भारतीय विज्ञान शिक्षा एवं अनुसंधान संस्थान मोहाली

शिक्षा मंत्रालय, भारत सरकार द्वारा स्थापित

सैक्टर 81,नॉलेज सिटी,प. ओ. मनोली, एस. ए. एस. नगर, मोहाली, पंजाब 140306

INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH MOHALI

(Established by Ministry of Education, Govt. of India)

Sector-81, Knowledge city, PO-Manauli, SAS Nagar Mohali-140306, Punjab

PAN No. - AAAAI1781K GSTIN – 03AAAAI1781K2ZS

• Phone : +91-172- 2240121 • Fax : +91-172-2240124 • http://www.iisermohali.ac.in • Email: tenders@iisermohali.ac.in

CPPP/Institute Website

IISERM(1725)26/27-Pur. Dated: 31.07.2026

ई - निविदा आमंत्रण सूचना

NOTICE INVITING E-TENDER

अलग-अलग मैग्नेटिक फ़ील्ड और तापमान के तहत भौतिक गुणों को मापने के लिए क्रायोजन-फ़्री प्लेटफ़ॉर्म की आपूर्ति, स्थापना, परीक्षण और कमीशनिंग के लिए दो बोली प्रणाली में निदेशक, आईआईएसईआर मोहाली की ओर से ऑनलाइन निविदाएं आमंत्रित की जाती हैं। तकनीकी विनिर्देश और नीचे दिए गए विवरण के अनुसार और सीपीपीपी पर ओईएम/ओपीएम मूल उपकरण निर्माता/आपूर्तिकर्ता से बीओक्यू सूची अर्थात **https://eprocure.gov.in/eprocure/app** निविदा दस्तावेज ई प्रोक्योरमेंट पोर्टल की-वेबसाइट **https://eprocure.gov.in/eprocure/app** और संस्थान की वेबसाइट **www.iisermohali.ac.in** से डाउनलोड किए जा सकते हैं।

Online tenders are invited on behalf of the Director, IISER Mohali in TWO BID SYSTEM for the **Supply, Installation, testing and commissioning of Cryogen free platform for the measurement of physical properties under varying Magnetic fields & Temperature** as per technical specification and details given below and BOQ list from the OEM/OPMs original equipment manufacturer/supplier at CPPP i.e. **https://eprocure.gov.in/eprocure/app**. Tender documents may please be downloaded from the E-procurement portal website **https://eprocure.gov.in/eprocure/app** & Institute website **www.iisermohali.ac.in.**

Sd/-

सहायक कुलसचिव (क्रय तथा भंडार)

Assistant Registrar (Stores & Purchase)

NOTE: **This is a domestic Tender according to the DPIIT Order dated 15/07/2017, 04.06.2020 and subsequent amendments to the order for Public Procurement Preference & PROVISION FOR LOCAL SUPPLIERS TOWARDS PREFERENCE TO MAKE IN INDIA. The bidder required to declare on the letter head the percentage of Local content for the quoted instrument and submit with the Technical Bid. Bidder should also give details of the location(s) at which the local value addition is made.**

भारतीय विज्ञान शिक्षा एवं अनुसंधान संस्थान मोहाली

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ई - निविदा आमंत्रण सूचना / E-TENDER NOTICE

Tender Ref.- IISERM(1725)26/27-Pur.	Dated : 31st July 2026

Critical Date Sections

Sr.	Description	Date	Time
1.	Tender Publishing Date and time	31st July 2026	6:00pm
2.	Tender Document download start Date & Time	31st July 2026	6:00pm
3.	Bid Submission start Date &Time	31st July 2026	6:00pm
4.	Bid Submission End date and Time	20th August 2026	Upto 02:30pm
5.	Tender opening Date and Time	21st August 2026	At 3:30pm

1. Online tenders are invited on behalf of the Director, IISER Mohali in **TWO BID SYSTEM** for following item(s) from the original manufacturer/supplier at CPPP i.e. **https://eprocure.gov.in/eprocure/app**. Tender documents may please be downloaded from the E-procurement portal website **https://eprocure.gov.in/eprocure/app** & Institute website **www.iisermohali.ac.in.**

2. Online Tender fee of Rs 590/- (Non-refundable) should be submitted by bidder favoring Registrar, IISER Mohali through NEFT/RTGS as per account details given below. UTR copy to be uploaded along with the technical bid.

3. EARNEST MONEY DEPOSIT (EMD): Tenderer must submit EMD of **Rs. 12,00,000/- (Rupees Twelve Lakh Only)** in the format of e-payment / BG **OR Insurance Surety Bonds (ISB) such as, Bid and Performance Bonds issued by the insurance companies in terms of MoF D.O. Letter No. eR-13011/02/2019-Ins.II(Part1) dated 19.12.2024, irrespective of the items quoted i.e. schedule wise EMD amount as mentioned in the document will not be considered.** Without EMD, the tender will be summarily rejected.

A Bank Guarantee of equivalent amount from any Indian Nationalized bank/Scheduled Commercial Banks in a prescribed format **(Format enclosed below in Annexure - I)** favoring Registrar, IISER Mohali. BG should be valid for a period of 6 months. BG is also extendable depending on requirement. Original Scanned copy of Bank Guarantee needs to be uploaded along with tender which will be verified at the time of tender opening. **Original BG/FDR/DD/ISB copy needs to be send by Post/Courier immediately to Assistant Registrar (S&P), Sector-81, Knowledge city, PO-Manauli, SAS Nagar Mohali-140306, Punjab & it needs to be received within 05 days from the date of tender opening. Non receipt of the hard copy may lead to rejection of the bid. (OR)**

Online E-Payment shall be made through RTGS as per the details given below. However, online payment details i.e. UTR no and proof of current money transaction details are to be enclosed with our technical bid/tender:

Name: IISER Mohali
Account Number 4790101001912
Canara Bank, IISER Mohali Branch
IFSC : CNRB0004790

a) Request for adjustment of dues from the Corporation towards EMD will not be entertained.

b) **Refund of EMD :-** The EMD of the bidders whose bids are not qualified/not acceptable will be refunded after finalization of tender in the form of e-payment to those bidders who deposited EMD in the form of e payment, without any interest, upon receipt of a written request by the bidder after deducting bank charges, if any. Those who submitted EMD in the form of BGs, the same will be returned duly to the unsuccessful bidders. For successful bidders, EMD will be returned after submission of Security Deposit / PBG (if applicable).

c) **MSMEs in India registered with appropriate authority as per latest notification shall be exempted from EMD payment provided they are registered for the item being quoted. Micro & MSME/NSIC and Firms registered and the firms registered with concerned Ministries/ Departments, the bidders are exempted from payment of Tender Fee/EMD as per GOI notifications/GFR (2017) and Ministry of Finance OM No. F.9/4/2020-PPD dated 12 November 2020 and No. DPE/7(4)/2017-Fin.(Part-I) dated 19.11.2020.**

d) IISER Mohali will not be responsible for any delayed receipt of Original EMD/BG etc. caused by postal authorities/courier services and loss in transit or delay.

