute reserves the right of accepting any bid other than the lowest or even rejecting all the bids without assigning any reasons therefor. The decision of the Institute Purchase Committee is final in all matters of tender and purchase.

The bidder should give the following declaration while submitting the Tender.

ACCEPTANCE

We accept the above terms and conditions and shall comply with them strictly.

NAME OF THE VENDOR:

ADDRESS :

“DETAILS OF THE FIRM OFFERING THIS QUOTE”

(Write or print or type in block letters and please answer all the questions)

1. Name of the firm? 2. Date of incorporation?
3. Nature of the company - Government / Public / Private Company / Partnership / Proprietorship:
4. Specify the number of years in this line of activity by the Company ::

5. Quantity of sales in the last three years for the “.....” (same model that you have quoted)?

2009-2010	2010-2011	2011-2012
<input type="text"/>	<input type="text"/>	<input type="text"/>

6. Turn over in the last three years (Figures should be in Indian Rupees in Lakhs):

2009-2010	2010-2011	2011-2012
<input type="text"/>	<input type="text"/>	<input type="text"/>

7. Provide the postal address, telephone & fax numbers, and email address of the nearest service center.

8. A) Number of service engineers in the above location trained on the product quoted along with their educational qualification, certification and designation (applicable only for instruments) and B) Assured response time for service calls in hours:

A)

B)

9. What would be the delivery period in days from the date we place an official purchase order.

2. Enclose the list of customers to whom you have supplied “.....” during the last 3 years ending 31/03/2012 with full postal address and name of the contact person with phone, FAX numbers, and E-Mail id. Certificate regarding satisfactory performance of the “.....” from the minimum three end users should be furnished.

3. Are you the authorized dealer or distributor or reseller for the products quoted:

4. Have you supplied “.....” to National Institute of Technology, Tiruchirappalli in the last 3 years? If yes, specify the quantity supplied in the last 3 years and last PO reference

5. Was there any elapse or delay in supplying the goods ordered or any service related issue during the warranty period for the products ordered by NIT-T with your firm? If yes, provide details.

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6. On Manufacturer's Side to whom NITT have to contact in case of delayed supply and other issues committed by the authorized dealer / distributor / reseller :

Contact Person Name :	
Address :	
E-mail ID :	Telephone / Cell Phone :

DECLARATION

I/we have not tampered/modified the tender forms in any manner. In case, if the same is found to be tampered/modified, I/we understand that my/our tender will be summarily rejected and full Earnest Money Deposit (EMD) will be forfeited and I/we am/are liable to be banned from doing business with NIT, Trichy and /or prosecuted.

Signature of the Bidder :

Name and Designation :

Business Address :
.....
.....

Place :

Date :

Seal of the Bidder's Firm

SECTION : 3 SCHEDULE OF REQUIREMENTS, SPECIFICATIONS AND ALLIED DETAILS

Name of the Component to be procured : **Gas chromatographic Mass spectrometry (GC-MS)**

Specification for

Name of the : **Gas chromatographic Mass spectrometry (GC-MS)**

Component to
be procured

Specifications : **Specification of Gas chromatographic Mass spectrometry (GC-MS) :**

HYPHETHENATED THERMOGRAVIMETRIC ANALYSER (TGA) WITH GC MS

TG-GCMS for Evolved Gas Analysis

Both TGA and GC MS must be from the same vendor in order to get the future service and spares

A. TGA Specification

- Temperature Range: Room temperature to **1000°C**
- Heating Rate : 0.1° C to 200°C
- Vertical TGA should have Ultra Microbalance with **0.1 µg sensitivity**
- Weighing range up to 1200 mg including pan weight.
- The system should have Low Thermal Mass Furnace with built-in Platinum resistance heating elements. The furnace should have facility of auto calibration, auto clean furnace etc.
- The provision of ion sprays to avoid static change.
- Furnace should cool down to room temperature from 1000°C in less than 15 minutes with **built-in force air cooling**.
- Instrument must have **Mass Flow Controller**
- Built-in sleeve chamber for low convection effects.
- Balance assembly should have thermostating capability to minimize isothermal drift.
- Movement of Furnace should be software controlled. Furnace should be protected with chamber sleeve to avoid convection effects.
- Platinum Pans (2 Nos.) to be included in the main offer.
- TGA-GCMS transfer line for EGA to be included

