

	<b>INDIAN INSTITUTE OF TECHNOLOGY MADRAS</b> <b>Chennai 600 036</b>  Telephone: (044) 2257 4872/5913 E-mail: msrrao@iitm.ac.in	
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Prof. M.S Ramachandra Rao  
Project Coordinator

Ref: PHY/2019/015/STORES  
Dated: 06.02.2020

Limited Tender No: PHY/2019/015/STORES

**Due Date: 26.02.2020, 5:00pm**

**Pre-Bid meeting: - Not required.**

**Technical Bid opening meeting on Due Date: 27.02.2020, 4:00pm**

Dear Sir/Madam,

On behalf of the Indian Institute of Technology Madras, offers are invited for the supply of “TOC analyser” conforming to the specifications given in (**Annexure-I**).

**Terms and Conditions of Limited Tender**

1. **Preparation of Bids:** - The Limited tenders should be submitted under **Two bid system** (i.e.) Technical- and -Financial bid.
2. **Delivery of the tender:** - The tender shall be sent to the below-mentioned addresses either by post or by courier (duly sealed and super scribed on the envelope with the reference No and due date) so as to reach the following address before the due date and time specified in our Schedule:  
**Prof. M.S Ramachandra Rao,**  
**Department of Physics**  
**IIT Madras**  
**Chennai - 600 036.**
3. **Price:** - The price should be quoted in net per unit (after breakup) and must include all packing and delivery charges to **Department of Physics.**
  - a. The offer/bid should be exclusive of taxes and duties. The percentage of tax & duties should be clearly indicated separately. IIT Madras is eligible for concessional GST and relevant certificate will be issued.
  - b. In case of import supply, the price should be quoted without custom duty. IIT Madras is exempted from levy of IGST on Imports and eligible for concessional custom duty (not exceeding 5%) and the price should be quoted on EX-WORKS and CIP (stating the Cost, Insurance, Freight separately) and indicating the mode of shipment.
4. **Terms of Delivery:** - The item should be supplied to our Departments as per Purchase Order. In case of import supply, the item should be delivered at the cost of the supplier to our Institution. The Installation/Commissioning should be completed as specified in our important conditions.
5. **Catalogue:** Original catalogue (not any photocopy) of the quoted model duly signed must accompany the quotation in the Technical bid
6. **Late offer:** - The offers received after the due date and time will not be considered
7. **Payment:** - No Advance payment will be made for Indigenous purchase. However, 90% Payment against Delivery and 10% after installation are agreed to wherever the installation is involved. In case of import supplies the payment will be made only through 100% Letter of Credit i.e. (90% payment will be released against shipping documents and 10% after successful installation wherever the installation is being done).

8. **Advance Payment:** - No advance payment is generally admissible. In case of specific percentage of advance payment is required, the Foreign Vendor has to submit a Bank Guarantee equal to the amount of advance payment and it should be routed through the Beneficiary Bank to the end user Bank. Otherwise, the Indian Agent of the foreign vendor has to submit a Bank Guarantee through a Nationalized Bank of India.
9. **On-site Installation:** - The equipment or machinery has to be installed or commissioned by the successful bidder within number of days (as prescribed by PI's) from the date of receipt of the item at site of IIT Madras.
10. **Warranty/Guarantee:** - The offer should clearly specify the warranty or guarantee period for the machinery/equipment.
11. **Validity:** Validity of Quotation not less than 60 days from the due date of tender
12. **Technical Bid Opening:** The technical bid will be opened on **27.02.2020, 4:00pm** at the Department of Physics, IIT Madras and the **financial bids** of those tenders who are technically qualified will be opened at a **later date under intimation to them.**
13. **Performance Security:** The successful bidder should submit Performance Security for an amount of 5% of the value of the contract/supply within 21 days from the issue of work/purchase order. The Performance Security should be furnished in the form of an Account Payee DD / FD Receipt from the commercial bank (or) Bank Guarantee from any nationalized bank in India.
14. **Accept /Reject:** IIT Madras reserves the full right to accept / reject any tender at stage without assigning any reason.
15. **Settlement of Disputes:** Any legal disputes arising out of any breach of contract pertaining to this tender shall be settled in the court of competent jurisdiction located within the city of Chennai in Tamil Nadu.
16. **Risk Purchase Clause:** - In the event of failure of supply of the item/equipment within the stipulated delivery schedule, the purchaser has all the right to purchase the item/equipment from other sources on the total risk of the supplier under risk purchase clause.
17. **Unsolicited offers:** "This notice is being published **for information only** and is not an open invitation to quote in this limited tender. Participation in this tender is by invitation only and is limited to the selected registered suppliers. Unsolicited offers are liable to be ignored. However, suppliers who desire to participate in such tenders in future may apply for registration as per procedure." The Website for Registration of vendors is <http://web.iitm.ac.in/supplier/> and the mail address for queries is "[workflow@rt.iitm.ac.in](mailto:workflow@rt.iitm.ac.in)".

