



**NATIONAL CENTER FOR COMBUSTION RESEARCH
AND DEVELOPMENT (NCCRD)
INDIAN INSTITUTE OF TECHNOLOGY MADRAS
CHENNAI – 600036, INDIA**

Ref. No. ICS/11-12/013/DSTX/TSUN

Date: 9 October 2013

Due date: 28 October 2013

Item name: CHNS/O Elemental Analyzer

1. Quotations are invited in duplicate for the various items shown overleaf (in Annexure I). The quotations duly sealed and superscribed on the envelope with reference no. and due date, should be addressed to the undersigned so as to reach on or before the due date mentioned above.
2. The quotations should be valid for sixty days from the due date and the period of delivery required should also be clearly indicated.
3. The total cost of the equipment in terms of CIP Chennai should be clearly mentioned.
4. Terms of warranty and guarantee should be explicitly mentioned.
5. Packing and delivery charges, customs and clearance duty should be clearly stated.
6. Goods shall not be supplied without an official supply order.
7. Local firms : Quotations should be for free delivery to this institute. If quotations for ex-godown delivery charges should be indicated separately.
8. Firms outside Chennai: Quotations should be for F.O.R. Chennai. If F.O.R. consignor station, freight charges by passenger train / lorry transport must be indicated. If ex-godown, packing, forwarding and freight charges must be indicated.
9. The rate of sales / general taxes and the percentage of such other taxes legally leviable and intended to be claimed should be distinctly shown along with the price quoted. Where this is not done, no claim for sales / general taxes will be admitted at any stage and on any ground whatsoever. The taxes leviable should take into consideration that we are entitled to have Concessional Sales Tax (CST) applicable to non-government educational institutions run with no profit motive for which a concession sales tax certificate will be issued at the time of final settlement of the bill.
10. Payment : Specify the mode of payment and if advanced payment has to be made. Every attempt will be made to make payment within 30 days from the date of receipt of bill / acceptance of goods, whichever is later.
11. IIT Madras is exempt from payment of excise duty and is eligible for concessional rate of customs duty. Necessary certificate will be issued on demand.
12. In case of any queries/clarifications, please contact Dr. R. Vinu, Chemical Engineering, IIT Madras, Chennai, at +91-44-22574187 (office), +91-9500158723 (mobile no.) and/or vinu@iitm.ac.in (e-mail).
13. The sealed quotation may be sent to

Dr. R. Vinu (Assistant Professor)

Department of Chemical Engineering, IIT Madras

Chennai – 600036

Phone: +91-44-22422525

Mobile: +91 9500158723

E-mail: vinu@iitm.ac.in



NATIONAL CENTER FOR COMBUSTION RESEARCH
AND DEVELOPMENT (NCCRD)
INDIAN INSTITUTE OF TECHNOLOGY MADRAS
CHENNAI – 600036, INDIA

Annexure I

Ref. No. ICS/11-12/013/DSTX/TSUN

Date: 9 October 2013

Due date: 28 October 2013

Item name: CHNS/O Elemental Analyzer

Component	Requirement
Elemental analyzer for the analysis of C, H, N, S, O in solid and liquid samples	System based on dynamic flash combustion and gas chromatography-thermal conductivity detection of C, H, N, S, O Gas flows should be controlled by electronic flow controllers (EFCs) Detector analysis range: 0.01 - 100% for C, H, N, S and O Sample size range: 0.01 - 100 mg Analysis time: less than 15 min Data accuracy range: 100 ± 10 ppm to 90 ± 0.4 %
Autosampler	Yes, required for solid samples with a minimum of 30 samples
Others	Include gases (He, O ₂), gas cylinders, regulators, gas panels Include standard accessory kit Include reference samples for validation of CHNSO
Consumables	Include standard consumable kits with containers, oxidation/reduction reactor, pyrolysis reactor, adsorption trap, reference chemicals that is suitable for atleast 1000 analysis of C, H, N, S and O
Support	2 year warranty with possible AMC after the 2nd year Should provide complete technical support
Software	Provide software CD and software should be compatible with Windows 7 or 8 OS. Desktop PC or laptop – to be provided. Software should be capable of doing a complete analysis including data acquisition, processing, reprocessing, data report and comparison with standard library. Power supply: 230 V, 50/60 Hz.