



# Indian Institute of Technology Madras

I.I.T.P.O., MADRAS-600 036

DEPARTMENT OF CIVIL ENGINEERING

## (Modified)Form for Inviting Quotations

Ref.No.CIE/INDU/2017/ Thermo Gravimetric Analyser

Date: 21/09/2017

To

SPEED POST

Dear Sirs,

DUE DATE: 05/10/2017

1. Quotations are invited in duplicate for the various item/ s shown below/overleaf/enclosed list.
2. **The Quotations duly sealed and superscribed on the envelope with the reference No. and due date, should be addressed to the undersigned and contain in 2 bid system i.e. Technical bid and commercial bid in two separate envelopes should be enclosed in a single envelope only so as to reach on or before the due date stipulated above.**
3. The Quotations should be valid for (60) **Sixty days from the due date and the period of delivery** required should also be clearly indicated.
4. If the item is under DGS&D Rate contract No. and the price must be mentioned. It may also please be indicated whether the supply can be made direct to us at the Rate contract price (Please note that we are not Direct Demanding Officers). If so please send copy of the RC.
5. Relevant literature pertaining to the items quoted with full specifications(and drawing, if any) should be sent along with the Quotations, wherever applicable. Samples if called for, should be submitted free of charges, and collected back at the supplier's expenses.
6. Local Firms : Quotations should be for free delivery to this Institute. If Quotations for Ex-Godown delivery charges should be indicated separately.
7. Firms Outside Madras : Quotations should be for F.O.R. Madras. 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.
8. 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 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.
9. Goods should be supplied carriage paid and insured.
10. Goods shall not be supplied without an official supply order.
11. Payment : Every attempt will be made to make payment within 30 days from the date of receipt of bill / acceptance of goods, whichever is later

Details as per enclosed list.

Yours faithfully

  
INDUMATHI M NAMBI

- Note: (i) Quotation should be sent by SPEED POST only or to be delivered directly concerned  
(ii) Firms are requested to submit the specifications of their product along with supporting technical Documentation/brochure instead of reproducing the specifications sent by us.

## Technical specification for TGA Analyzer with temperature up to 1000 °C

- Balance to be of top-loading design to allow ease of sample loading and operation
- The furnace must be made of a material which is corrosion-resistant
- The instrument should be designed so that the furnace and balance are isolated from operators
- An Integrated mass flow controller for monitoring and controlling purge flow rates must be included as standard
- The balance should be protected from the reactive sample purge gas as well as materials evolved by the sample
- The following cooling times are necessary: 1000 to 100°C in less than 8 minutes and 1000 to 30°C in under 15 mins

Temperature range: Minimum 20 °C to 1000 °C

Scanning rates: 0.1 to 200 °C/min

Temperature accuracy:  $\pm 1$  °C

Temperature precision:  $\pm 0.8$  °C

Sample temperature precision:  $\pm 0.3$  °C

Sample to program temperature correlation:  $\pm 0.5$  °C

TGA balance type: Top-loading balance

Furnace and balance isolated from operators to minimize maintenance, ensuring uptime

Balance capacity: Minimum 1400 mg or better

Balance digital resolution: 0.2  $\mu\text{g}$

Balance sensitivity: 1  $\mu\text{g}$

Balance accuracy:  $\pm 0.02\%$

Balance precision:  $\pm 0.01\%$

Baseline dynamic drift :  $< 50 \mu\text{g}$  50 to 1000 °C at 20 °C/min with empty pan

Sample pans: Ceramic Pans or equivalent to be quoted minimum 9 Nos

Atmosphere: Static or dynamic, including nitrogen, argon, helium, carbon dioxide, air, oxygen or other inert or active gases over full temp range. Inert furnace design allows a wide choice of gas types must be with integrated Mass flow controller

Instrument must be future expanding possibility with same manufacturer's FTIR as TG-IR and GC MS as TG GC MS for evolved gas analysis

Installation & Demonstration: Free of Cost

Warranty: one year



Dr. INDUMATHI M. NAMBI  
Associate Professor  
Environment & Water Resources Division  
Department of Civil Engineering  
Indian Institute of Technology Madras  
Chennai - 600 036, India