ITEM WISE DETAILS

S. No.	Description	Qty. (in units)
1.	**Supply, Installation, testing and commissioning of Cryogen free platform for the measurement of physical properties under varying Magnetic fields & Temperature** **Specifications: - As per Annexure-VI**	**01**

A) IMPORTANT NOTES:-

I. **This is a domestic Tender according to the DPIIT Order dated 15/07/2017, 04.06.2020 and subsequent amendements to the order for Public Procurement Preference & PROVISION FOR LOCAL SUPPLIERS TOWARDS PREFERENCE TO MAKE IN INDIA. Bidders should also give details of Localtions(s) ;at which the local value addition is made. Bidders are requested to furnish the declaration regarding local content/locations in Annexure II through CPPP portal.**

II. **Restriction under Rule 144 (xi) of the General Financial Rules (GFRs), 2017 under sub clause 3, in terms of DOE, MoF No. F.18/37/2020-PPD dated: 8th February, 2021:**

(i) A bidder is permitted to procure raw material, components, sub-assemblies etc. from the vendors from countries which shares a land border with India. Such vendors will not be required to be registered with the Competent Authority, as it is not regarded as "sub-contracting".

(ii) However, in case a bidder has proposed to supply finished goods procured directly/indirectly form the vendors from the countries sharing land border with India, such vendor will be required to be registered with the Competent Authority. Kindly submit the declaration in Annexure-III.

III. The online updated Price BOQ is in INR format. Bids are invited in INR only against domestic tender.

IV. The Online bids should be submitted directly by the original manufacturer/supplier/OEM, the OEM is required to furnish certificate to this effect. If quotation is submitted/filled by any representative/ agent/dealer then they must upload a Authorization Authority certificate from the principal company/OEM.

V. All MSME/NSIC/Startup Units shall be considered as per provisions/rules prescribed by Govt of India.

VI. Auto-extension of last date for E-Tenders has been activated by CPP Portal which has participation 2 bids or less.

B) SUBMISSION OF TENDER

I. All bid/ tender documents are to be uploaded online at Central Public Procurement portal i.e. **https://eprocure.gov.in/eprocure/app** only and in the designated cover/ part on the website against tender ID. Tenders/ bids shall be accepted only through online mode and no manual submission of the same shall be entertained except tender fee. Late tenders will not be accepted.

II. The online bids shall be opened at the office of the Assistant Registrar (S&P), IISER Mohali, on above given date and time. If the tender opening date happens to be on a holiday or non-working day due to any other valid reason, the tender opening process will be attended on the next working day at same time and place. IISER Mohali will not be responsible for any error like missing of schedule data while downloading by the Bidder.

III. **<u>The bidder shall upload the tender documents/NIT duly filled in and stamped by the authorized signatory on each and every page along with all necessary Annexures as per NIT.</u> Tender not submitted/uploaded in the prescribed form and as per the tender terms and conditions shall be liable for rejection.**

<u>Check List of Documents (signed & stamped) to be provided and uploaded by the bidder:</u>

S. No.	Particulars of Documents	Yes/No	Page No. (As per technical bid)
1.	**Tender Notice Document Copy of NIT** **(duly signed and stamped)**		
2.	**EMD as per Annexure-I OR EMD remittance details (UTR/NEFT/RTGS)** **(issued by nationalized / schedule commercial bank in prescribed format)**		
3.	Declaration of Local content/MII, with complete information (if applicable) – **Annexure-II** **(on letter head duly signed and stamped)**		
4.	**Land border sharing declaration in Annexure-III**		
5.	**Technical Compliance Sheet** **(on letter head duly signed and stamped)**		
6.	**Authorization/MAF Certificate** from OEM (principle)/ Manufacturer certificate, if applicable **(signed copy)**		
7.	**Pre Contract Integrity Pact: In Annexure-IV** **(duly signed in letter head with witnesses)**		
8.	**Tender Fee**, if applicable or Exemption Certificate (NSIC/MSME Certificate) **(duly signed and stamped)**		
9.	**Attached copy of PAN Card**		
10.	**Attached copy of GST**		
11.	**Proof of Financial turnover certified by the Chartered Accountant** **a) Minimum Average Annual Turnover of the bidder (Last 3 Years)-3 Crores** **b) OEM Average Turnover (Last 3 Years)-24 Crores**		
12.	**Non-blacklisting declaration, solvency certificates: In Annexure-V**		

**** If checklist is not provided by the bidder along with ABOVE DOCUMENTS the bid shall be summarily rejected.***

IV. The bidder shall upload scanned copy of the PAN Card, GST number duly signed and stamped. **Also bidders applying against "MSME/NSIC Certificate" issued by appropriate Authority, should ensure that the certificate attached is relevant to the area of service/supply. For example, If the tender is for "supply & installation of Desktop"** ***the certificate should be issued for activity/area of "Computer supply and services activities etc" otherwise bid will be REJECTED without notice.***

V. E-procurement system ensures locking on the scheduled date and time. The system will not accept any bid after the scheduled date and time of submission of bid.

C) <u>INSTRUCTIONS</u>

1. The Online bids should be submitted directly by the original manufacturer/supplier, If quotation is submitted/filled by any representative/agent/dealer then they must upload a authority certificate from the principal company for quoting the price otherwise such quotation will be rejected.

2. **The firms should be registered with GST Authorities. A valid PAN /GST Number of the tenderer has to be provided/enclosed/upload with a copy of proof with self attested. PAN and GST Number are required for both as below:**
   i) Principle Company and
   ii) Authorized dealer/distributor/channel partner.

3. The rates offered should be FOR Chandigarh/Mohali in case of firms situated outside Chandigarh/Mohali, and free delivery at the Institute premises in case of local firms. Conditional tenders will be summarily rejected.

4. In case of Ex-godown terms the amount of packaging forwarding freight etc. should clearly be indicated by percentage or lump sum amount. Institute has policy not to make any advance payments towards any purchase, Letter of credit can be opened if required.

5. The items, so supplied will have to be of high quality and grade and in the inspection/test if these are found to be of inferior quality, the same are to be replaced by supplier at their cost within the stipulated period, failing which the EMD of the firm will be forfeit. Delayed supply/non-compliance of complete order may also lead to cancellation of order, if technically found suitable and L-1.

6. Custom Duty, applicable as per GOI Norms.

7. GST, applicable as per GOI Norms.

8. Bidder/s quoting in currency other than Indian Rupee (INR) should explicitly mention the currency in which tender quoted wherever applicable in Technical Bid along the tender documents.

9. The delivery period should be 60-75 days from the date of Purchase Order.

10. **Turnover:-**
    a) **Bidder Turn Over Criteria:** The minimum average annual financial turnover of the bidder during the last three years, ending on 31st March of the previous financial year, should be as indicated in the bid document. Documentary evidence in the form of certified Audited Balance Sheets of relevant periods or a certificate from the Chartered Accountant / Cost Accountant indicating the turnover details for the relevant period shall be uploaded with the bid. In case the date of constitution / incorporation of the bidder is less than 3 year old, the average turnover in respect of the completed financial years after the date of constitution shall be taken into account for this criteria.
    b) **OEM Turn Over Criteria:** The minimum average annual financial turnover of the OEM of the offered product during the last three years, ending on 31st March of the previous financial year, should be as indicated in the bid document. Documentary evidence in the form of certified Audited Balance Sheets of relevant periods or a certificate from the Chartered Accountant / Cost Accountant indicating the turnover details for the relevant period shall be uploaded with the bid. In case the date of constitution / incorporation of the OEM is less than 3 year old, the average turnover in respect of the completed financial years after the date of constitution shall be taken into account for this criteria.

11. The firms are requested to provide/**upload detailed description and specifications together with the detailed drawings, printed leaflets & literature of the article quoted** and also should enclose **Technical Compliance Sheet.** The name of the manufactures and country of manufacture should also invariably be stated. In the absence of these particulars and documents, the quotation is liable for rejection. Tenders not accompanied by detailed information as required, are liable to be rejected.

