

**Global Tender Notification for the Procurement of a Thermogravimetric Analyzer (TGA) with Autosampler and Cryostat**

**(Last Date for Submission: 03<sup>rd</sup> October 2024)**

Indian Institute of Science, Bangalore invites quotations from bonafide, resourceful, and eligible manufacturers/exclusive distributor/vendors for the procurement of a Thermogravimetric Analyzer (TGA) with Autosampler and Cryostat meeting the following technical specifications on C.I.P. Bangalore basis (by **Air Freight** only). The quotation should clearly mention the validity of the quote (minimum 90 days validity), terms of delivery, delivery schedule, estimated delivery date, and payment terms. The tender should be submitted in two separate sealed and distinctly marked envelopes: one containing the technical bid and the other containing the commercial bid, both of which should reach us duly signed on or before 17:00 hours, 03<sup>rd</sup> October 2024.

*As per the OM No.F.4/1/2023-PPD dated 03-04-2023 on Relaxation on Procurement of Certain Items through GTE, thermal analyzer, Cryostat (among 364 Medical devices) are exempted from the instructions related to GTE (for details, see the Annexure A of the OM, Sl. No. 32, 340, 341).*

The bids should be addressed to:

**The Chair**

Solid State and Structural Chemistry Unit  
Chemical Sciences Division  
Indian Institute of Science (IISc)  
Bengaluru, India – 560012  
Telephone: +91 80 2293 2336  
Email: [chair.sscu@iisc.ac.in](mailto:chair.sscu@iisc.ac.in)

The sealed bids should be sent to the following address:

**The Chair**

Solid State and Structural Chemistry Unit  
Chemical Sciences Division  
Indian Institute of Science (IISc)  
Bengaluru, India – 560012  
Telephone: +91 80 2293 2336  
Email: [chair.sscu@iisc.ac.in](mailto:chair.sscu@iisc.ac.in)

**Please enclose a technical compliance statement along with the technical bid.**

## Contents

1	Section 1	Bid Schedule	
2	Section 2	Eligibility Criteria	As specified by IISc
3	Section 3	Terms and Conditions	As specified by IISc
4	Section 4	Specifications	Technical specifications
5	Section 5	Checklist and Format for Technical Bid	Annexure 1: Bidder details
			Annexure 2: Declaration regarding experience of bidder
			Annexure 3: Declaration regarding clean track record of the bidder
			Annexure 4: Declaration of acceptance of tender
			Annexure 5: Terms and conditions. Details of item quoted
6	Section 6	Format for Commercial bid	Quotation with Price, Technical specifications of the Equipment

## Section 1: Bid Schedule

1.	Tender No	<i>IISc/SSCU/2024/TGA</i>
2.	Tender date	Wednesday, September 11, 2024
3.	Item Description	<i>Thermogravimetric Analyzer (TGA) with autosampler and cryostat</i>
4.	Tender type	Global Tender
5.	Documents to be submitted	i) Technical bid (part A) ii) Commercial bid (part B)
6.	Place of tender submission	<b>The Chairman</b> Solid State and Structural Chemistry Unit Chemical Sciences Division Indian Institute of Science (IISc) Bengaluru, India – 560012 Telephone: +91 80 2293 2336 Email: <a href="mailto:chair.sscu@iisc.ac.in">chair.sscu@iisc.ac.in</a>
7.	Last date and time of tender submission	17:00 hours, 03 <sup>rd</sup> October 2024
8.	For Further clarification	<b>The Chairman</b> Solid State and Structural Chemistry Unit Chemical Sciences Division Indian Institute of Science (IISc) Bengaluru, India – 560012 Telephone: +91 80 2293 2336 Email: <a href="mailto:chair.sscu@iisc.ac.in">chair.sscu@iisc.ac.in</a>