B. GC MS Specification

GAS CHROMATOGRAPH MASS SPECTROMETER QUADRUPOLE (GCMS)

Gas Chromatograph:-

The instrument key pad must have graphical user interface should have Real-time graphic display of chromatogram,

a. Column Oven –

- Operating temperature range suitable for all columns and chromatographic separations. 5 degree C above Ambient to 450 °C.
- Maximum achievable temperature ramp rate must be **140 °C/min**
- Programmable pneumatic control (PPC) for injectors, detectors

b. Autosampler:-

- Sampling capabilities with 100 vials or more capacity in a single tray for 2 ml vials.
- Number of waste and wash vials: Four waste and four wash vials.

Auto sampler must have the capability to inject the sample on both injectors from the same place without removing or dismantling the system.

c. Injector-

Programmable Split/Split less capillary inlet (S/SL) with a provision for back flush device in the injector - **TWO Nos.**

- Temperature Range : must be the temperature range from **50 °C to 500 °C** in 1 °C increments with Three-ramps temperature program
- Heating rate of 1 °C/min to 200 °C/min or ballistic
- MS Vent must be quoted to help to change liners easily.

d. Detector:-

Flame Ionization Detector (FID) – **1 No.**

e. MS section:-

- Mass detector with EI with 250 L Single Turbo pumps with built-in Ion Gauge meter (Pump specification must be clearly mentioned in the original specification sheet/brochure. Below 250 L pump or dual pump specification will not be considered.
- Mass analyzer system: Quadrupole with prefilter
- Mass range: must be minimum 1-1100 amu or more so as to calibrate with Triazene Compound to get the highest mass range.
- Scan rate: Minimum 12,350 amu/sec or more with 0.1 amu step size
- Additional spare filament 1No. Must be quoted apart from the standard supply of 1 No. (Total 2Nos.)
- **Sensitivity** for EI with 1 pg of **Octa Fluoro Naphthalene (OFN)** must be **700:1** minimum for the **entire mass range** and not a specified mass range. You may please submit the same in literature.
- Capillary Columns: 2 Nos
- Library: NIST library
- System should have future up-gradation possibility for CI (both Positive and Negative Ion Source)
- Warranty: 1 Year
- Both TGA and GCMS must be from the same vendor in order to get the future service and spares
-

f. column split techniques accessory

Instrument must quote with column split technique to go to 3 detector in a single injection(Y splitter will not be acceptable)-. flow-switching and splitting applications
Column split techniques must have the following features

- Split chromatography between up to minimum 3 channels (detectors, MS, etc.)
- Splitter must be capable for additional sample information,
- back flushing for Remove unwanted compounds from the column after the analytes have eluted,

MS Isolation to Perform MS, column and inlet maintenance without venting the vacuum for less downtime, solvent venting to Vent unwanted solvent or other large peak from chromatogram.

g. Accessories

Quote all required accessories for TGA and GCMS for trouble free Operation

➤ **Ultra High Pure Helium Gas Cylinder (99.9995%) with dual regulators**

- High Pure Nitrogen gas with dual stage regulator,
- High Pure Hydrogen Gas Cylinder with dual stage regulator
- Zero Air gas cylinder with dual stage regulator
- Suitable Gas Purification filter with manifold for Hydrogen, Zero Air, Nitrogen and H₂
- 20KVA Online UPS(APC/Numeric) with One Hour Back (Optional)

C. GC with FID/TCD

Microprocessor based Gas Chromatograph with Programmable Electronic Control for complete

I Oven:

- Operating temperature range suitable for all columns and chromatographic separations C above Ambient to 450 °C.
- Programmable pneumatic control (PPC) for injectors, detectors
- Cool down time from 250⁰C to 50⁰C in 5 mins or less.