12. If the bidder is a Micro or Small Enterprise (MSE) as per latest orders issued by Ministry of MSME, the bidder shall be relaxed from the eligibility criteria of "Bidder Turnover" as defined above subject to meeting of quality and technical specifications. If the bidder itself is MSE OEM of the offered products, it would be relaxed from the "OEM Average Turnover" criteria also subject to meeting of quality and technical specifications. The bidder seeking Relaxation from Turnover, shall upload the supporting documents to prove his eligibility for Relaxation.

13. **Preference to Make In India products (For bids < 200 Crore):** Preference shall be given to Class 1 local supplier as defined in public procurement (Preference to Make in India), Order 2017 as amended from time to time and its subsequent Orders/Notifications issued by concerned Nodal Ministry for specific Goods/Products. The minimum local content to qualify as a Class 1 local supplier is denoted in the bid document. If the bidder wants to avail the Purchase preference, the bidder must upload a certificate from the OEM regarding the percentage of the local content and the details of locations at which the local value addition is made along with their bid, failing which no purchase preference shall be granted. In case the bid value is more than Rs 10 Crore, the declaration relating to percentage of local content shall be certified by the statutory auditor or cost auditor, if the OEM is a company and by a practicing cost accountant or a chartered accountant for OEMs other than companies as per the Public Procurement (preference to Make-in -India) order 2017 dated 04.06.2020. Only Class-I and Class-II Local suppliers as per MII order dated 4.6.2020 will be eligible to bid. Non - Local suppliers as per MII order dated 04.06.2020 are not eligible to participate. However, eligible micro and small enterprises will be allowed to participate. The buyers are advised to refer the OM No.F.1/4/2021-PPD dated 18.05.2023 OM_No.1_4_2021_PPD_dated_18.05.2023 for compliance of Concurrent application of Public Procurement Policy for Micro and Small Enterprises Order, 2012 and Public Procurement (Preference to Make in India) Order, 2017.

14. Purchase preference will be given to MSEs having valid Udyam Registration and whose credentials are validated online through Udyam Registration portal as defined in Public Procurement Policy for Micro and Small Enterprises (MSEs) Order, 2012 dated 23.03.2012 issued by Ministry of Micro, Small and Medium Enterprises and its subsequent Orders/Notifications issued by concerned Ministry. If the bidder wants to avail themselves of the Purchase preference, the bidder must be the manufacturer / OEM of the offered product on GeM. Traders are excluded from the purview of Public Procurement Policy for Micro and Small Enterprises and hence resellers offering products manufactured by some other OEM are not eligible for any purchase preference. In respect of bid for Services, the bidder must be the Service provider of the offered Service. Relevant documentary evidence in this regard shall be uploaded along with the bid in respect of the offered product or service and Buyer will decide eligibility for purchase preference based on documentary evidence submitted, while evaluating the bid. If L-1 is not an MSE and MSE Seller (s) has / have quoted price within L-1+ 15% (Selected by Buyer) of margin of purchase preference /price band defined in relevant policy, such MSE Seller shall be given opportunity to match L-1 price and contract will be awarded for 25% (selected by Buyer) percentage of total quantity. The buyers are advised to refer the OM No. F.1/4/2021-PPD dated 18.05.2023 OM_No.1_4_2021_PPD_dated_18.05.2023 for compliance of Concurrent application of Public Procurement Policy for Micro and Small Enterprises Order, 2012 and Public Procurement (Preference to Make in India) Order, 2017. Benefits of MSE will be allowed only if seller is validated on-line in GeM profile as well as validated and approved by Buyer after evaluation of documents submitted.

15. **End User Certificate:** Wherever Bidders are insisting for End User Certificate from the Buyer, same shall be provided in Buyer's standard format only.

16. **Manufacturer Authorization:** Wherever Authorised Distributors/service providers are submitting the bid, Authorisation Form /Certificate with OEM/Original Service Provider details such as name, designation, address, e-mail Id and Phone No. required to be furnished along with the bid.

17. **Scope of supply (Bid price to include all cost components) :** Supply Installation Testing and Commissioning of Goods.

18. Bidder's offer is liable to be rejected if they don't upload any of the certificates / documents sought in the Bid document, ATC and Corrigendum if any.

19. Delivery has to be arranged by the supplier to the concerned research / teaching lab / IWD including unloading and shifting. In case the unloading / shifting is done using Institute's resources, the charges may be deducted from the invoice of the seller.

20. If any information furnished by the bidder is, at any stage found to be incorrect, false or fabricated, the Institute/purchaser shall have the absolute right to forfeit the security deposits, in addition to cancellation of contract, forfeiting the warranty/performance Guarantees and other action in accordance with law, such as black-listing, risk & cost etc.

21. Validity of offer: 180 days.

22. Security deposit/Performance Bank Guarantee @ 5% to 10% of the value of supply order as per norms may be sought from the firms, in terms of Ministry of Education, GOI, OM No. F. No. 29-1/2019-IFD dated 06th April, 2023 for compliance of Ministry of Finance, DoE, GOI, OM No.F.1/2/2023-PPD dated 03.04.2023.

23. The right to reject all or any of the quotation and to split up the requirements for itemized L-1 or relax any or all the above conditions without assigning any reason is reserved by the IISER Mohali. For any corrigendum and addendum please be checked the website https://eprocure.gov.in/eprocure/app and http:/www.iisermohali.ac.in

24. **PRE BID INTEGRITY PACT:** Buyer organization specific Integrity Pact shall have to be complied by all Bidders, if the cost of the equipment/machinery exceeds value of One Crore (as per format) in **Annexure-IV.** Bidders shall have to upload scanned copy of the signed Integrity Pact.

25. The bidder should submit an affidavit on non-judicial stamp paper of Rs. 100/- duly attested by the Executive Magistrate that the tenderer has never been blacklisted as per **Annexure V**.

26. For any queries kindly email : tenders@iisermohali.ac.in.

27. Disputes, if any, shall be subject to jurisdiction in the court of Mohali only.

-Sd/-
सहायक कुलसचिव (क्रय तथा भंडार)
Assistant Registrar (Stores & Purchase)

ANNEXURE-I

PROFORMA FOR BANK GUARANTEE TOWARDS EMD
(TO BE USED BY ALL NATIONALISED BANKS/ SCHEDULED COMMERCIAL BANKS)

Ref. Bank Guarantee No.
Date:

To
The Registrar
Indian Institute of Science Education and Research Mohali
Sector – 81, Knowledge City,
PO – Manauli, SAS Nagar,
Mohali – 140 306, Punjab.

Dear Sir,

WHEREAS M/s. _____ having its registered office at _____ (hereinafter called "the supplier") has undertaken in pursuance of Contract No. _____ Dated _____ against Supply of _____ (hereinafter called "the order")

AND WHEREAS it has been stipulated by you in the said order that the Supplier shall furnish you with a bank Guarantee by a recognized bank for the sum specified therein as security for compliance with the supplier's performance obligations in accordance with the order.

AND WHEREAS We, _____ Bank a body Corporate constituted under _____ having its Head Office at _____, having amongst others a branch office at _____ (hereinafter referred to as the "The Bank" which expression shall unless repugnant to the context or meaning thereof, include all its successors, administrators, executors and assignees) have agreed to give the Supplier a Guarantee at the request of the supplier.

THEREFORE WE _____ Bank hereby affirm that we are Guarantors and responsible to you, on behalf of the Supplier, up to a total of Rs. _____ [Rupees _____ Only] and we undertake to pay you, upon your first written demand declaring the Supplier to be in default under the Contract and without cavil or argument, any sum or sums within the limits of _____ [Rupees _____Only] as aforesaid, without your needing to prove or to show grounds or reasons for your demand or the sum specified therein.

This guarantee is valid until _____.

