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Centre for Sustainable Technologies

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Ref: CST/IISc/TGA-2024

Tender notification for the procurement of a Thermogravimetric Analyzer

Last date of submission: 29.07.2024

Kindly send your best quotation for a “**Thermogravimetric Analyzer**” with the technical specifications/general compliance mentioned below. The quote should come only from an **Indian Original Equipment Manufacturer (OEM), fabricator or their Indian authorized distributor/representative. Resellers shall not participate.** The quotations should be on FOR-IISc Bangalore basis in INR. The Bidder should belong to either **Class-1 or Class-2 suppliers** distinguished by their “local content” as defined by recent edits to GFR. They should mention clearly which class they belong to in the cover letter. a) Class-1 supplier: Goods and services should have local content of equal to or more than 50%. b) Class-2 supplier: Goods and services should have local content of equal to or more than 20 % and less than 50%. Bidders offering imported products will fall under the category of non-local suppliers. They cannot claim themselves as Class-1 local suppliers/Class-2 local suppliers by claiming services such as transportation, insurance, installation, commissioning, training, and other sales service support like AMC/CMC, etc., as local value addition. Purchase preference as defined by the recent edits to GFR (within the “margin of purchase preference”) will be given to the Class-1 supplier.

MSMEs can seek an exemption to some qualification criteria. IISc follows GFR2017 for such details.

Technical specifications for Thermogravimetric Analyzer

The Surface Area and Pore Size Analyzer is an essential tool used in various fields to measure the surface area, pore size distribution, and porosity of materials

Procedure:

1. The tenderer should submit the technical and financial bids separately in sealed envelopes superscribing the envelopes as ‘Technical bid’ and ‘Financial bid’. Both these envelopes must be put into a single envelope, superscribed ‘TENDER FOR:

THERMOGRAVIMETRIC ANALYZER”. This should reach the following address by 4 PM on 29.07.2024.

Attn: Dr. Souradeep Gupta
Room 209,
Centre for Sustainable Technologies (Near Maramma temple gate)
Indian Institute of Science,
Bengaluru, Karnataka - 560 012

Soft copies are to be mailed to souradeep@iisc.ac.in with the subject line ‘TENDER FOR: Thermogravimetric Analyzer’.

2. The technical proposal should contain a technical compliance table with 4 columns.
 - a. The first column must list the technical requirements and other requirements, in the order that they are mentioned below.
 - b. The second column should provide specifications of the instrument against the requirement (please provide quantitative responses wherever possible).
 - c. The third column should describe your compliance with a “Yes” or “No” only. Ensure that the entries in column 2 and column 3 are consistent.
 - d. The fourth column can contain additional remarks. You can use this opportunity to highlight technical features, qualify responses of previous columns, or provide additional details.
3. Vendors are encouraged to highlight the advantages of their tools over comparable tools from the competitors.
4. In the commercial bid, please provide the itemized cost of the system and required accessories, such as software, tubes, pumps, power supply, etc.

Terms and conditions:

1. The decision of the purchase committee is final. If a suitable bids within budget is received, the committee reserves the right to cancel or extend the tender.
2. The tenderer is required to carry out full testing and demonstration of the machine’s performance at the Indian Institute of Science, along with training the representative(s) from the institute on the operation and some sample testing for acceptance. All guaranteed specifications will have to be demonstrated, upon request, in an active installation. Failure to demonstrate any promised specifications will be deemed as technical non-compliance.
3. The tenderer has a track record of supplying similar equipment to at least three other organizations, preferably Central Government Institutions in India within the last 3 – 4 years. Relevant documents including purchase orders, and user testimonials on product performance and service shall be furnished.
4. Clarify if periodic (preventive) maintenance be done by a trained on-site engineer or requires a specialist from the OEM. The vendor should have qualified technical service personnel for the equipment based in India and must ensure a response time of less than 2 business days after receiving a service request.
5. The lead time for the delivery, commissioning, and training for the equipment should not be more than **2.5 months** from the date of receipt of our purchase order unless

otherwise negotiated by IISc. If there is a delay, IISc must be informed at least one month in advance. Approval of any delay in delivery is at the discretion of the purchase committee.

