



University of Mumbai - Department of Atomic Energy  
**CENTRE FOR EXCELLENCE IN BASIC SCIENCES**  
Nalanda, University of Mumbai, Vidyanagri Campus, Santacruz (E),  
Mumbai 400098.

Web: [www.cbs.ac.in](http://www.cbs.ac.in)

email: [purchase@cbs.ac.in](mailto:purchase@cbs.ac.in)

Tender No. CBS/CA025-018

Date : April 17, 2026

Dear Sir/Madam,

Please send us your lowest quotation for the following requirements:

Sr. No.	Description of Material	Qty.
1.	Thermal gravimetric Analyser (TGA) with DTA As per the specifications attached in Annexure I	01

**Note :**

1. You are requested to submit the tender in two parts i.e. technical and financial bids in separate envelope.
2. Prebid Meeting to be held on April 28, 2026 at 2.30 am in UM-DAE CEBS, Nalanda University of Mumbai, Kalina Campus, Santacruz (East), Mumbai - 400098.

Your quotation should indicate make, delivery period, exact taxes applicable and delivery charges, if any. CEBS is an educational institution hence, kindly give an educational discount. **Quotation to be submitted in a sealed envelope** duly superscripted with enquiry No. and date. Your GST Registration Number should be quoted in the quotation.

The due date for submitting your offer against this enquiry is May 12, 2026.

**Specifications:**

Thermogravimetric analysis (TGA) is required for both fundamental research and routine laboratory experiments at undergraduate level. Facility will be useful for M.Sc. and Ph.D. students across the different schools of CEBS i.e. Chemistry, Physics and Biology. According to the requirements of different users, specifications are designed for analyzing the samples in wide temperature range (roughly upto 1500 °C), with high TGA and DTA sensitivity. These specifications can cover several kinds of research applications of different groups having organic, inorganic samples.

**Revised Specifications for TGA-DTA**

**(1) A robust furnace, balance and its temperature control system**

- **Furnace design:** It should be with ceramic protection and Pt/Ir or Pt/Rh heating elements and with temperature sensor to ensure best temp accuracy and precision. Temperature sensor can be of Cr/Al, or Pt/Pt-Rh or any other metal alloy (Protected thermocouple).
- **TGA balance design:** TGA system/unit shall be either vertical or horizontal design with dual pans capability. Loading capacity in the range 1.0 -2.0 g or more, mass measuring range  $\pm 200$  to  $\pm 300$  mg, auto-tare facility and sufficient lead balls for mass balance.



- **Temperature range:** Room temperature to 1500°C or more to cover variety of applications
- **Programmable heating rate:** 0.1 to 50°C/min or better
- **Temperature accuracy:** within +/- 0.1C- 0.5C
- **Thermocouple:** Protected thermocouple.
- Built-in calibration system
- **TGA Sensitivity:** 0.2 microgram ( $\mu\text{g}$ )
- **DTA measurement range:** +/- 1000  $\mu\text{V}$  or better, Type-S easy fit DTA rod, provision for simultaneous measurement of TG-DTA signals.
- **DTA sensitivity:** 0.10 microvolt ( $\mu\text{V}$ )
- **Cool down time:** TGA system shall cool down from 1000 C to 50 C less than 20 minutes with built in air cooling or chiller
- **Furnace movement:** Should be software controlled
- **TGA balance accuracy:** +/- 0.1% or better
  - **Gas flow system:** Inert ( $\text{N}_2$ , Ar, He) or oxidative (Air,  $\text{O}_2$ ), Flow rate ranging from 0 to 200 ml/min or better, with separate mass flow controllers for furnace gas, carrier gas and auxiliary gas.
- **Sample crucible:** Al (500 Nos.), ceramic (10 Nos.), Pt (10 Nos.) with lid, volume should be approximately 80  $\mu\text{l}$ .
- **Sample load:** 0.05 mg to 50 mg or better
- **Power supply:** 230V/50 Hz
- Total load capacity of balance
- **Chiller unit:** Appropriate chiller unit sufficient to maintain the ambient temperature of the unit at 25-30°C at the highest operating temperature viz., 1500°C should be provided (if required).
- Vacuum Manifold: Suitable rotary vane pump (230V - 50/60 Hz) for primary level vacuum with Pirani gauge should be provided.

(2) **Standard accessories for calibration:** Standard sample 1 set:  $\text{Al}_2\text{O}_3$ ,  $\text{CaC}_2\text{O}_4\cdot\text{H}_2\text{O}$  or metal samples, Standard counterweight 1 set: 1mg, 2mg, 5mg, 10mg, 20mg, 50mg, 100mg, 200mg, 500mg Standard tools 1 set: Micro-spatula, cross screwdriver, precision cross Screwdriver, pan correction, reference materials for TGA calibration by Curie point etc. Standards DTA Calibration: For temperature and enthalpy calibration a set of standards for Alumina and platinum crucibles should be provided.

(3) **Data Acquisition, software:** Computer i7 with latest configuration should be provided with 22 inch monitor; Standard licensed software having features such as: Measuring condition input, temperature programming, Measurement start, hold, end, Dynamic TG software, Stepwise isothermal analysis method, Dynamic rate control method, Constant rate control method, TG weight loss rate, temperature at optional point, extrapolation temperature, differential curve DTA Area, temperature at optional point, extrapolation temperature, Temperature calibration, etc.

(4) **Any other item:** Items such as chiller, UPS, analytical balance etc. should be quoted as optional items.

(5) Sensors and any other accessory required for DSC measurement should also be quoted as optional item.



(6) **Warranty:** Three years.

(7) Supply of the instrument installation and commissioning of the equipment at the users' site, demonstration of the instrument at users' site, statement for service support after satisfactory installation and demonstration at the site.

(8) **Other optional items (spare parts):** To be quoted separately and item-wise.

1. One extra TG-DTA rod
2. Platinum DTA cup: 6 nos
3. Alumina DTA cup: 50 nos
4. Quartz DTA Cup: 10 nos
5. Graphite DTA cup: 20 nos
6. Real view camera

### 9. Terms and Conditions

- a) The entire system should be of single principle(s) (manufacturers) and quotation should be provided by their authorized distributor only. Authorization certificate from OEM shall be furnished.
- b) *Users list:* Should provide minimum 3 no's of Performance Certificates (not older than 2023) of similar systems from Premier government institutes, State/Central Universities, CSIR Labs, IITs, TIFR, BARC etc.
- c) List of Users of the Quoted System with Phone no, Email id should also be enclosed
- d) *On-site Training & Demonstration:* Operational training & demonstration programme should be provided onsite by the vendor as and when required by the user scientists
- e) The offer should clearly mention the Part No and Model Quoted along with the technical specifications. Original brochures and specification sheets should be enclosed in the technical bid of the offer.
- f) Compliance report to be submitted in a tabulated and point wise manner clearly mentioning the page number of original catalogue / data sheet.
- g) Vendor should provide a copy of Site-Preparation checklist