Notwithstanding anything contained hereinabove.

i) Our liability under this Bank Guarantee shall not exceed Rs. _____ [Rupees _____only]
ii) This Bank Guarantee shall be valid upto _____.
iii) We are liable to pay the guaranteed amount or any part hereby under this bank guarantee only and only if you serve upon us a written claim or demand on or before _____.

Dated the _____ day of _____ 2024.

ANNEXURE-II

SELF DECLARATION
[For Local Content of Products, Services or Works]

File/Tender No. ……..
Tender ID: …….. Dated: ……

To,

The Director
Indian Institute of Science Education and Research
(Established by Ministry of Education, Govt. of India)
Sector-81, Knowledge city, PO-Manauli,
SAS Nagar Mohali-140306, Punjab

1. With reference to Order no P.-45021/2/2017 PP (BE-II) dated 04.06.2020 and No. P-45021/2/2017-PP(BE-II) dated 16-09-2020 of DPIIT, Ministry of Commerce and Industry, Govt. of India, we fall under the following category of supplier (please tick the correct category) for the items for which this tender has been floated and being bided.

   - ☐ Class I local supplier – has local content equal to more than 50%. Local contents added at _____ (name of location).
   - ☐ Class II local supplier – has local content more than 20% but less than 50%. Local contents added at _____ (name of location).
   - ☐ Non-local supplier – has local content less than or equal to 20%. Local contents added at _____ (name of location).

2. We are solely responsible for the abovementioned declaration in respect of category of supplier. False declarations will be in breach of the Code of Integrity under Rule 175(1)(i)(h) of the General Financial Rules for which we may can be debarred for up to 2 years as per Rule 151(iii) of the General Financial Rules along with such other actions as may be permissible under law.

Signature & seal of the company

Name and address of the organization
…….
…….
…….

Date: ……

Note: In cases of procurement for a value in excess of Rs. 10 crores, the 'Class-I local supplier' / 'Class-II local supplier' shall be required to provide a certificate from the statutory auditor or cost auditor of the company (in the case of companies) or from a practicing cost accountant or practicing chartered accountant (in respect of suppliers other than companies) giving the percentage of local content.

ANNEXURE-III

(To be submitted on the letterhead of the company/firm)

CERTIFICATE BY THE BIDDER (FOR TENDERS)

I have read the clause regarding restrictions on procurement from bidder of as country which shares a land border with India.

a) I certify that this bidder is not form such a company

or

b) if from such a country, has been registered with the Competent Authority (copy of Registration Certificate enclosed).

I hereby certify that the bidder fulfills all requirements in this regard and is eligible to be considered. This is in terms of Restriction under Rule 144 (xi) of the General Financial Rules (GFRs) 2017 under sub clause 3, in terms of DOE, MoF No. F.18/37/2020-PPD dated: 8th February, 2021.

Date: Name of the company/firm/organization

Place: Signature with Date and stamp of the bidder

ANNEXURE-IV
PRE BID INTEGRITY PACT

General

This pre-bid Agreement (hereinafter called the Integrity Pact) is made on _____ day of the month of _____ 2025, between, on one hand, the President of India acting through Shri _____, Designation of the officer, Ministry of Education /Department, Government of India (hereinafter called the "BUYER", which expression shall mean an d include, unless the context otherwise requires, his successors in office and assigns) of the First Part and M/s _____ represented by Shri _____. Chief Executive Officer (hereinafter called the "BIDDER/Seller" which expression shall mean and include, unless the context otherwise requires, his successors and permitted assigns) of the Second Part.

WHEREAS the BUYER proposes to procure (Name of the Stores/Equipment/Item) and the BIDDER/Seller is willing to offer/has offered the stores and

WHEREAS the BIDDER is a private company/public company/Government undertaking/partnership/registered export agency, constituted in accordance with the relevant law in the matter and the BUYER is a Ministry of Education/Department of the Government of India ~~/PSU~~ performing its functions on behalf of the President of India.

NOW, THEREFORE,

To avoid all forms of corruption by following a system that is fair, transparent and free from any influence/prejudiced dealings prior to, during and subsequent to the currency of the contract to be entered into with a view to :-

Enabling the BUYER to obtain the desired said stores/equipment at a competitive price in conformity with the defined specifications by avoiding the high cost and the distortionary impact of corruption on public procurement, and

Enabling BIDDERs to abstain from bribing or indulging in any corrupt practice in order to secure the contract by providing assurance to them that their competitors will also abstain from bribing and other corrupt practices and the BUYER will commit to prevent corruption, in any form, by its officials by following transparent procedures.

The parties hereto hereby agree to enter into this integrity Pact and agree as follows:

Commitments of the BUYER

1.1 The BUYER undertakes that no official of the BUYER, connected directly or indirectly with the bid/contract, will demand, take a promise for or accept, directly or through intermediaries, any bribe, consideration, gift, reward, favour or any material or immaterial benefit or any other advantage from the BIDDER, either for themselves or for any person, organisation or third party related to the bid/contract in exchange for an advantage in the bidding process, bid evaluation, contracting or implementation process related to the contract.

1.2 The BUYER will, during the pre-contract stage, treat all BIDDERs alike, and will provide to all BIDDERs the same information and will not provide any such information to any particular BIDDER which could afford an advantage to that particular BIDDER in comparison to other BIDDERs.

1.3 All the officials of the BUYER will report to the appropriate Government office any attempted or completed breaches of the above commitments as well as any substantial suspicion of such a breach.

2. In case any such preceding misconduct on the part of such official(s) is reported by the BIDDER to the BUYER with full and verifiable facts and the same is prima facie found to be correct by the BUYER, necessary disciplinary proceedings, or any other action as deemed fit, including criminal proceedings may be initiated by the BUYER and such a person shall be debarred from further dealings related to the contract process. In such a case while an enquiry is being conducted by the BUYER the proceedings under the contract would not be stalled.

Commitments of BIDDERs

3. The BIDDER commits itself to take all measures necessary to prevent corrupt practices, unfair means and illegal activities during any stage of its bid or during any pre-contract or post-contract stage in order to secure the contract or in furtherance to secure it and in particular commit itself to the following:-

3.1 The BIDDER will not offer, directly or through intermediaries, any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the BUYER, connected directly or indirectly with the bidding process, or to any person, organisation or third party related to the contract in exchange for any advantage in the bidding, evaluation, contracting and implementation of the contract.

3.2 The BIDDER further undertakes that it has not given, offered or promised to give, directly or indirectly any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the BUYER or otherwise in procuring the Contract or forbearing to do or having done any act in relation to the obtaining or execution of the contract or any other contract with the Government for showing or forbearing to show favour or disfavour to any person in relation to the contract or any other contract with the Government.

3.3* BIDDERs shall disclose the name and address of agents and representatives and Indian BIDDERs shall disclose their foreign principals or associates.

3.4* BIDDERs shall disclose the payments to be made by them to agents/brokers or any other intermediary, in connection with this bid/contract.

3.5* The BIDDER further confirms and declares to the BUYER that the BIDDER is the original manufacturer/integrator/authorised government sponsored export entity of the defence stores and has not engaged any individual or firm or company whether Indian or foreign to intercede, facilitate or in any way to recommend to the BUYER or any of its functionaries, whether officially or unofficially to the award of the contract to the BIDDER, nor has any amount been paid, promised or intended to be paid to any such individual, firm or company in respect of any such intercession, facilitation or recommendation.

3.6 The BIDDER, either while presenting the bid or during pre-contract negotiations or before signing the contract, shall disclose any payments he has made, is committed to or intends to make to officials of the BUYER or their family members, agents, brokers or any other intermediaries in connection with the contract and the details of services agreed upon for such payments.