Yours sincerely,

**Prof. M.S Ramachandra Rao,**  
**Department of Physics**  
**IIT Madras**  
**Chennai - 600 036.**

## ANNEXURE – I

### SPECIFICATION FOR TOC ANALYSER

<b>Description</b>	Supply, Installation, Training and Commissioning of Microprocessor/PC controlled TOC analyser with facility for direct measurement of Total Carbon(TC), Inorganic Carbon (IC), Total Organic Carbon(TOC) and Non Purgeable Organic Carbon (NPOC) in all types aqueous samples with following specifications and accessories. The system should have Provision for future upgradation with Total Nitrogen Module (in Liquids) by Chemiluminescence Method in future and to measure TC, IC & TOC in solid samples.
<b>Operating Principle</b>	Catalytic combustion oxidation/NDIR method at less than or equal to 700°C to analyse all the organic compounds including hard to decompose insoluble and Macro molecular organic compounds without salt interference.
<b>Operation method</b>	PC Controlled
<b>Measurement range</b>	Less than or equal to 4 ppb to maximum of 30000 ppm
<b>Measurement Accuracy</b>	High measurement Accuracy of 1.5%CV (max) for entire range.
<b>Measuring time</b>	3 to 4 minutes.
<b>Measurement Samples</b>	Liquid sample with suspended particulates up to 0.5mm
<b>Injection System</b>	Sample intake, sample injection, acid addition, dilution, flow line washing and drain should be automatic and internally done.
<b>Sample Injection</b>	Automatic Sample Injection using microliter syringe without using Auto sampler with suspended particle up to 500 µm.
<b>Sample Injection Volume</b>	Variable from 10 –2000 micro litre.
<b>IC treatment</b>	Sample pre-treatment like acidification and sparging should be automatic and internally done within the system.
<b>Dilution</b>	Dilution of unknown sample and calibration standard should be automatic and internally done with dilution factor of 2 to 50.
<b>Acid Sparging</b>	Automatic
<b>Carrier Gas</b>	High purity air cylinder, regulator and gas purification kit should be provided along with the system.
<b>Instrument background correction and check function</b>	Analyser should have built in ultra pure (Carbon free) water generation system, which enables to perform back ground correction/check function.
<b>Comprehensive Calibration system</b>	<b>a)</b> Calibration curves to be created to compensate for TC in water used for standard solution adjustment. <b>b)</b> Multipoint calibration curves to be created with single stock solution.
<b>Measurement features</b>	* Automatic settings for optimal measurement conditions. * Automatic reanalysis of out of range samples. * Automatic selection of best calibration curve. * Exclusion of anomalous values.
<b>Software</b>	Analyser should be provided with PC controlled Software
<b>Shutdown</b>	The system should have automatic power off system after electric furnace cool down.
<b>Warranty</b>	2 Years + 1 Year Non-Comprehensive AMC
<b>Additional requirements</b>	* Evident of Minimum 5 numbers of installations in the last 3 financial years with satisfactory performance certificates. * Minimum 5 Performance satisfactory certificates from the previous supply.