

Global Tender notification for the procurement of a “Cryogen free He3 cryostat with magnet”

(GTE Approval No. IISc-GTE-2022-236)

This is an FRQ (Request for call) for the procurement of a “Cryogen free He3 system with 12 T magnet” for Centre for Nano Science and Engineering (CeNSE) at Indian Institute of Science (IISc), Bangalore.

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	GTE/CK/CeNSE/1622-23
2	Tender Date	30 th March 2023
3	Item Description	Procurement of Cryogen free He3 cryostat with magnet
4	Tender Type	Two bid system (i) Technical Bid (Part A) (ii) Commercial Bid (Part B)
5	Place of tender submission	Chairperson Office, Attn: Dr. Chandan Kumar First Floor, Centre for Nano Science and Engineering Indian Institute of Science, Bangalore 560012
6	Last Date & Time for submission of tender	21 th April 2023
7	For further clarification	Chandan Kumar Assistant Professor Centre for Nano Science and Engineering Indian Institute of Science Bangalore – 560012, India. Email: kchandan@iisc.ac.in

Section 2 – Eligibility Criteria

Prequalification criteria:

1. The Bidder's firm should have existed for a minimum of 5 years. (Enclosed Company Registration Certificate)
2. The Bidder should have qualified technical service personnel for the instrument(s) based in India.
2. The Bidder's firm should have existence for a minimum of 5 years. The bidder should enclose company registration certificate.
3. The bidder should sign and submit the declaration for 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 has to 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 bid **must not contain** any price information.

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.
 - vi. Any additional capabilities or technical details, that you would like to bring to the attention of the purchase committee, can be listed at the end of the technical table.
 - vii. **Tender documents without technical compliance documents will not be considered.**
- 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 vendor should have qualified technical service personnel for the equipment based in India and should assure a response time of <48 hours.
9. The technical proposal must include references of at least 3 previous installations done in India within last 5 years of similar cryogenic 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. A technical evaluation by the purchase committee may include a demonstration to verify the functionalities and capabilities of the system quoted. The purchase committee reserves the right to reject the bids based on their technical evaluation of the quality of data, capability demonstration, and service. If the data/requested capability demonstration does not happen within a stipulated timeframe, the bid will be rejected. Any discrepancy between the promised specifications and measurements will be deemed as technical non-compliance. Imported items should be shipped on C.I.P. Bangalore basis (by Air Freight only), and all components and accessories indicate component-wise and itemized breakup. Provide certificates for the country of origin of manufacturing for each line item. The price of every line item in the commercial bid should be quoted along with the total quoted price for the instrument to be operational (installed and ready to use) in our facility.
11. The purchase committee 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.
12. Incomplete bids will be summarily rejected.
13. The decision of purchase committee will be final.

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 3 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) Annual Maintenance Contract (AMC)

An annual maintenance contract for a period of 2 years post warranty should be provided on completion of warranty period. If not possible, ample justification is needed.

H) Purchase Order:

1. The order will be placed on the bidder whose bid is accepted by IISc Bangalore 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.
4. After the award of the purchase order, the vendor must provide an Order Acknowledgement within 30 days from the receipt of the Purchase Order

I) Delivery, Installation and Training:

1. The bidder shall provide the lead time to delivery, installation and made functional at IISc, Bangalore from the date of receipt of purchase order.
2. The system should be delivered, installed, and made functional **within 4 months** from the date of receipt of purchase order.
3. 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.
4. 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.
5. No partial shipment is allowed. The bidder should also arrange for technical training to the local facility technologists and users.
6. The bidder should provide onsite application training for the local facility technologists and users.
7. The bidder should also arrange technical training for the local facility technologists and users

J) Payment Terms:

The payment will be through a Letter of Credit and the milestone of the payment will be determined after mutual discussions with the successful bidder

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 on to IISc, Bangalore.

L) 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.