3.7 The BIDDER will not collude with other parties interested in the contract to impair the transparency, fairness and progress of the bidding process, bid evaluation, contracting and implementation of the contract.

3.8 The BIDDER will not accept any advantage in exchange for any corrupt practice, unfair means and illegal activities.

3.9 The BIDDER shall not use improperly, for purposes of competition or personal gain, or pass on to others, any information provided by the BUYER as part of the business relationship, regarding plans, technical proposals and business details, including information contained in any electronic data carrier. The BIDDER also undertakes to exercise due and adequate care lest any such information is divulged.

3.10 The BIDDER commits to refrain from giving any complaint directly or through any other manner without supporting it with full and verifiable facts.

3.11 The BIDDER shall not instigate or cause to instigate any third person to commit any of the actions mentioned above.

3.12 If the BIDDER or any employee of the BIDDER or any person acting on behalf of the BIDDER, either directly or indirectly, is a relative of any of the officers of the BUYER, or alternatively, if any relative of an officer of the BUYER has financial interest/stake in the BIDDER's firm, the same shall be disclosed by the BIDDER at the time of filing of tender.

The term 'relative' for this purpose would be as defined in Section 6 of the Companies Act 1956.

3.13 The BIDDER shall not lend to or borrow any money from or enter into any monetary dealings or transactions, directly or indirectly, with any employee of the BUYER.

4. Previous Transgression

4.1 The BIDDER declares that no previous transgression occurred in the last three years immediately before signing of this Integrity Pact, with any other company in any country in respect of any corrupt practices envisaged hereunder or with any Public Sector Enterprise in India or any Government Department in India that could justify BIDDER's exclusion from the tender process.

4.2 The BIDDER agrees that if it makes incorrect statement on this subject, BIDDER can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason.

5. Earnest Money (Security Deposit)

5.1 While submitting commercial bid, the BIDDER shall deposit an amount _____ (to be specified in RFP) as Earnest Money/Security Deposit, with the BUYER through any of the following instruments:

(i) Bank Draft or a Pay Order in favour of _____

(ii) A confirmed guarantee by an Indian Nationalised Bank, promising payment of the guaranteed sum to the BUYER on demand within three working days without any demur whatsoever and without seeking any reasons whatsoever. The demand for payment by the BUYER shall be treated as conclusive proof of payment.

(iii) Any other mode or through any other instrument (to be specified in the RFP).

5.2 The Earnest Money/Security Deposit shall be valid upto a period of five years or the complete conclusion of the contractual obligations to the complete satisfaction of both the BIDDER and the BUYER, including warranty period, whichever is later.

5.3 In case of the successful BIDDER a clause would also be incorporated in the Article pertaining to Performance Bond in the Purchase Contract that the provisions of Sanctions for Violation shall be applicable for forfeiture of Performance Bond in case of a decision by the BUYER to forfeit the same without assigning any reason for imposing sanction for violation of this Pact.

5.4 No interest shall be payable by the BUYER to the BIDDER on Earnest Money/Security Deposit for the period of its currency.

6. <u>Sanctions for Violations</u>

6.1 Any breach of the aforesaid provisions by the BIDDER or any one employed by it or acting on its behalf (whether with or without the knowledge of the BIDDER) shall entitle the BUYER to take all or any one of the following actions; wherever required:-

(i) To immediately call off the pre contract negotiations without assigning any reason or giving any compensation to the BIDDER. However, the proceedings with the other BIDDER(s) would continue.

(ii) The Earnest Money Deposit (in pre-contract stage) and/or Security Deposit/Performance Bond (after the contract is signed) shall stand forfeited either fully or partially, as decided by the BUYER and the BUYER shall not be required to assign any reason therefore.

(iii) To immediately cancel the contract, if already signed, without giving any compensation to the BIDDER.

(iv) To recover all sums already paid by the BUYER, and in case of an Indian BIDDER with interest thereon at 2% higher than the prevailing Prime Lending Rate of State Bank of India, while in case of a BIDDER from a country other than India with interest thereon at 2% higher than the LIBOR. If any outstanding payment is due to the BIDDER from the BUYER in connection with any other contract for any other stores, such outstanding payment could also be utilised to recover the aforesaid sum and interest.

(v) To encash the advance bank guarantee and performance bond/warranty bond, if furnished by the BIDDER, in order to recover the payments, already made by the BUYER, along with interest.

(vi) To cancel all or any other Contracts with the BIDDER. The BIDDER shall be liable to pay compensation for any loss or damage to the BUYER resulting from such cancellation/rescission and the BUYER shall be entitled to deduct the amount so payable from the money(s) due to the BIDDER.

(vii) To debar the BIDDER from participating in future bidding processes of the Government of India for a minimum period of five years, which may be further extended at the discretion of the BUYER.

(viii) To recover all sums paid in violation of this Pact by BIDDER(s) to any middleman or agent or broker with a view to securing the contract.

(ix) In cases where irrevocable Letters of Credit have been received in respect of any contract signed by the BUYER with the BIDDER, the same shall not be opened.

(x) Forfeiture of Performance Bond in case of a decision by the BUYER to forfeit the same without assigning any reason for imposing sanction for violation of this Pact.

6.2 The BUYER will be entitled to take all or any of the actions mentioned at para 6.1(i) to (x) of this Pact also on the Commission by the BIDDER or any one employed by it or acting on its behalf (whether with or without the knowledge of the BIDDER), of an offence as defined in Chapter IX of the Indian Penal code, 1860 or Prevention of Corruption Act, 1988 or any other statute enacted for prevention of corruption.

6.3 The decision of the BUYER to the effect that a breach of the provisions of this Pact has been committed by the BIDDER shall be final and conclusive on the BIDDER. However, the BIDDER can approach the Independent Monitor(s) appointed for the purposes of this Pact.

7. Fall Clause

7.1 The BIDDER undertakes that it has not supplied/is not supplying similar product/systems or subsystems at a price lower than that offered in the present bid in respect of any other Ministry of Education/Department of the Government of India ~~or PSU~~ and if it is found at any stage that similar product/systems or sub systems was supplied by the BIDDER to any other Ministry of Education/Department of the Government of India ~~or a PSU~~ at a lower price, then that very price, with due allowance for elapsed time, will be applicable to the present case and the difference in the cost would be refunded by the BIDDER to the BUYER, if the contract has already been concluded.

8. Independent Monitors

8.1 The BUYER has appointed Independent Monitors (hereinafter referred to as Monitors) for this Pact in consultation with the Central Vigilance Commission (Names and Addresses of the Monitors to be given).

8.2 The task of the Monitors shall be to review independently and objectively, whether and to what extent the parties comply with the obligations under this Pact.

8.3 The Monitors shall not be subject to instructions by the representatives of the parties and perform their functions neutrally and independently.

8.4 Both the parties accept that the Monitors have the right to access all the documents relating to the project/procurement, including minutes of meetings.

8.5 As soon as the Monitor notices, or has reason to believe, a violation of this Pact, he will so inform the Authority designated by the BUYER.

8.6 The BIDDER(s) accepts that the Monitor has the right to access without restriction to all Project documentation of the BUYER including that provided by the BIDDER. The BIDDER will also grant the Monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his project documentation. The same is applicable to Subcontractors. The Monitor shall be under contractual obligation to treat the information and documents of the BIDDER/Subcontractor(s) with confidentiality.

8.7 The BUYER will provide to the Monitor sufficient information about all meetings among the parties related to the Project provided such meetings could have an impact on the contractual relations between the parties. The parties will offer to the Monitor the option to participate in such meetings.

