



Enquiry No – CE/TE/DTD/02/2016-17

Date: 23/02/2017

Sub: Call for quotation for supply and installation of Simultaneous DTA-TGA-DSC equipment

Dear Sir,

Sealed quotations (Technical and Financial bids separately) are invited from authorized suppliers for item and their specifications given below before 10-03-2017

The quotation for supply and installation of **Simultaneous DTA-TGA-DSC equipment** should be sent in two parts in sealed envelopes, clearly marked as "**Technical Bid**" and "**Financial Bid**". The Technical Bid should contain detailed technical specifications of the product being offered and **should not mention any prices**. The Financial Bid should include the detailed price quotation clearly, including the cost of the equipment, taxes, service charges, shipping and handling charges, if any. Our organization is an educational institute of repute and liable to get maximum education discount from manufacturer. Please specify it, separately.

Simultaneous DTA-TGA-DSC equipment specifications

Simultaneous DTA-TGA-DSC with following features is required for thermal measurement of both heat flow and weight changes in a material as a function of temperature or time in a controlled atmosphere. Simultaneous DTA-TGA-DSC should provide DTA data in degrees Celsius or milli volts along with simultaneous measurements of weight change (TGA) and true differential heat flow (DSC) on the same sample from ambient to 1400 °C or more. Same unit should also be capable of simultaneously measuring true, quantitative real time DSC signal. Equipment should be capable of continuing the experiments even if computer goes off-line.

Specifications and features

- | | | |
|-------------------------------------|-----|--------------------------------|
| 1. Sample capacity | - | 200 mg or higher |
| 2. Temperature range | - | 1400 deg. C or above |
| 3. Temperature calibration | - | 5 points |
| 4. Temperature repeatability | - | ± 0.1 deg. C (metal standards) |
| 5. Furnace cooling | - | Air/water |
| 6. Temperature accuracy | - ± | 0.3 deg. C or below |
| 7. Weight balance (TGA) sensitivity | - | 0.1µg or less |
| 8. DTA sensitivity | - | 0.001 deg. C or less |
| 9. DSC sensitivity | - | 4 µW or less |

10. Built-in mass flow controller and gas switching accessory - complete installation and assembly (installation of pressure tubing with pressure gauges from cylinder to instrument to be done by the supplier)
11. Touch screens displays -External equipment/experiment control options (other than through computer)
12. Standards accessories should be included - Ex. Calibration materials, metal standards and crucibles [Reusable crucibles (8 nos. min), disposable pans with lids (Alumina pans – 100 nos. min) etc.] and any additional accessories necessary for conducting experiments.
13. Evolved gas analysis -Instrument should include furnace compatible with devices for connecting to FTIR or MS
14. Reactive purge gas -Option to introduce reactive purge gas (without contamination and with appropriate protection to balance assembly and electronics)
15. Software for data interpretation and analysis -
 - a. Operating and analysis software (windows operating system) for evaluation of thermal analysis data. Should have specific analysis functions which includes temperatures of transitions (melting and glass transition), heats of fusion/reaction, dynamic normalization, weight loss or gain, weight % at temperature, weight loss at temperature, moisture-free/ash-free calculation, residue analysis etc. Capabilities should also include peak integration, partial areas, onset temperature, step transition, running area integral plots, data point value, tabular data report, results report generation etc. Software should also include facilities like selecting a region of a curve, smoothing of curves, curve subtraction, divide/multiply, 1st derivative, 2nd derivative, drift correction, calculation of integral curve, auto-evaluation (user-defined macros) and conditional experiment termination.
 - b. Quote separately for advanced software package if any (optional) for determining the kinetics of decomposition based on TGA data taken at several heating rates.
 - c. Also quote separately for different software packages for calculating enthalpy, Kinetics, heat capacity, baseline subtraction, calibration etc.

Kindly arrange to send the sealed quotation(s) to the following address: Syam Nair, Transportation Engineering Laboratory, Department of Civil Engineering, IIT Kanpur, 208016 by **10-03-2017 up to 4 pm.**

Terms and conditions:

1. If the Financial Bid is included in the Technical Bid, then the quotation will be rejected.

2. Please respond to specific details as asked for in tender document. If it is found that specifications given in tender is copied and placed in submitted technical bid, the quotation will be considered incomplete and will not be considered any further.
3. Your quotation shall contain Authorization Letter from manufacturer.
4. Quoted prices should include all taxes at rates that are applicable to IIT Kanpur
5. Equipment should have a minimum warranty of 1 year for all parts and labor. DSC cell and furnace should have a minimum warranty of 3 years
6. Vendors should demonstrate the details of a minimum of 3 internationally reputed academic/ research institutions where the quoted equipment has been supplied in the last two years. Contact information (telephone numbers) of the lab-in-charge/faculty-in-charge of these institutions should also be furnished
7. Quotation must be valid for a minimum of 45 days.
8. Delivery period should not be more than **6 weeks** and delivery should be made at IIT Kanpur. All related paper works and expenses (shipping, insurance, etc.) will be the responsibility of supplier
9. Submit complete details of the product(s) including brochure, manuals etc. with the quotation.
10. AMC rates for the equipment after end of warranty period (excluding parts) should be included along with the quotation. Decision to pursue AMC or not will be made by IIT Kanpur
11. The firms may also quote for optional accessories which will extend the capability or ease of use of the equipment.
12. All quotations should be in the currency of the country of origin of the instrument and also converted to Rupee (₹) as per prevailing rates.
13. Normal payment terms for the Institute will be applicable (90% on delivery of the items and the remaining 10% after satisfactory installation/ inspection).
14. The Institute is exempted from excise duty and pays a nominal customs duty of ~5% under Govt. of India notifications 10/97 and 51196, respectively. Custom Duty exemption certificate under notification 51196 and road permit will be provided if applicable.
15. The Institute reserves the right for accepting and rejecting any quotations without assigning any reason thereof. **Also, the Institute reserves the right to reject or accept all or any of the offers made above.**

Thanking you
Sincerely,


(Manoj Kumar)

Phone: 91- 0512- 2597478

Fax: 91-512-2597395

Email: kmanoj@iitk.ac.in
