



Indian Institute of Science Education and Research (IISER) Mohali
(Established by Ministry of Human Resource Development, Govt. of India)
Knowledge City, Sector 81, SAS Nagar, Manauli 140 306, Mohali (Punjab)

IISER Mohali is inviting quotes for the purchase of C,H,N analyzer for the Department of Chemical Sciences.

Technical and financial bid should be quoted in separate sealed envelopes and labeled. Please send both envelop sealed in a large envelope to:

Assistant Registrar
Purchase Section
IISER Mohali, Knowledge City
Sector 81, SAS Nagar, Manauli PO 140306 (Punjab)

Technical Specifications for CHN analyzer

Vertical system, with fully PC controlled operating mode and data handling including auto ready and diagnostics. Simultaneous single run analysis for C,H,N.

Detection principle and Detectors: Chromatographic column separation and oxygen excess proof thermal conductivity detector (TCD) or IR detectors or combination of both.

Reactor system: Double column system for oxidation and reduction.

Furnace: (i) Quartz combustion tube. Oxidation and reduction furnace temperature from 100-1100 °C or higher.

(ii) Combustion Temperature: 1800 °C.

(iii) Temperature accuracy: $\pm 1\%$ of set point.

(iv) Warranty: Minimum 10 years of warranty on furnace.

Sample: (i) Sample type: Solids and liquids

(ii) Sample Size: minimum 0.01 mg and above

(iii) Sample preparation accessories for solid and liquid samples. Sample preparation method must ensure complete exclusion of trapped ambient air.

(iv) Easy calibration for proper quantitation. Standard organic and inorganic samples for calibration must be provided separately.

Gases: (i) Supply of all the necessary gas equipments (cylinders, regulators, SS tubings, drying columns for these gases etc.) and their installation has to be carried out by the vendor.

(ii) Carrier gas He (GC grade)

(iii) Combustion oxygen injection and O₂ kit must be included. Most advanced oxygen injection controlled either by jet dosing or thermoregulated. The gas cylinders of desired purity must be supplied by the vendor along with the necessary regulators and SS tubing.

(iv) Zero air as pneumatic gas.

Handling of air and moisture sensitive samples: Accessories for safe and effective handling/sample preparation of air and moisture sensitive samples must be provided by the vendor.

Auto sampler: Minimum 60 tray auto sampler.

Analytical measuring range: 0.01% (100 ppm) to 100% for C, N, and H.

Sensitivity: less than 1µg for CHNS.

Accuracy: for CHN 0.15% absolute and 0.15% relative.

Precision: 0.30 to 0.05% based on 3σ.

Analysis time: CHN < 3 min. CHNS < 5 min.

Additional requirements: (i) The vendor must list micro balances (with model and make) compatible with the equipment quoted.

(ii) List of Users in Government Organizations: A list of users, of the proposed system, in government organizations with full contact details and the age of installations for each of them must be mentioned separately.

(iii) An authorization certificate from the principal manufacturer should be provided.

Other general comments:

1. Accessories/Consumables: Accessories and consumable items must be quoted separately. Vendor must ensure on-time supply of accessories for future order. Sample preparation accessories for 3000 solid samples. Sample preparation accessories for 2000 liquid samples.
2. Computer and Printer: A computer from a reputed company with latest configuration: i7 processor, 3.0 GHz speed, 500 GB HDD, 4 GB DDR, CD/DVD combo drive, 19" TFT color monitor, Graphic adaptor card with most up-to-date configuration, authentic WINDOWS based system with license ready to be used with the equipment.
3. Power rating of the quoted model has to be mentioned in the quotation by the vendor in order to provide minimum 60 minutes back-up using an on-line UPS.
4. Manuals and User's Guide: All manuals in printed and bound form and in CD/DVD with instruction sheets must be supplied in English for training, maintenance and for service engineer's reference.
5. Warranty and Annual Maintenance Contract: A warranty for a minimum period of 2 years from the date of completion of installation is required. A separate annual maintenance contract for an additional period of 5 years should be quoted separately which will be effective after the completion of warranty.

6. Service Facility in India: Vendor should clearly mention their service facility in India with a total of available service engineer for this region. Vendor must also ensure prompt response and availability of a trained service engineer on the system.
7. Required pre-installation information should be communicated as needed.
8. Proper demonstration and training of the users with standard and in-house samples will qualify the completion of the purchase.