8.8 The Monitor will submit a written report to the designated Authority of BUYER/Secretary in the Department/ within 8 to 10 weeks from the date of reference or intimation to him by the BUYER / BIDDER and, should the occasion arise, submit proposals for correcting problematic situations.

9. Facilitation of Investigation

In case of any allegation of violation of any provisions of this Pact or payment of commission, the BUYER or its agencies shall be entitled to examine all the documents including the Books of Accounts of the BIDDER and the BIDDER shall provide necessary information and documents in English and shall extend all possible help for the purpose of such examination.

10. Law and Place of Jurisdiction

This Pact is subject to Indian Law. The place of performance and jurisdiction is the seat of the BUYER.

11. Other Legal Actions

The actions stipulated in this Integrity Pact are without prejudice to any other legal action that may follow in accordance with the provisions of the extant law in force relating to any civil or criminal proceedings.

12. Validity

12.1 The validity of this Integrity Pact shall be from date of its signing and extend upto 5 years or the complete execution of the contract to the satisfaction of both the BUYER and the BIDDER/Seller, including warranty period, whichever is later. In case BIDDER is unsuccessful this Integrity Pact shall expire after six months from the date of the signing of the contract.

12.2 Should one or several provisions of this Pact turn out to be invalid; the remainder of this Pact shall remain valid. In this case, the parties will strive to come to an agreement to their original intentions.

13. The parties hereby sign this Integrity Pact at _____ on _____

BUYER
Name of the Officer.
Designation
IISER, MOHALI
Deptt./MINISTRY of Education
Govt. of India

BIDDER
CHIEF EXECUTIVE OFFICER

Witness
1. _____

2. _____

Witness
1. _____

2. _____

**Provisions of these clauses would need to be amended/deleted in line with the policy of the BUYER in regard to involvement of Indian agents of foreign suppliers.*

ANNEXURE-V

CERTIFICATE FOR NON-BLACK LISTING

(**TO BE FURNISHED ON NON-JUDICIAL STAMP PAPER WORTH RS. 100/-)**

We. (Name of firm) do hereby certify that our company/firm/Manufacturers / Suppliers/ Dealers has not been black listed/banned /suspended/ debarred by any Government Department/Govt. Educational/Research Institute during the last three years.

Place:
Date:

Signature of Authorized Signatory
……
……Name of Signatory

ANNEXURE-VI

Technical Specifications for Procurement of
Integrated Cryogen-Free Physical Property Measurement Platform

1 Scope of Supply & General Requirements

This technical specification document outlines the minimum mandatory configurations required for the supply, installation, and commissioning of an integrated, automated, cryogen-free physical property measurement platform. The instrument will be deployed for high-precision investigations of quantum materials, low-dimensional electronic states, and correlated electron systems.
The proposed system shall be a fully integrated, cryogen-free low-temperature physical property measurement platform capable of performing automated measurements of electrical resistivity, relaxation-based heat capacity, and AC and dc magnetic susceptibility over the specified temperature and magnetic field ranges. The system must operate seamlessly without the need for liquid cryogens (liquid helium or liquid nitrogen), utilizing a fully automated closed-cycle helium gas refrigeration infrastructure.

The platform shall comprise a base measurement chamber, a superconducting magnet, and a modular architecture supporting interchangeable low-temperature inserts and measurement options. The complete turn-key system shall include dedicated inserts and associated electronics for electrical transport (resistivity), relaxation calorimetry (heat capacity), and AC magnetic susceptibility measurements. In addition, the system shall accommodate advanced low-temperature environments through interchange-able probe inserts, including a ^{3}He sorption refrigerator and a ^{3}He/^{4}He dilution refrigerator, as detailed in the corresponding sections of this specification.

All measurement modules, cryogenic subsystems, and control electronics shall be fully integrated under a unified software environment to enable automated experiment control, data acquisition, temperature regulation, magnetic field control, and seamless switching between measurement configurations.

2 Base Cryogen-Free Platform & Variable Temperature Chamber

The primary platform must comprise an automated variable temperature cryostat powered by an integrated pulse-tube cryocooler loop that chills the system's radiation shields and superconducting magnet assembly concurrently.

2.1 Core Temperature Control Metrics

- **Cooling Performance:** Initial cool-down time should be less than 30 Hours. After initial cool-down, the system must achieve stable cooling from room temperature (300 K) down to the base threshold (1.9 K) in less than 6 hours.
- **Standard Operational Range:** Continuous control spanning from a minimum of 1.9 K up to 400 K.
- **Temperature Control:** Continuous Low Temperature Control and Temperature Sweep modes with slew rate of 0.01 to 5 K/min.
- **Temperature Stability:** Must be superior to ± 0.1% or ±10 mK (whichever is greater) for stable points below 20 K, and superior to ±0.05% above 20 K. This must hold in all available magnetic fields.
- **Thermal Transition Behaviour:** The temperature regulation architecture must cross the su-perfluid helium lambda transition boundary (2.17 K) continuously without thermal undershoots, control oscillations, or system state instabilities.

2.2 Superconducting Magnet Control System

- **Maximum Magnetic Field:** Minimum longitudinal bi-directional field capability of 9 T or higher. Vendors can quote separately for 12 T and 14 T systems.
- **Operational Modes:** Must support true **persistent mode operation** utilizing an automated superconducting switch to guarantee zero current-supply noise and minimal thermal drift during static long-term data collection.
- **Field Ramping Rate:** The system must feature a high-performance magnet power supply capable of continuous field charging rates up to a minimum of 100 Oe/s or better.
- **Field Resolution & Control:** Magnet power supply must deliver a minimum current resolution ensuring a magnetic field step refinement of 0.05 Oe or better. Highly stable, low-noise bi-polar power supply with overvoltage protection.
- **Field Spatial Uniformity:** Homogeneity must be better than 0.01% over a cylindrical volume of 5 cm length centered at the magnet's geometric midpoint.
- **Remanent Field Reduction:** Must feature an automated demagnetization/oscillating routine to minimize trapped magnetic flux when ramping down to zero field.

2.3 Cryogen-Free Infrastructure & Thermal Sensors

- **Cooler Technology:** Closed-cycle pulse-tube cryocooler coupled to a fully compatible water-cooled helium compressor unit.
- **Thermal Sensor Architecture:** For high-accuracy temperature measurement immune to extreme magnetic fields, the cryostat loop must be equipped with calibrated, field-insensitive resistance thermometers (e.g. Cernox or equivalent) located at critical diagnostic nodes, and at all primary sample measurement interfaces, to track the true in-field sample and system temperatures.
- **Helium Conservation Module:** Zero net loss of internal working fluid during normal running loops, long-term standby periods, or high-temperature cycles. The cryostat must generate and continuously re-condense its own internal liquid helium reservoir directly from a sealed internal gas loop.
- **Maintenance Cycles:** Compressor cold head must offer a continuous operation timeline of at least 20,000 running hours before requiring major service overhauls.

3 Physical Property Measurement Options

3.1 High-Sensitivity Electrical Transport Option

A precision measurement electronics package must be supplied for executing multiple automated elec-trical transport characterisation routines, fully compatible with the standard base chamber, the ^{3}He sorption insert (Section 4.3), and the millikelvin dilution refrigerator insert.

- **Supported Measurement Capabilities:** Four-point DC resistance, AC resistance, high-precision differential resistance (dV/dI profiling), 5-probe Hall effect tracking, critical current of superconduc-tors, and complete programmable current-voltage (I-V) curves.
- **Channel nos.:** A minimum of two fully independent, isolated measurement channels configured for parallel data acquisition.
- **Current Excitation Range:** Programmable continuous current sourcing from 10 nA up to 100 mA or better.
- **AC Modulation Frequency:** Fully adjustable excitation frequency range from 0.1 Hz up to 1 kHz or wider.