## Section 2 - Eligibility Criteria

1. This is a global tender enquiry and any bidder with registered head offices within or outside India are eligible to bid. However, The Bidder's firm should have been in existence for a minimum of 3 years. (Enclose Company Registration Certificate)
2. A complete bid with the following must be submitted:
  - a. Technical Bid with a technical compliance sheet, supporting documentation and **masked** commercial bid (a copy of the commercial bid, but '**without**' any pricing information) in one sealed envelope. The envelope should be 'marked' as '**Technical Bid**'.
  - b. Commercial bid including CIP pricing and warranty information and other commercial terms and conditions in another sealed envelope. The envelope should be 'marked' as '**Commercial Bid**'.
  - c. Both the envelopes with technical and commercial bids should be placed in a single sealed envelope.
  - d. All envelopes must be addressed to the tenderer as per information in Point 6 of Bid Schedule. Tender number and date must be inscribed on all the envelopes.
3. The Bidder should sign and submit the declaration of Acceptance of Terms and Conditions as per -Annexure 4.
4. The Bidder must not be blacklisted/banned/suspended or have a record of any service-related dispute with any organization in India or elsewhere. A declaration to this effect must be given as per **Annexure 3**.
5. Any bids that are deemed incomplete can be summarily rejected without further consideration.

## Section 3 – Terms and Conditions

### A) Submission of Tender:

1. All documentations in the tender should be in English.
2. Tender should be submitted in two envelopes (two bid system).
  - a. **Technical Bid (Part-A)** – Technical bid consisting of all technical details and check list for conformance to technical specifications (Section 5). The technical bid should contain a technical compliance table given in Section 4 of this document.
  - b. **Commercial Bid (Part-B)** – Indicating item wise price for the items mentioned in the technical bid, **as per the format of quotation provided in Annexure 5**, and other commercial terms and conditions.
3. The technical bid and price bid should each be placed in separate sealed covers, superscripting on both the envelopes the tender no. and the due date. Both these sealed covers are to be placed in a bigger cover which should also be sealed and duly superscripted with the Tender No, Tender Description & Due Date.
4. The SEALED COVER superscripting tender number, tender description and due date and the contact address and contact phone and email of the bidder should reach to the Chair, SSCU Office, Solid State and Structural Chemistry Unit, Indian Institute of Science, Bangalore – 560012, India on or before due date mentioned in the tender notice. In case due date happens to be holiday the tender will be accepted and opened on the next working day. If the quotation cover is not sealed, it will be rejected.
5. All queries are to be addressed to the person identified in “Section 1 – Bid Schedule” of the tender notice.
6. GST/other taxes, levies etc., are to be indicated separately. The BIDDER must mention GST Registration and PAN in the tender document (Indian Bidders only).
7. The Institute reserves the right to accept or reject any bid and to annul the bidding process and reject all bids at any time prior to the award of contract, without there by incurring any liability to the affected bidder or bidders or any obligation to inform the affected bidder or bidders.
8. Incomplete bids will be summarily rejected.

### B) Cancellation of Tender:

Notwithstanding anything specified in this tender document, IISc Bangalore, in its sole discretion, unconditionally and without having to assign any reason, reserves the rights:

- a. To accept OR reject lowest tender or any other tender or all the tenders.
- b. To accept any tender in full or in part.
- c. To reject the tender, offer not confirming to the tender terms.

### C) Validity of the Offer:

The offer must be valid for at least 90 Days from the closing date of this tender.

### D) Evaluation of Offer:

1. Bids that are deemed to be complete as per the information given in Section 2 of this document will be considered for technical evaluation. Technical bids (Part A) from such eligible bidders will be opened and evaluated. Bidders not furnishing the documentary evidence as required in Section 2 will not be considered.