II Pneumatics:

- Programmable Electronic control for injectors and detectors with single point Control via software & touch screen
- Facility to compensate for variations in ambient temperature and pressure for

Maximum stability.

- Direct setting of split flow rates and ratios.
- Automatic leak testing and three ramp pressure program
- Pneumatic program rates 0-100.0 psi/min or 0-100.0ml/min² or 0-200.0 cm/s -min.

III Injectors (2 no.)

- a. Programmable Split/Split less Capillary Injector or PTV Injector with Pneumatic Control
- b. Packed Injector with Pneumatic Control for TCD

IV. Detectors:

- a. **Auto ignite FID**
- b. Software flow control of hydrogen and air, Auto ignition, flame out detection and Re-ignite with Best Linearity.
- c. **TCD (Thermal Conductivity Detector) with 6 port gas sampling Valve**

Capillary-column compatible/ Software protection to prevent filament burnout/ Ideal for series operation/1/8-inch fittings/ Conventional pneumatics – reference gas flow controller/ PPC pneumatic

software flow control of reference gas.

Minimum detectable Quantity: Typically < 1 ppm nonane

Linearity: > 105

Makeup gas: Not required for 0.32- to 0.53-mm i.d. columns with flows \geq 5 mL/min

Required for 0.25-mm or smaller i.d. columns

V. Accessories:

Quote all required accessories for GCFID/TCD for trouble free C

➤ **Ultra High Pure Helium Gas Cylinder (99.9995%) with dual regulators**

➤ Zero Air gas cylinder with dual stage regulator

➤ High Pure Hydrogen Gas Cylinder with dual stage SS regulators

➤ High Pure Nitrogen Gas Cylinder with dual stage SS regulators

➤ Suitable Gas Purification filter with manifold for Helium, Zero Air, Hydrogen, Nitrogen

➤ 5KVA Online UPS(APC/Numeric) with One Hour Back (Optional)

➤ 10 μ l, 5 μ l Syringes,

➤ Capillary Column @ 1 No

➤ Packed Column @ 1 No

D. GC with ECD/NPD

Microprocessor based Gas Chromatograph with Programmable Electronic Control for complete

I Oven:

- Operating temperature range suitable for all columns and chromatographic separations
C above Ambient to 450 °C.
- Programmable pneumatic control (PPC) for injectors, detectors
- Cool down time from 250⁰C to 50⁰C in 5 mins or less.

II Pneumatics:

- Programmable Electronic control for injectors and detectors with single point Control via software & touch screen.
- Facility to compensate for variations in ambient temperature and pressure for Maximum
- Direct setting of split flow rates and ratios.
- Automatic leak testing and three ramp pressure program
- Pneumatic program rates 0-100.0 psi/min or 0-100.0ml/min² or 0-200.0 cm/s -min.

III Injectors (2 no.)

- a. Programmable Split/Split less Capillary Injector or PTV Injector with Pneumatic Control for ECD/NPD
- b. Minimum 100 Sample Vial Auto sampler should be quoted as optional

IV. Detectors:

a. ECD (Electron Capture Detector)

High Sensitivity/High Operating temperature for maximum stability/Pneumatics for software control of make-up gas

Source: 15 mCi ⁶³Ni

Temperature protect: 470 °C by software

Carrier gas: Either Ar/CH₄ or N₂

Operating temperature: 100 °C to 450 °C in 1 °C increments

Minimum detectable < 0.05 pg perchloroethylene with

Quantity: argon/methane or nitrogen

Linearity: > 10⁴

Signal filtration: 200, 800 msec

Makeup gas: Standard

b. NPD (Nitrogen Phosphorous Detector)

Modular design/ Change bead in less than one minute/ Prealigned bead/ Rapid conditioning, up running in less than two hours/ 1/8-inch fittings/ Conventional pneumatics – pressure regulator for hydrogen, needle valve for air/ PPC pneumatics – software flow control of hydrogen and air
Operating temperature: 100 °C to 450 °C in 1 °C increments