- **Voltage Noise Performance:** Input pre-amplifiers must exhibit an ultra-low noise floor of 1 nV/$\sqrt{\text{Hz}}$ or lower at 1 kHz.
- **Measurable Resistance Range:** Must reliably resolve values from 1 $\mu\Omega$ to 1 GΩ.
- **Accuracy an sensitivity:** Accuracy 0.2% (for $R < 200$ KΩ) or less and relative sensitivity of $\sim \pm 1\ n\Omega$.
- **Millikelvin Adaptability:** Must include a dedicated sample mounting stage pre-wired with ultra-low-thermal-conductance, low-noise coaxial or twisted-pair wiring matched to the thermal constraints of both the ^{3}He and dilution refrigerator inserts as described in later sections.

3.2 Thermal Relaxation Heat Capacity Option

An automated specific heat measurement system utilising a relaxation technique must be integrated to characterise small solid-state samples. This option must interoperate with both the standard cryostat (Section 2), the ^{3}He insert (Section 4.2), and the dilution fridge insert (Section 5).

- **Temperature Compatibility Matrix:** Fully operational from 1.9 K to 400 K using the stan-dard cryostat, and extendable down to 0.3 K when mounted to the ^{3}He-specific calorimeter stage (Section 4.2), and further to 50 mK with the dilution refrigerator calorimeter stage.
- **Calorimetry Technique:** Include Cryo-pump for high vacuum in the sample chamber and all other accessories.
- **Calorimetry Technique:** Micro-machined calorimeter platform with an integrated thin-film heater and high-resolution thermometer array.
- **Measurement Accuracy & Precision:** Absolute accuracy superior to 5% from 2 K to 300 K; operational repeatability better than 2%.
- **Resolution:** Resolution: better than 10 nJ/K @ 2 K.
- **Sample Mass:** Optimised for solid specimens, single crystals, or thin films in the range 1 mg to 20 mg.
- **Automated Background Correction:** Software must feature an automated addenda subtraction wizard to measure, catalogue, and isolate platform and thermal grease contributions.

3.3 Thermal Transport Measurement Option

The system shall provide a dedicated thermal transport measurement option for quantitative characterization of thermoelectric and thermal properties of bulk, single-crystal, thin-film, and other suitable sample geometries. The module shall be fully integrated with the cryogenic platform and measurement software, allowing automated temperature sweeps and simultaneous electrical and thermal measurements.

- **Temperature Range:** Continuous operation from a minimum of 1.9 K to at least 390 K or wider.
- **Thermal Conductance Measurement Accuracy:** The system shall provide thermal con-ductance measurements with an accuracy of $\pm$5% or better.
- **Seebeck Coefficient Measurement Accuracy:** The thermopower measurement capability shall provide a typical Seebeck coefficient accuracy of $\pm$5% or better.

- **Seebeck Measurement Range:** Minimum measurable Seebeck coefficient range shall extend from approximately 1 μV/K to 1 V/K or wider.
- **AC Electrical Resistivity Capability:** The thermal transport module shall support AC resistivity measurements with specifications equivalent to the dedicated electrical transport mea-surement option, including compatible current excitation, voltage detection, resolution, and tem-perature range.

3.4 A.C. Magnetic Susceptibility Measurement Option

The system shall include a fully integrated alternating current (AC) magnetic susceptibility measure-ment option capable of high-sensitivity magnetic response measurements over the complete temperature range of the cryogenic platform. The module shall support automated frequency, excitation-field, and temperature sweeps.

- **Temperature Range:** Continuous AC susceptibility measurements from a minimum of 1.9 K to 350 K or wider.
- **AC Excitation Frequency Range:** Minimum operating frequency range from 10 Hz to 10 kHz or wider.
- **AC Excitation Field Amplitude:** Adjustable AC magnetic field amplitude ranging from a few mOe up to at least 10 Oe.
- **AC Magnetic Sensitivity:** The system shall provide an AC magnetic moment sensitivity better than 2×10^{-8} emu (2×10^{-11} A m^2) at 10 kHz.
- **DC Magnetic Sensitivity:** The system shall provide DC magnetic moment measurement sen-sitivity covering a range better than 2.5×10^{-5} emu to 5 emu (2.5×10^{-8} A m^2 to 5×10^{-3} A m^2).

3.5 Vibrating Sample Magnetometer (VSM) Measurement Option

The system shall include an integrated vibrating sample magnetometer option for high-sensitivity magnetic measurements. The VSM shall operate within the same superconducting magnet environment and support automated magnetic field and temperature-dependent magnetization measurements.

- **Measurement Geometry:** Longitudinal configuration with magnetic field direction, sample vibration axis, and magnetic moment detection aligned along the vertical axis.
- **Sensitivity:** Root-mean-square magnetic moment sensitivity shall be better than 10^{-6} emu with a one-second averaging time.
  - **Noise Performance and Accuracy:** Relative noise shall be $\leq 6 \times 10^{-7}$ emu/$\sqrt{\text{Hz}}$ or lower, with absolute measurement accuracy of 0.5% or better.
  - **Sample Oscillation Amplitude:** Adjustable vibration amplitude range from 0.1 mm to 5 mm.
  - **Sample Holders:** The system shall provide compatible VSM sample holders for powder samples, bulk polycrystalline samples, single crystals, thin films, and liquid sample configurations.
- **Automation and Integration:** The VSM option shall be fully integrated with the platform control software for automated temperature, magnetic field, and data acquisition sequences.

4. ^{3}He Sorption Refrigerator Insert Option

^{3}He Insert — Sub-Kelvin Sorption Refrigerator

The system must support a removable, closed-cycle ^{3}He sorption refrigerator insert that fits within the base system's standard sample chamber without modification to the main cryostat. This insert provides continuous sub-Kelvin operation without requiring any external supply of ^{3}He gas or a helium liquefier, and without venting ^{3}He to the atmosphere under normal operating conditions.

4.1 Core ^{3}He Insert Performance

Table 1: Mandatory Performance Specifications — ^{3}He Sorption Refrigerator Insert

Parameter	Mandatory Specification
Base Temperature	≤ 0.3 K at sample stage under no-load conditions.
Cooling Power	Cooling power ≥ ≥200 μW at 0.40 K. Vendor shall provide cooling power curve between base temperature and 1 K.
Continuous Hold Time	≥ 12 hours operation at or below 0.4 K after one condensation cycle.
Condensation Time	Complete ^{3}He condensation from 4 K starting condition in ≤ 90 minutes.
Operational Field Range	Compatible with full magnet field range (9 T) during condensation and measurement
Gas Inventory and Handling	Fully sealed closed-cycle ^{3}He circuit. Approx. 8 litres STP equivalent working gas. Bidder shall specify charge size and supply source.
Thermometry	Field-insensitive calibrated thermometer (RuO_2 or equivalent) at sample stage. Accuracy 10 mK at base temperature with trace-able calibration.
Sample Interface	Compatible with standard sample-holder interface. All measure-ment options in Sections 4.2 and 4.3 operable without insert re-moval.
Safety Interlock	Hardware-level automated warm-up protection for compressor fault, power loss, or abnormal pressure events.

4.2 Sub-Kelvin Heat Capacity Option (^{3}He Insert)

A dedicated calorimeter stage for relaxation heat capacity measurements must be available for use with the ^{3}He insert, providing seamless extension of the standard (1.9 K) heat capacity capability into the sub-Kelvin regime.

