

## **Tender notification for the procurement of a “closed cycle cryostat”**

This is an FRQ (Request for call) for the procurement of a “closed cycle cryostat” for Centre for Nano Science and Engineering (CeNSE) at Indian Institute of Science (IISc), Bangalore. This RFQ is from domestic (India-based) equipment manufacturers.

IISc is India’s best research institute and CeNSE is multidisciplinary research department with the best academic fabs in the world that houses a 14,000 sq. ft cleanroom.

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## Section 1- Bid Schedule

1	Tender No	<b>CeNSE/CK/02/2023-24</b>
2	Tender Date	<b>13<sup>th</sup> April 2023</b>
3	Item Description	Procurement of closed cycle cryostat
4	Tender Type	Two bid system (i) Technical Bid (Part A) (ii) Commercial Bid (Part B)
5	Place of tender submission	Chairperson Office, First Floor, Centre for Nano Science and Engineering Indian Institute of Science, Bangalore 560012
6	Last Date & Time for submission of tender	<b>3<sup>rd</sup> May 2023</b>
7	For further clarification	Chandan Kumar Assistant Professor Centre for Nano Science and Engineering Indian Institute of Science Bangalore – 560012, India. Email: kchandana@iisc.ac.in

## **Section 2 – Eligibility Criteria**

Prequalification criteria:

1. The Bidder's firm should have existence for a minimum of 5 years. (Enclose Company Registration Certificate)
2. The Bidder should belong to either class 1 or class 2 supplier 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%.
3. Purchase preference as defined by the recent edits to GFR (within the "margin of purchase preference") will be given to Class-1 supplier.
4. Quote should come only from Indian Original Equipment Manufacturer (OEM) or their Indian authorized distributor.
5. The quotations should be on FOR-IISc Bangalore basis in INR only.
6. MSME can seek exemption to some qualification criteria. IISc follows GFR2017 for such details
7. The bidder should sign and submit the declaration for Acceptance of Terms and Conditions as per -Annexure 4.
8. 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.

## 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 to technical specifications.

The technical proposal should contain a technical compliance table with 5 columns.

- i. The first column must list the technical requirements, in the order that they are given in the technical requirement below.
    - ii. The second column should provide specifications of the instrument against the requirement. Please provide quantitative responses wherever possible.
    - iii. 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.
    - iv. The fourth column should state the reasons/explanations/context for deviations, if any.
    - v. The fifth column can contain additional remarks from the Indian Original Equipment Manufacturer (OEM) or from their distributors. You can use this opportunity to highlight technical features, qualify response of previous columns, or provide additional details, compare your solution with that of your competitors or provide details as requested in the technical requirements table below.
  - 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 tender, 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 / due date & should reach Chairperson Office, Centre for Nano Science and Engineering, 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 should mention GST Registration and PAN in the tender document (Indian Bidders only).

7. If price is not quoted in Commercial Bid as per the format provided in tender document the bid is liable to be rejected.
8. 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.
9. The technical proposal must include references of at least 3 previous installations done within last 5 years of similar equipment from the equipment manufacturer. Please provide the names and contact addresses of the three independent referees, so that the committee can contact them independently to get reference. Please provide the installation report.
10. Incomplete bids will be summarily rejected.
11. Quote should come only from Indian Original Equipment Manufacturer (OEM) or their Indian authorized distributor.
12. The quotations should be on FOR-IISc Bangalore basis in INR only.

#### **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 shall be valid 90 Days from the date of opening of the commercial bid.

#### **D) Evaluation of the offer:**

1. The technical bid (Part A) will be opened first and evaluated.
2. Bidders meeting the required eligibility criteria as stated in Section 2 of this document shall only be considered for Commercial Bid (Part B) opening. Further, agencies not furnishing the documentary evidence as required will not be considered.
3. 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 in regard to acceptance and / or rejection of any offer in part or full shall be the sole discretion of IISc Bangalore, and decision in this regard shall be binding on the bidders.

4. The award of contract will be subject to acceptance of the terms and conditions stated in this tender.
5. 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.
6. 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.
7. 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.
8. Lowest bid will be calculated based on the total price of all items tendered for Basic equipment along with accessories selected for installation, operation, pre-processing and post processing, optional items, recommended spares, warranty, annual maintenance contract.

#### **E) Pre-requisites:**

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

#### **F) Warranty:**

The complete system is to be under warranty period of **minimum 1 year** including free supply of consumables, spare parts, and data analysis software from the date of functional installation. Vendor should include cost of any spares that are expected to be needed during the warranty period, including electronics, subcomponents, and software. 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. If there is any delay in replacement or rectification, the warranty period should be correspondingly extended.

#### **G) 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.

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

The bidder shall provide the lead time to delivery, installation and made functional at IISc, Bangalore from the date of receipt of purchase order. The system should be delivered, installed, and made functional **within 3 months** from the date of receipt of purchase order. 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 tested by the IISc, Bangalore. After successful installation 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. The bidder should also arrange for technical training to the local facility technologists and users.

