Metallurgical and Materials Engineering (MME)
National Institute of Technology
Tiruchirappalli

Tender No.6/2007

Item No. 6. MME Thermal Analyzer

Simultaneous Thermal Analysis System

- Furnace type : top loading and unloding in manual and automatic
- TGA should have ultra Microbalance with minimum 0.1 µg sensitivity with top load design.
- Furnace should cool down to room temperature from 1000 °C in less than 25-30 minutes with built-in forced air cooling.
- Thermocouple Pt-Pt/Rh.13% (Type R)
- System should have heating and cooling rates from 0.1 to 100°C/min.
- TGA and DTA should operate upto 1000°C. The flexibility to be provided from 15°C onwards as upgrade.
- Temperature reproducibility <+/-0.5°C
- Temperature accuracy <+/-0.5°C
- There should be provision for cooling attachment in the system.
- Sample size capacity should be around 1450-1500 mg.
- Balance sensitivity 0.1µg
- The system should have built-in DTA mode with simultaneous scanning facility in single run.
- DTA signal should have provision to convert into DSC mode/signal for quantitative studies.
- Calorimetric precision should be less than $\pm$ 2%.
- All the three curves/parameters like TGA/DTA/DTG or DSC to be displayed on single screen.

- Integrated mass flow gas control and switching for accurate environmental control
- 10 $Al_2 0_3$ / ceramic and 3Pt cups included with unit.
- Reference Materials for DSC and TGA calibrations to be included.
- Sample atmosphere , inert and Oxidising
- Computer with advanced configuration and Printer
- The system should be compatible with Windows XP Pentium IV based PC with CD-ROM drive.
- Software should be using Windows XP environment and should have all the parameters for Instrument Control, Method Storage, Multi Ramp capabilities, various calculations like Tm, Tg, Peak Area, Calibration Onset, OIT calculations, direct control of analyser, display of multiple curves on single screen, on-line help, various tool bars for calculations, flexibility to upgrade with Network, peak search, Delta Y and X, Multiple Y-Axis, Method Validation, user customisation of various graphs etc.
- Additional features in the software is welcomed