Minimum detectable 5 • 10–14 g N/sec 2,4-dimethylaniline
 quantity: 5 • 10–14 g P/sec tri-butyl phosphate
 Linearity: > 104
 Signal filtration: 50, 200, 800 msec
 Selectivity: 50,000:1 (N/C) 10:1 (P/N)
 Input range: 1, 20
 Makeup gas: Not required

V. Accessories:

Quote all required accessories for GC ECD/NPD for trouble free

- **Ultra High Pure Helium Gas Cylinder (99.9995%) with dual regulators**
- **High Pure Nitrogen Gas Cylinders with dual stage SS regu**
- **High Pure Hydrogen Gas Cylinders with dual stage SS reg**
- Zero Air gas cylinder with dual stage regulator
- Suitable Gas Purification filter with manifold for Helium, Zero Air,Hydrogen,Nitrogen
- Branded PC(Dell/Lenova/HP) with HP laser printer
- 5KVA Online UPS(APC/Numeric) with One Hour Back (Optional)
- 10µl, 5µl Syringes,
- Capillary Column @ 2 No's
-

Minimum two installation references with contact details should be provided along with the bid.

Data Management System Specification	
Specification	Description
Computer	Must use a computer of known make
Operating System	Must run native in Microsoft Windows 7/8 OS
Software:	
Data Acquisition	Must be able to collect mass spectra simultaneously with up to two standard GC detector data (e.g., FID) in the same chromatogram.
Simultaneous Scan and SIM data	Must be able to acquire intermixed and time-overlapping full scan and SIM data for maximum sensitivity.
Data Workflow	Must be able to review quantitative peak identification in a single environment. This environment must include quantitation tables, calibration curves, raw spectra, background subtracted spectra, reference spectra from the quantitative method, ion ratios plots and calculations, and peak integration display.
MS libraries	Must be able to library search compounds from a chromatogram (commercially available or user generated) and use the information to construction quantitation methods.
Reporting	Must have built-in reporting functionality to generate industry-standard reports with the ability to customize report templates as necessary.

Both The TGA and GCMS with Connecting Interface from Same Vendor
 All the Suitable Gas Cylinders with Regulators Should be quote Separately
 Suitable Online UPS with 1 hour Back up has to quote separately

Quantity : 1

Any other : List attached
details/require
ment

Warranty : One year or more
period required

Delivery : 4 weeks after the purchase order
schedule
expected after
release of
purchase order
(in weeks)

EMD (in : **60000**
Rupees)

Performance : **5% of the equipment Cost**
Security to be
given by
Successful
bidder after
release of
purchase order
(in Rupees)

SECTION : 4 PRICE SCHEDULE

[To be used by the bidder for submission of the bid]

- 1. Component Name :

- 2. Specifications (confirming to Section 3 of Tender document-enclose additional sheets if necessary) :
- 3. Currency and Unit Price :

- 4. Quantity :

- 5. Item cost (Sl.No.3 & Sl.No.4) (in Indian Rupee) :

- 6. Taxes and other charges :
 - (i) Specify the type of taxes and duties in percentages and also in figures
 - (ii) Specify other charges in figures :

- 7. Warranty period (confirming to the Section 3 of Tender document. This should be mentioned in Technical bid also in order to get qualified for Financial bid) :
- 8. Delivery Schedule (confirming to the Section 3 of Tender document) :
- 9. Name and address of the firm for placing purchase order :

- 10. Name and address of Indian authorized agent (in case of imports only) :

Signature of the Bidder :

Name and Designation :

Business Address :
.....
.....

Place :

Date :

Seal of the Bidder's Firm

SECTION : 5 CONTRACT FORM

[To be provided by the bidder in the business letter head]

1. {Name of the Supplier's Firm) hereby abide to deliver theby the delivery schedule mentioned in the Section 3 tender document for supply of the items if the purchase order is awarded.
2. The item will be supplied conforming to the specifications stated in the tender document without any defect and deviations.
3. Warranty will be given for the period mentioned in the tender document and service will be rendered to the satisfaction of NIT, Trichy during this period.

Signature of the Bidder :

Name and Designation :

Business Address :
.....
.....

Place :

Date :

Seal of the Bidder's Firm