#### **I) Payment Terms:**

100% payments (except AMC) will be released after completion delivery and satisfactory installation subject to TDS as per rules. AMC cost (if ordered), after completion of warranty period will be released on half-yearly basis at the end of each six months subject to satisfactory services. Price basis must be on FOR-IISc Bangalore basis only. As per GFR no advance payment can be made to domestic vendors, unless an equal amount of bank guarantee is provided.

#### **J) 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 on to IISc, Bangalore.

#### **K) Dispute 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.

#### **L) 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. The bidder may visit the installation site before submission of tender, with prior intimation.
4. 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

S.N.	DESCRIPTION
<b>1</b>	<b>CRYOCOOLER</b>
	(i) Cryocooler Type: GM type, pneumatically driven Solvay cryocooler in order to achieve reduced vibrations.
	(ii) Instrumentation skirt: Welded-On Stainless Steel Instrumentation Skirt for Higher vacuum and high performance.
	(iii) Instrumentation skirt: Should have High conductance pump out port with 1xNW-25 flange for evacuation.
	(iv) Cryostat with sample in vacuum and in direct contact with cold head
	(v) All component's operating voltage: <b>220-250 Volts AC, 50 Hz, single-phase</b>
	(vi) <b>Cold head cooling power Should be:</b> <ul style="list-style-type: none"> <li>- 2nd stage: <math>\geq 0.2 \text{ W@ } 4.2 \text{ K}</math>, at 50 Hz  <math>\geq 8 \text{ W@ } 20 \text{ K}</math> at 50Hz</li> <li>- 1st stage: <math>\geq 14 \text{ W @ } 77 \text{ K}</math>, at 50 Hz</li> </ul>
	(vii) Temperature at sample stage (to be demonstrated on site during installation): minimum of 4 K and maximum of 355 K or of wider range.
	(viii) Vibrations at sample holder: $\leq 20 \mu\text{m}$ (peak to peak) at the sample stage.
	(ix) <b>Cool down time:</b> less than 100 minutes to reach the least sample platform temperature from room temperature.
<b>2</b>	<b>TEMPERATURE CONTROL</b>
	i) 10 pin hermetic feedthrough with required wires and suitable plug and receptacle for control and monitoring of temperature through one sensors and heater must be provided
	ii) A Calibrated Cernox sensor at cold head to monitor cold head temperature must be provided.
	iv) A 50 $\Omega$ low magnetic signature heater should be provided for control of temperature.
	v) Temperature controller compatible to the cryostat should be supplied with the following features Preferably Lakeshore335 required <ul style="list-style-type: none"> <li>a) Interconnecting cable to cryostat</li> <li>b) Two Channel Sensor Input</li> <li>c) Two independent heater output loops</li> <li>d) USB &amp; Ethernet Port.</li> </ul>



	<p>e) PID control Zones</p> <p>f) Autotuning PID</p> <p>Suitable heater power</p>
<b>3</b>	<b>VACUUM SHROUD AND RADIATION SHIELD:</b>
	i) Vacuum Should be made of Aluminum to use for magnetic application
	ii) Narrow Gap Closed Vacuum Shroud should have the Compact 50mm OD for Magnet Applications.
	iii) The design of the Vacuum shroud should allow for rotation under vacuum.
	iv) Radiation shield should be made of Aluminum to use for magnetic application and inner diameter of the Radiation shield should be $\varnothing 41$ mm dia and 101.6 mm
	v) The design of the vacuum shroud and radiation shield should be such that the sample exchange can be done easily without the use of any tools.
<b>4</b>	<b>COMPRESSOR AND HELIUM HOSES:</b>
	(i) Compressor Cooling Type: Water cooled type.
	(ii) One pair of flexible helium gas hoses must be provided. The length should be 20ft min.
	(iii) Cold head Power supply and cable compatible to <b>220-250 Volts AC, 50 Hz, single-phase</b>
	(iv) The compressor and cooler assembly should be managed for optimal size, noise, vibration and power consumption;
	(v) The compressor should be either on a movable trolley or fixed with wheels which can be locked and unlocked.
(vi) The maintenance interval of compressor must be $\geq 30,000$ hours.	
<b>5</b>	<b>WIRING FOR MEASUREMENTS</b>
	<p>i) <b>DC Sample Wiring:</b> System should have 32-pin hermetic feedthrough connector with 36 AWG, 12 twisted-pair DC lines preinstalled (total 24 wires should have) along with the system.</p> <p>ii) <b>RF sample Wiring:</b> System should have 4x BNC feedthrough installed with 4x mini-Coax cable suitable for 10MHz frequency along with the system.</p>
<b>G</b>	<b>Manuals</b>
	i) Installation kit (including wrenches and setup tools) and tools required for connecting to pumps etc. should be provided.
	ii) User manual, technical manuals with detailed drawings must be provided.