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. 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

1. **Base unit:** Cryogen free He3 cryostat with at least 12 T magnetic field.
2. **Magnet:** 12 T superconducting magnet having field homogeneity better than 0.1 % over 10 mm diameter sphere & integrated switch heater so that magnet can also run-in persistent mode. Please provide drivers for the magnet.
3. **Magnet power supply:** Four quadrants magnet power supply. Appropriate interfaces, mechanism of quench protection in case of power failure or problem with the pulse tube.
4. **He3 probe:** Guaranteed base temperature of at least 300 mK or less at the sample position with factory installed wiring and magnet fully energized. It should be demonstrated at the time of installation.
 - a. **Temperature stability:** The temperature range for the He3 probe should be < 300mK to 300K or more. The typical temperature stability should be better than +/- 3 mK till 1.2 K and +/- 0.1 K above 1.2 K. Please provide supporting data.
 - b. **Hold time:** The hold time at base temperature should be at least **40 hours** or more with no heat load.
 - c. **3He/4He mixture:** Please specify the volume of He3 and its purity.
 - d. **VTI Sample space:** at least 50 mm or more
 - e. **Sample space** and close loop He should be separated such that system can be maintained at low temperature for longer time without the need to warm up.
5. **1.5 K general purpose probe:** Temperature range of at least 1.5 K to 300 K or more, should be capable to perform electrical transport measurements from DC to few GHz, ESD protection must be provided in the sample probe, RC filters (cut off range, optional item), heater and sensors should be mounted on the probe, Mechanical rotator with 0 to 360 degree rotation out of plane.
6. **Temperature sensor and heater:** Appropriate heaters and calibrated sensors should be provided at first and stage of the VTI. Calibrated cernox sensor should be installed on the magnet. The calibrated ruthenium and cernox sensors should be installed in He3 probe and 1.5 K probes, respectively. The data sheet should be provided with the calibration curve of each temperature sensor and the type of heater.
7. **Compressor and cryocooler:** Pulse tube should have vibrational isolation from rest of the cryostat. Pulse tube and compressor should be electrically isolated from the Cryostat. Cooling power of the pulse tube should be at least 1 W at 4.2 K. Specify the pulse tube model.
8. **Gas handling system:** Gas handling system with required pressure gauges etc, the pumps should be electrically isolated from the Cryostat. Appropriate provisions to collect the mixture back to the dump in case of emergencies.
9. **Electrical Isolation:** The Cryostat should be electrically isolated from Frame, Controller unit, gas handling rack and compressor.
10. **Wiring:** All the wirings need to be thermally anchored at different stages of the cryostat. All the wiring should be terminated with suitable connectors at the room temperature.
 - (a) At least 24 (12 twisted pair) Constantan wire from room temperature to cold head.
 - (b) At least 4 coaxial cables from RT to cold head.
11. **Insulation** ($1 > G \text{ Ohm}$) between twisted pair, between wire and chassis and between inner and outer coax

12. Appropriate Water Chiller
13. Appropriate dry scroll pump for the VTI space including hoses, valves.
14. One hour UPS back up for full system.
15. Software for the control of temperature, magnet, and the system. The software must allow manual, semi-automatic and fully automatic control of the equipment. Additionally, it should be possible to control the cryostat along with magnet using the standard worldwide used software (e.g., MATLAB, LabVIEW) based on GPIB/RS232. The software should be based on Windows 10 or higher versions. Free upgrade of software.
16. Testing and training should be done during onsite installation.
17. Manual and supporting documents; Soft Copy as well as hard copy.
18. Factory trained service people should be available in India and most preferably in Bangalore.
19. Please provide compliance statement.

Optional Items:

1. Air compressor for the pneumatic valve
2. Turbo pumping station from reputed companies.
3. Vibration isolation support mount.
4. 14 T superconducting magnet having field homogeneity better than 0.1 % over 10 mm diameter sphere & integrated switch heater so that magnet can also run-in persistent mode.
5. Additional two-year warranty.

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: XXXXXXXXXX
Dated: XXXXX

Supply and installation of cryogen free He3 cryostat with magnet at CeNSE, IISc Bangalore.

Sir/Madam,
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 cryogen free He3 cryostat with magnet at CeNSE, IISc Bangalore.

Sir/Madam,

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 cryogen free He3 cryostat with magnet at CeNSE, IISc Bangalore.

Sir/Madam,
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

Addressed to
The Chairperson,
Attn: Chandan Kumar
Centre for Nano Science and Engineering
Indian Institute of Science
Bangalore – 560012, India
Email: kchandan@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