2. Pre-qualification of the bidders shall not imply final acceptance of the Commercial Bid. The agency may be rejected at any point during technical evaluation or during commercial evaluation. The decision regarding acceptance and/or rejection of any offer in part or full shall be at the sole discretion of IISc Bangalore, and decision in this regard shall be binding on the bidders.
3. The award of contract will be subject to acceptance of the terms and conditions stated in this tender (Annexure 4).
4. Any offer which deviates from the vital conditions (as illustrated below) of the tender is liable to be rejected:
  - a. Non-submission of complete offers.
  - b. Receipt of bids after due date and time and or by email/fax (unless specified otherwise).
  - c. Receipt of bids in open conditions.
5. In case any BIDDER is silent on any clauses mentioned in these tender documents, IISc Bangalore shall construe that the BIDDER had accepted the clauses as of the tender and no further claim will be entertained.
6. No revision in the terms and conditions quoted in the offer will be entertained after the last date and time fixed for receipt of tenders.
7. Lowest bid will be calculated based on the total price of all items tendered for Basic equipment along with accessories selected for installation, operation, preprocessing and post processing. Any optional items, recommended spares, additional warranty, annual maintenance contract and any such items will be considered only if these are being purchased as part of this tender.

#### E) Pre-requisites for Installation:

1. The bidder must provide the prerequisite installation requirement of the equipment along with the technical bid.

#### F) Warranty:

1. The complete system is to be under warranty for a minimum period of 2 years.
2. During the warranty period, any complaint must be attended to within 2 working days after raising a service request.
3. After such a service call, if the instrument is found to be defective, it must be replaced or rectified at the cost of the bidder within 30 days from the date of receipt of written communications from IISc, Bangalore.
4. If there is any delay in replacement or rectification, the warranty period should be correspondingly extended.

#### G) Annual Maintenance Contract:

1. Costing for an annual maintenance contract for a period of at least 3 years post the warranty period is to be quoted.
2. The cost of annual maintenance must be locked-in for the period of 3 years post the warranty period.
3. AMC must cover service breakdowns + at least 1 maintenance visit per year.
4. AMC cost (if ordered, after the completion of warranty period) will be released on an yearly basis at the end of each year subject to satisfactory services.
5. Quote must include pricing for both comprehensive and non-comprehensive AMC.
6. Expected consumables for the maintenance of this system and their price, preferably with a lock-in at least during the warranty period, must be provided as an optional item in the quotation.

#### H) Delivery, Installation and Training:

1. The bidder shall provide the lead time for delivery, installation and commissioning at IISc Bangalore from the date of receipt of purchase order. The system should be delivered, installed and commissioned within 90 days from the date of receipt of purchase order.
2. The supply of the items will be considered as effected only on satisfactory installation and inspection of the system and inspection of all the items and features/capabilities and testing by IISc, Bangalore. After successful commissioning and inspection, the date of taking over of entire system by the IISc, Bangalore shall be taken as the start of the warranty period. No partial shipment is allowed.
3. The bidder should also arrange for technical training to the local facility technologists and users during installation. Additionally, 1 training visit per year must be included during the warranty period and during the AMC period, if and when the AMC (as detailed in section G) is purchased.

#### I) Purchase Order:

1. The order will be placed on the bidder whose bid is accepted by IISc based on the terms & conditions mentioned in the tender document.
2. The quantity of the items in tender is only indicative. IISc, Bangalore reserves the right to increase /decrease the quantity of the items depending on the requirement.
3. If the quality of the product and service provided is not found satisfactory, IISc Bangalore reserves the right to cancel or amend the contract.

#### J) Payment Terms:

1. Payment terms must be clearly included in the commercial bid.
2. AMC cost (if ordered) will be released on an yearly basis at the end of each year starting from the end of the warranty period subject to satisfactory services.
3. Price basis must be CIP Bangalore (by Air Freight only) basis.
4. As per GFR, no advance payment can be made to domestic vendors, unless an equal amount of bank guarantee is provided.

#### K) Statutory Variation:

Any statutory increase in the taxes and duties subsequent to bidder's offer, if it takes place within the original contractual delivery date, will be borne by IISc, Bangalore subject to the claim being supported by documentary evidence. However, if any decrease takes place the advantage will have to be passed onto IISc, Bangalore.

