



Indian Institute of Technology Kanpur

Advanced Center for Materials Science

Enq. No.: ACMS/ AU/ 2012-13/ E-9

Enquiry Dated: March 02, 2013

Closing Date: March 18th, 2013

ACMS requires the quotation for **Thermal measurement system consisting of Differential Scanning Calorimetry (DSC), Differential Thermal Analysis (DTA) and Thermo-gravimetric Analysis**. The specifications for the equipment are in the addendum. The closing date for the above item is **March 18th, 2013**.

The prospective suppliers are required to send quotation in two parts in sealed envelopes, as “Technical Bid” and “Financial Bid”. The Technical Bid should contain detailed technical specification 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 if any, shipping and handling charges. The two separate and sealed envelopes should be clearly marked appropriately as “Technical Bid” and “Financial Bid”.

Terms and Conditions:

1. Maximum education discount, if any should be offered
2. Validity of quotation should be at least for 60 days
3. Prices should be on CIF and FOB separately (if imported)
4. Prices should include the installation and training cost
5. Warranty should be for at least three years after installation
6. Normal payment terms for the Institute will be applicable (90% on delivery of the items and the remaining 10% after satisfactory installation/ inspection)
7. Quotation should carry proper certifications like agency certificate, proprietary certificate, etc.
8. An undertaking that the vendor will supply all the spares and services for the equipment for at least 5 years from the date of commissioning
9. Delivery must be within 6 months (updated March 7th, 2013)

Kindly send the Technical and Financial bids in sealed envelopes latest by 18th March 2013 by 5pm, to:

Dr. Anish Upadhyaya
Head, Advanced Center for Materials Sciences
IIT Kanpur, U.P. 208016, India.
e-mail: anishu@iitk.ac.in

Technical Specifications for Thermal Analysis System

Differential Scanning Calorimetry (DSC)

Parameter	Specifications *
Furnace Design	<ul style="list-style-type: none"> • Double furnace design
Calorimetric range	<ul style="list-style-type: none"> • 1300 mW or better
Calorimetric Sensitivity	<ul style="list-style-type: none"> • 0.2 micro-Watt or better
Precision	<ul style="list-style-type: none"> • Better than $\pm 0.03\%$
Reference Samples	<ul style="list-style-type: none"> • Include Indium and other reference samples
Temperature range	<ul style="list-style-type: none"> • -150 to 700 °C or better
Temperature Accuracy	<ul style="list-style-type: none"> • Better than ± 0.06 °C
Temperature precision	<ul style="list-style-type: none"> • Better than ± 0.010 °C
Data Scan Rate	<ul style="list-style-type: none"> • 80 data points per second
Heating rates	<ul style="list-style-type: none"> • 0.01 to 600 °C/min or better
Cooling rate	<ul style="list-style-type: none"> • 0.01 to 600 °C/min or better
Accessories	<ul style="list-style-type: none"> • Include accessories for cooling upto -150 °C • Include accessories related to gas supply (regulator, gas-filter, gauge) • Include sample pans, crimping tool, sample handling tools, pan-holder cover straightener
Power Requirements	<ul style="list-style-type: none"> • 220V/ 50Hz
Supporting software	<ul style="list-style-type: none"> • The instrument should be installed with latest available version of software for control, operation and analysis. • The supplier should upgrade the software as and when the upgradations become available for at least five years from installation • Should have intelligent calibration logic • Continuous automatic hardware diagnosis
Computer and Printer	<ul style="list-style-type: none"> • The equipment should come with a high performance computer with all the requisite software installed on it • Minimum Configuration: Intel dual core processor, 4 GB RAM, 500Gb Hard Disk, 24" Display with other essential peripherals • Laser printer should be provided with the computer
Safety Norms	<ul style="list-style-type: none"> • The instrument should include safety devices for protection against vacuum, water , power etc • The instrument should be compliant with international norms for safety and environment
Installation, Commissioning and Training	<ul style="list-style-type: none"> • The delivery of the equipment should be considered complete only after successful commissioning of the instrument • The pre-installation requirements should be communicated to IIT Kanpur well in advance of the installation • The Installation, commissioning and training should be done only by well trained factory engineers • The supplier should provide training to at least two candidates at the installation site to make them familiar with smooth operation of the instrument
Guarantee	Preferably 3 years
After-sales Service	<ul style="list-style-type: none"> • The supplier should provide a prompt after-sales service such

Technical Specifications for Thermal Analysis System

	<ul style="list-style-type: none"> as regular instrument maintenance, troubleshooting and fixing • The list of service centers in India should be included.
Spares	<ul style="list-style-type: none"> • List of standard spares to be provided for each year starting from 1st to 5th year along with cost and discounted rates • An undertaking that the vendor will supply all the spares and services for the equipment for at least 5 years from the date of commissioning
Annual Maintenance Cost	Include the cost of annual maintenance for each year for five years after the guarantee/ warranty period. Provide the amount and the terms, Note that those providing better after sales service and support with written evidence will be given preference
<p>*Additional optional accessories should be indicated separately along with their price. The above specs are desirable and the actual numbers achievable for your system should be indicated.</p>	

Thermo-gravimetric Analysis (TGA) and Differential Thermal Analyzer (DTA)

Parameter	Specifications*
TGA and DTA should be preferably coupled in one equipment	
Temperature Range	• Ambient to 1600 °C
Sample Holder Material	• Platinum
Weight balance resolution	• 0.3 micro-gram or better
Weight Balance measurement range	• Upto 1500 mili-gram
Heating Rate	• It is desirable to have 0.1 to 100 °C/min
Cooling Rate	• It is desirable to have 50°C/min
Temperature accuracy	1 °C or better at all temperatures
Calorimetric accuracy	± 5% or better at all temperatures
Balance precision	± 0.3 % or better
Thermocouple	Pt/Pt-Rh (Include 2 extra thermocouples in the package)
Sample Pans	Should be made of refractory material
Mass Flow	Controller for mass flow should be included
Calibration samples	Include calibration samples (Indium, Gold, Palladium)
Power Requirements	• 220V/ 50Hz
Accessories	<ul style="list-style-type: none"> • Include accessories for cooling upto ambience • Include accessories related to gas supply (regulator, gas-filter, gauge) • Include sample pans, crimping tool, sample handling tools, pan-holder cover straightener
Supporting software	<ul style="list-style-type: none"> • The instrument should be installed with latest available version of software for control, operation and analysis. • The supplier should upgrade the software as and when the upgradations become available for at least five years from

Technical Specifications for Thermal Analysis System

	<p>installation</p> <ul style="list-style-type: none"> • Should have intelligent calibration logic • Continuous automatic hardware diagnosis
Computer and Printer	<ul style="list-style-type: none"> • The equipment should come with a high performance computer with all the requisite software installed on it • Minimum Configuration: Intel dual core processor, 4 GB RAM, 500Gb Hard Disk, double 24” Display with other essential peripherals • Laser printer should be provided with the computer
Safety Norms	<ul style="list-style-type: none"> • The instrument should include safety devices for protection against vacuum, water , power etc • The instrument should be compliant with international norms for safety and environment
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