**Optional items:**

1. Turbo pumping station from reputed company compatible with the system.

**Additional Items (Must be added to compliance certificate as well):**

- a. **Shipping:** The cost of shipping up to IISc Bangalore should be included in the quote. IISc Bangalore will help with customs clearance at Bangalore Airport.
- b. **Installations and Training:** Support from engineers must be provided for the complete demonstration and training of the above-mentioned experimental modes. Training must be available as and when required during the warranty period. Technical support must be available in India, who is available as and when required during the warranty period.
- c. **Spares:** List out the spares (tips for various modes) provided with the system and numbers.
- d. **Warranty period:** At least 1 year warranty from the date of installation. Preferably 2 years or more of warranty.
- e. **Delivery Period:** 3 months

## **Section 5 – Technical Bid**

The technical bid should furnish all requirements of the tender along with all annexures in this section and submitted to

The Chairperson,  
Attn: Dr. Chandan Kumar  
Centre for Nano Science and Engineering  
Indian Institute of Science  
Bangalore – 560012, India  
Email: kchandana@iisc.ac.in

## **Annexure-1:**

### **Details of the Bidder**

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

#### Details of the Bidder

- Sl. No Items 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 Chairperson,  
Centre for Nanoscience and Engineering,  
Indian Institute of Science,  
Bangalore – 560012, India

Ref: Tender No: XXXXXXXXX  
Dated: XXXXX

Supply and installation of closed cycle cryostat at CeNSE, IISc Bangalore.

Sir,  
I've carefully gone through the Terms & Conditions contained in the above referred tender. I hereby declare that my company / firm has ---- years of experience in supplying and installing -----

(Signature of the Bidder)

Printed Name

Designation, Seal

Date:

### **Annexure-3:**

#### **Declaration regarding track record**

To,  
The Chairperson,  
Centre for Nano Science and Engineering  
Indian Institute of Science,  
Bangalore – 560012, India

Ref: Tender No: XXXXXXXX

Dated: XXXXX

Supply and installation of closed cycle cryostat at CeNSE, IISc Bangalore.

Sir,

I've 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'm competent officer in my company / firm to make this declaration.

Or

I declare the following  
Sl.No Country in which the  
company is Debarred  
/blacklisted / case is  
Pending Blacklisted / debarred by  
Government / Semi  
Government/Organizations  
/Institutions

Reason Since when and  
for how long

(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).

Yours faithfully  
(Signature of the Bidder)

Name  
Designation, Seal

Date:

#### **Annexure – 4:**

### **Declaration for acceptance of terms and conditions**

To,  
The Chairperson,  
Centre for Nano Science and Engineering  
Indian Institute of Science,  
Bangalore – 560012, India

Ref: Tender No: XXXXXX  
Dated: XXXX

Supply and installation of closed cycle cryostat at CeNSE, IISc Bangalore.

Sir,  
I've carefully gone through the Terms & Conditions as mentioned 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'm an authorized signatory of my company and am, therefore, competent to make this declaration.

Yours faithfully,

(Signature of the Bidder)

Name  
Designation, Seal

Date:

**Annexure – 5:**  
**Details of items quoted:**

- a. Company Name
- b. Product Name
- c. Part / Catalogue number
- d. Product description / main features
- e. Detailed technical specifications
- f. Remarks

Instructions to bidders:

- 1. Bidder should provide technical specifications of the quoted product/s in detail.
- 2. Bidder should attach product brochures along with technical bid.
- 3. Bidders should clearly indicate compliance or non-compliance of the technical specifications provided in the tender document.



## Section 6 – Commercial Bid

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

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 essential items)				
2.b	...				
3.	Accessories for operation and installation				
4.	All Consumables, spares and software to be supplied locally				
5.	Warranty (3 years)				
6.	AMC 3 years beyond warranty				
7.	Cost of Insurance and Airfreight				
8.	CIP/CIF IISc, Bengaluru				

Any additional items

S.No	Description	Cat. Number	Quantity	Unit Price	Sub total
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Addressed to  
The Chairperson,  
Attn: Chandan Kumar  
Centre for Nano Science and Engineering  
Indian Institute of Science  
Bangalore – 560012, India  
Email: kchandana@iisc.ac.in

## Section 7 – Checklist

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

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

A. Sealed Envelope “A”: Technical Bid

1. Section 5- 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 regarding clean track record
  - d. Annexure 4: Declaration for acceptance of terms and conditions
  - e. Annexure 5: Details of items quoted
2. Copy of this tender document duly signed by the authorized signatory on every page and sealed.

B. Sealed Envelop “B”: Commercial Bid

Section 6: Commercial Bid

Your quotation must be submitted in two envelopes: Technical Bid (Envelope A) and Commercial Bid (Envelope B) super scribing on both the envelopes with Tender No. and due date and both of these 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.

Thanking you,  
Chandan Kumar  
Assistant Professor  
Centre for Nano Science and Engineering  
Indian Institute of Science, Bangalore, India 560012.  
E-mail: kchandan@iisc.ac.in