#### L) Disputes and Jurisdiction:

Any legal disputes arising out of any breach of contract pertaining to this tender shall be settled in the court of competent jurisdiction located within the city of Bangalore, India.

#### M) General:

1. All amendments, time extension, clarifications etc., within the period of submission of the tender will be communicated electronically. No extension in the bid due date/time shall be considered on account of delay in receipt of any document(s) by mail.
2. The bidder may furnish any additional information, which is necessary to establish capabilities to successfully complete the envisaged work. It is however, advised not to furnish superfluous information.
3. Any information furnished by the bidder found to be incorrect, either immediately or at a later date, would render the bidder liable to be debarred from tendering/taking up of work in IISc, Bangalore.

## Section 4 - Technical Specifications Thermogravimetric Analyzer (TGA) with Autosampler and Cryostat

### Broad System Requirements and Usage:

We intend to purchase a *Thermogravimetric Analyzer (TGA) with Autosampler and cryostat* with the following minimum specifications or better for our lab at the Solid State and Structural Chemistry Unit, Indian Institute of Science, Bangalore. The following technical criteria are to be met by any Thermogravimetric Analyzer (TGA) with Autosampler with accessories that are being quoted under this notice:

- 1) Access to the quoted instrument should be multi-user friendly with an easy-to-use software interface and modular hardware design that allows rapid user training. It should also be easy to change from one operational mode to another with relative ease so that our students can set up experiments and handle the instrument.
- 2) In addition, the system being quoted should have a modular design, providing the flexibility to support upgradation for the possibility of integrating future updates either at the time of procurement or at a later date.

**Table of Technical Specifications (Columns 3-6 are to be filled-in and submitted for verifying technical compliance.)**

<b>S. No</b>	<b>Technical Specifications</b>	<b>Provided Specification</b>	<b>Technical Compliance (Yes/No)</b>	<b>Deviation from specifications, if any</b>	<b>Remarks/Details of specification sheets or supporting documents</b>
1.	<b>Symmetrical vertical hang-down balance</b>				
2.	<b>Operating temperature range:</b> Room temperature to $\geq 1100$ °C measured at sample thermocouple				
3.	<b>Temperature accuracy</b> of $\pm 0.5$ °C				
4.	<b>Isothermal temperature precision</b> of $\leq 0.1$ °C				
5.	<b>Linear heating rate</b> of $\leq 0.1$ to $\geq 500$ °C/min				
6.	<b>Ballistic heating rates</b> of $\geq 1000$ °C/min				

7.	<b>Cooling time</b> from 1000 °C to 35 °C of <=10 min				
8.	<b>Sample weight capacity</b> of >=1000 mg				
9.	<b>Weight accuracy</b> of <=0.1 µg or lower				
10.	<b>Weighing precision</b> of <=0.0025% of sample weight (measured over at least 10 measurements with 100 mg standard weight)				
11.	Weight resolution of <=0.1 µg				
12.	Baseline linearity of <=1 µg over 50 to 1000 °C with Pt pans				
13.	Microbalance to be electrically heated and have autocalibration with built-in weights. Must also allow for external calibration with standard weights. The balance must also be thermostated				
14.	Thermobalance to have Symmetrical vertical hang-down balance for highest weight measurement accuracy				
15.	System Must have fully automated and Integrated temperature calibration				
16.	Reactive gas inlet must be close to sample and be programmable to minimize buoyancy. External gas inlet tubes <b>must not</b> be used.				
17.	Autosampler with >= 25 sample carousel with automated pan punching				
18.	Integrated purge gas delivery control with programmable gas flow				