6. The indenter reserves the right to withhold placement of the final order, reject all or any of the quotations and to split up the requirements or relax any or all of the above conditions without assigning any reason.
7. The validity of the quotation shall be at least 12 weeks.
8. The vendor must ensure that all spare parts of the supplied machine and maintenance/troubleshooting support are available for at least 10 years after the machine delivery.
9. The selected vendor must register with IISc (free registration) if not already registered. As per purchase policy, purchase orders can be raised only to registered vendors.
10. Payment will be processed once satisfactory on-site testing and demonstration have been conducted. The vendor must furnish a delivery report countersigned by a representative from IISc.

Technical specifications:

1. The samples to be tested include cement paste powders, clays, activated carbon, and metallic particles. The mass loss profile and DTA signal should be available within a temperature range of 25°C to 1000 °C (or more). Temperature precision should be 0.30 °C (or better).
2. The heating rate should be within the range of 0.01 °C/min to 100 °C/min (or more)
3. The sample mass to be used will be at least 50 mg and a maximum of 1 g (or more depending on the density) of the sample must be accommodated. Crucible size shall be provided accordingly.
4. The mass resolution should be 0.10 micrograms (μg) or better.
5. The TG signal accuracy should be at least 0.001% (or better).
6. 10 nos. of high-quality alumina crucibles, which is compatible with alumino-silicate and carbon-based materials (samples) at the mentioned temperature range and heating rate shall be provided.
7. TGA of our samples is conducted in the presence of a purging gas, most commonly nitrogen. Such a facility should be available. The flow rates of purging gas should be within the range of 5 ml/min to 150 ml/min (or more). The resolution should be 1 ml/min (or better). Mass flow controllers with the desired accuracy should be provided.
8. The cooling down time from 1000 °C to room temperature should be within 30 mins.
9. Data recording software compatible with the machine must be provided. The software must record the mass loss (in mg) and % mass loss (for instance, relative mass change) and the change with DTA signal with increment in temperature.
10. The software must allow setting up of multiple test programs, including continuous temperature increase, holding at a particular temperature for few hours or step change in temperature etc.

11. The software program should be capable of text editing, exporting data in .csv and .xlsx (MS Excel) formats, and scaling of data within a certain temperature range. During experiments, the live logging and evaluation of the recorded data should be possible.
12. A branded PC (not assembled) with the following specifications and compatible with the machine software shall be provided: 21-inch LED screen, Windows 10 (or better), 8 GB RAM, 500 GB HDD, UPS, and i5 processor or better. MS Office should be preinstalled. The vendor must check that all the computer parts are authentic and supplied to the specs. Any deviation at a later stage will be considered a violation of the contract/tender specs. PC must be shown as a line item in the quotation. The decision of procuring the PC through the vendor is at the discretion of the committee depending on the budget.
13. Annual maintenance contract (AMC) rates shall be quoted as an optional line item for consideration. AMC may start after 3 years of warranty is over.

Other requirements:

1. The vendor must do a due diligence check on all the features of the machine and all the accessories and computers before delivery.
2. IISc requires at least three (3) years of complete warranty from the date of installation for all parts of the machine (including accessories). Vendors providing longer warranties within a competitive price will be given preference.
3. The vendor must arrange at least one site visit each year by a competitive technical staff during the first 3 years to check calibration and do routine checks for the entire machine.
4. The vendor must make necessary logistical arrangements for shipping, and unloading at the lab premise without any damage at no extra cost to IISc. Commissioning, and installation of the machine and all the parts by competitive technical personnel shall be arranged by the vendor.
5. Demonstration and training must be carried out within two days of delivery by competitive personnel. IISc will not pay additional for such training/demonstration.
6. IISc will expect acceptance tests, post installation. These shall be done in the presence of representatives of the vendor and staff from IISc. The inability to pass these tests will be counted as a technical failure and breach of contract.

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