19.	Furnace heating to be infra-red based to achieve fast heating/cooling rates described in points 5 and 6 of this table				
20.	Furnace and thermobalance to be operable at a vacuum or $\leq 5 \times 10^{-5}$ Torr.				
21.	Necessary computer and associated hardware needed for fully automated operation must be included				
22.	Software that is easy to use and enables user settable parameters such as temperature, heating rates, etc., must be included.				
23.	All programmable features including auto sampler position calibration and use must be available through the software interface				
24.	The software must allow for saving data files, retrieving data files, exporting data files into user desired formats such as a .csv, .xlsx or similar data file formats.				
25.	The instrument and associated software must allow High resolution TGA.				
26.	Automated changeover from linear heating to isothermal hold must be possible				
27.	The instrument and associated software must allow modulated TGA measurements. Sinusoidal temperature modulation with amplitudes of $\leq 0.01$ °C				

	to $\geq 10$ °C with a period of $\leq 10$ s to $\geq 1000$ s				
28.	Integrated software must allow for calculating and displaying activation energy and pre-exponential factor (or its log) and weight amplitude and modulated temperature				
29.	Software must allow for the calculation and plotting of differential thermal analysis (DTA) data.				
30.	Alumina pans of $\geq 70$ $\mu$ l (10 nos) and Pt pans of $\geq 70$ $\mu$ l (30 Nos) must be included in the quotation.				
31.	Any accessories such as cables, pumps, etc., that are essential for the operation of the system must be included with the quotation				
32.	The system must allow for on-site integration with FTIR or Mass Spectrometry apparatus for upgradation to TGA-IR and/or TGA-MS, respectively				
33.	The system must allow for use of sample pans of up to 250 $\mu$ l.				
34.	Any standard samples and calibrations must be included in the quote. Provide details.				
35.	Instrument must be compatible with Indian power supply conditions of 220/240V single phase or 415 V 3 Phase and Power line frequency of 50 Hz				
36.	Any manuals and documentation necessary for operation,				

	trouble shooting and training must be provided with the system.				
37.	Warranty as per details in Point F in Section 3				
38.	AMC and accessories with details as per Point G in Section 3				
39.	Installation and Training as per details in Point H in Section 3				
40.	Local service personnel in Bangalore is preferred. Please mention if you have service personnel stationed in Bangalore.				
41.	The bidder or OEM must have a track record of having supplied at least 5 similar systems with autosamplers within India. A list of such installations with contact email and phone number must be given.				

# Section 5: Checklist

(This checklist should be enclosed with technical bid - Part A)

The following items must be checked before the bid is submitted:

## 1. Sealed Envelope "A": Technical Bid

Technical bid (each page signed by the authorized signatory and sealed) with the below annexures:

- a. Annexure 1: Bidders details
- b. Annexure 2: Declaration regarding experience
- c. Annexure 3: Declaration of track record
- d. Annexure 4: Declaration of acceptance of terms and conditions
- e. Annexure 5: **Masked** Commercial Bid (that is commercial bid **without pricing** details) with details of item quoted
- f. Declaration of Local Content, if any
- g. Technical Compliance Statement with the **Table of Technical Specifications** (in Section 4) duly filled in.
- h. Copy of this tender document duly signed by the authorized signatory on every page and sealed.

## 2. Sealed Envelope "B": Commercial Bid

Your quotation must be submitted in two envelopes: Technical Bid (**Envelope A**) and Commercial Bid (**Envelope B**), superscribing on both the envelopes with, Tender description, Tender No. and due date and both in sealed covers and put in a bigger cover which should also be sealed and duly super scribed with Tender No., Tender description & Due Date.

## Annexure 1: Details of the Bidder

The Bidder must provide the following mandatory information & attach supporting documents wherever mentioned:

Sr. No.	Type	Details
1.	Name of the Bidder	
2.	Nature of Bidder (Attach attested copy of Certificate of Incorporation/ Partnership Deed)	
3.	Registration No/ Trade License, (attach attested copy)	
4.	Registered Office Address	
5.	Address for communication	
6.	Contact person- Name and Designation	
7.	Telephone No	
8.	Email ID	
9.	Website	
10.	PAN No. (attach copy)	
11.	GST No. (attach copy)	

Signature of the Bidder

Name:  
Designation, Seal

Date:

## Annexure 2: Declaration Regarding Experience

To,

**The Chair**

Solid State and Structural Chemistry Unit

Chemical Sciences Division

Indian Institute of Science (IISc)

Bengaluru, India – 560012

Telephone: +91 80 2293 2336

*Email: [chair.sscu@iisc.ac.in](mailto:chair.sscu@iisc.ac.in)*

Ref: Tender No: XXXXXXXXX

Dated: XXXXX

Supply and installation of one Thermogravimetric Analyzer (TGA) with Auto Sampler and Cryostat

Sir,

I have carefully gone through the Terms & Conditions contained in Section 3 of the above referred tender. I hereby declare that my company / firm has \_\_\_\_\_ years of experience in supplying and installing Thermogravimetric Analyzer (TGA) with autosampler.

(Signature of the Bidder)

Printed Name Designation, Seal

Date:

## Annexure 3: Declaration of Track Record

To,

**The Chair**

Solid State and Structural Chemistry Unit

Chemical Sciences Division

Indian Institute of Science (IISc)

Bengaluru, India – 560012

Telephone: +91 80 2293 2336

Email: [chair.sscu@iisc.ac.in](mailto:chair.sscu@iisc.ac.in)

Ref: Tender No: XXXXXXXXXX

Dated: XXXXX

Supply and installation of one Thermogravimetric Analyzer (TGA) with Autosampler and Cryostat

Sir,

I have carefully gone through the Terms & Conditions contained in the above referred tender. I hereby declare that my company / firm is not currently debarred / blacklisted by any Government / Semi-Government organizations / institutions in India or abroad. I further certify that I am competent officer in my company / firm to make this declaration.

OR

I declare the following:

Sr. No.	Country in which the company is debarred/ blacklisted / having pending case	Blacklisted / debarred by Government / Semi Government Organizations or Institutions / having pending case	Reason	Time Period

(Note: In case the company / firm was blacklisted previously, please provide the details regarding period for which the company / firm was blacklisted and the reason/s for the same).

(Signature of the Bidder)

Printed Name Designation, Seal

Date:

## Annexure 4: Declaration of Acceptance of Terms and Conditions

To,

**The Chair**

Solid State and Structural Chemistry Unit

Chemical Sciences Division

Indian Institute of Science (IISc)

Bengaluru, India – 560012

Telephone: +91 80 2293 2336

*Email: [chair.sscu@iisc.ac.in](mailto:chair.sscu@iisc.ac.in)*

Ref: Tender No: XXXXXXXXX

Dated: XXXXX

Supply and installation of one Thermogravimetric Analyzer (TGA) with Autosampler and Cryostat

I have carefully gone through the Terms & Conditions contained in the above referred tender document. I declare that all the provisions of this tender document are acceptable to my company. I further certify that I am an authorized signatory of my company and am, therefore, competent to make this declaration.

Yours faithfully  
(Signature of the  
Bidder)

Printed Name Designation, Seal

Date:

## Annexure 5: Details of Commercial Bid

The commercial bid should be furnished with all requirements of the tender with supporting documents as mentioned:

The sealed bids should be addressed and sent to the following:

### The Chair

Solid State and Structural Chemistry Unit

Chemical Sciences Division

Indian Institute of Science (IISc)

Bengaluru, India – 560012

Telephone: +91 80 2293 2336

Email: [chair.sscu@iisc.ac.in](mailto:chair.sscu@iisc.ac.in)

S. No	Description	Cat. Number	Quantity	Unit Price	Sub Total
1.	Essential items noted in the technical specification				
1.a	(details of essential items)				
1.b					
2.	Optional items noted in the technical specification				
2.a	(details of optional items)				
2.b					
3.	Accessories for operation and installation				
4.	All consumables, spares and software				
5.	Warranty ( $\geq 2$ years)				
6.	AMC 3 years beyond warranty				
7.	Payment terms and conditions				
8.	CIP/CIF IISc, Bengaluru				

List of any additional items, such as Spares and Hardware/PCBs Likely to go obsolete after the next 3 Years