- **Temperature Range:** 0.3 K to 4 K in ^{3}He mode; hand-off to the standard heat capacity platform above 1.9 K must be seamless with no sample change required.
- **Heat Capacity Range:** ≥ 1 nJ/K to ≤ 100 μJ/K.
- **Measurement Technique:** Thermal relaxation calorimetry; two-time-constant (2τ) analysis model must be supported for accurate deconvolution of sample and addenda contributions at low temperatures.
- **Calorimeter Platform:** Dedicated low-thermal-mass platform with an integrated resistive heater and calibrated thermometer; thermal mass and platform dimensions to be stated by bidder.
- **Accuracy:** Absolute accuracy ≤ 5% across the full ^{3}He temperature range.
- **Addenda Correction:** Automated background (addenda) measurement and subtraction supported natively in the control software.
- **Software Integration:** Calorimetry sequences and data analysis accessible from the same software interface as the standard heat capacity module; no separate software licence required.

4.3 Sub-Kelvin Electrical Transport Option (^{3}He Insert)

A dedicated sample wiring and mounting stage must extend the standard electrical transport measurement capability (Section 3.1) to sub-Kelvin temperatures within the ^{3}He insert.

- **Temperature Range:** 0.3 K to 4 K (^{3}He mode), with software-transparent hand-off to the standard transport module above 1.9 K.
- **Resistance Range:** 1 $\mu\Omega$ to 1 MΩ; 4-wire configuration mandatory.
- **Simultaneous Channels:** $\geq$ 4 independent, isolated measurement channels operating in parallel.
- **Wiring Thermal Conductance:** All wiring from the sub-Kelvin sample stage to room-temperature electronics must employ low-thermal-conductance materials (e.g. superconducting NbTi, manganin, or phosphor bronze, as appropriate); construction and thermal budget to be described by bidder.
- **Excitation Control:** Per-channel, independently adjustable AC or DC current excitation; excitation amplitude must be adjustable to levels sufficiently low to prevent measurable Joule heating of the sample at 0.3 K. Minimum usable excitation current $\leq$ 100 nA.
- **EMI and RF Filtering:** Adequate filtering on all lines entering the low-temperature stage to suppress RF-induced parasitic heating; filter architecture to be described by bidder.
- **Software Integration:** Sub-Kelvin transport sequences supported natively within the standard transport control software module; no separate software required.

4.4 Millikelvin AC Magnetic Susceptibility Option

A low-temperature AC magnetic susceptibility measurement option is also sought operating down to millikelvin temperatures with either the ^{3}He or DR inserts.

- **Operating Temperature Range:** Fully automated measurements from 4 K down to base temperature.
- **Coil Architecture:** Integrated, low-mass mutual inductance coil assembly (primary AC excitation coil and a balanced pair of counter-wound secondary pick-up loops) mounted directly to the dilution refrigerator mixing chamber stage.
- **AC Drive Amplitude:** Programmable oscillating field from 0.005 Oe $\geq$ up to 4 Oe to prevent excessive eddy-current heating at millikelvin temperatures.
- **Frequency Range:** Continuous AC spectrum from $\geq$ 10 Hz to $\geq$ 10 kHz.
- **Moment Sensitivity:** Phase-sensitive lock-in detection providing an absolute magnetic moment sensitivity of 2×10^{-7} emu or better at base temperature.
- **Data Extraction:** Control software must simultaneously separate, calculate, and plot both the real (χ', in-phase) and imaginary (χ'', out-of-phase) components of the AC susceptibility tensor.

5. Millikelvin Dilution Refrigerator (DR) Insert Option

The system must also support a removable, fully integrated dilution refrigerator insert designed to fit seamlessly into the primary base sample space chamber, driving the system into the millikelvin regime. This insert is independent of and interchangeable with the ^{3}He sorption insert described in Section 4.

Table 2: Mandatory Performance Specifications — Millikelvin Dilution Refrigerator Insert

Parameter	Mandatory Specification
Operating Range	Continuous low-temperature baseline operation from 4 K down to a minimum base limit of 50 mK or lower.
Cooling Power	A verified cooling power of about 10 μW at 50 mK, 25 μW at 100 mK, and 50 μW at 200 mK.
Gas Handling	Fully automated, software-interfaced gas handling console for safe storage, oil filtration, mixture clean-up, and continuous circulation of the ^{3}He/^{4}He working fluid.
Integration	Probe insert must lock securely into the base system's sample socket interface. All low-temperature thermometry and sample stage parameters must be controlled natively through the primary system software.
Thermometry	Calibrated, field-insensitive resistance thermometers (e.g. Cernox or equivalent) calibrated for high accuracy down to 40 mK under magnetic fields up to 9 T.

5.1 Millikelvin Measurement Options

We are looking for electrical transport, heat capacity, thermal transport, and ac magnetic susceptibility measurements in the temperature range of operation of the DR, with seamless temperature overlap with these measurements at the crossover temperatures.

6 Software Automation, Interfacing & Diagnostics

- **Core Software Architecture:** Single, integrated, graphics-driven Windows-based software environment regulating temperature loops, magnetic field ramps, vacuum gauge controls, and experimental acquisition parameters across all inserts and measurement options.
- **Sequence Automation Scripting:** Advanced programmable sequence macro editor allowing completely unattended, multi-day experimental scripts containing nested temperature loops, field steps, and measurement commands.
- **Data Stewardship:** Continuous live tracking logged into open, non-proprietary formats (plain ASCII text, CSV, or structured .dat files) with full diagnostic metadata headers.
- **Insert-Aware Control:** The software must automatically recognise the installed insert type and present the appropriate temperature and measurement controls without requiring manual mode switching or separate software launches.

7. Auxiliary Infrastructure, Installation & Warranty Support Protocols

7.1 Integrated Water Chiller Loop: The bidding vendor must include a fully matched, dedicated closed-loop indoor water chiller unit sized to dissipate the full thermal load of the helium compressor under peak continuous operation.

7.2 Power Conditioning Requirements: The supplier must provide explicit technical layouts describing transient voltage thresholds and electrical criteria required to safeguard the system cold head, and must specify configuration benchmarks for an auxiliary Uninterruptible Power Supply (UPS) sufficient to sustain continuous automated pumping, gas manifold isolation valves, and monitoring diagnostics during momentary power sags or phase shifts.

7.3 Vacuum Pumps: Vacuum pumps and fittings essential for uninterrupted functioning of the instrument and its various measurements options.

7.4 ^{3}He Gas Safety & Regulatory Compliance: Given the scarcity and cost of ^{3}He, the vendor shall document a ^{3}He recovery and recycling protocol demonstrating zero atmospheric venting under normal and fault conditions. A maintenance procedure for the sorption pump and ^{3}He circuit shall be supplied.

7.5 Comprehensive Warranty Structure: The complete instrumentation package—encompassing the variable temperature cryostat, pulse-tube cold head, superconducting magnet power supplies, ^{3}He sorption refrigerator insert, dilution refrigerator insert and gas manifold, AC susceptibility coil sets, water chiller, and all diagnostic electronics—must carry a mandatory **on-site warranty of at least one (1) year** commencing from the date of successful on-site installation and final commissioning sign-off at the user facility.

7.6 The vendors must quote for 5 year AMC after the warranty period.

7.7 Vendors must state that service, spares, and software upgrades are available for at least the next 10 years and components or software used in the system will not go obsolete in this time.

Other Details

- Vendors must submit all requested measurement data along with corresponding log data files within the tender submission deadline.
- Vendors must provide detailed specifications in the compliance statement against each technical specification mentioned in the tender document. Each claim must be supported by manufacturer literature, technical datasheets, and relevant published papers. Mere declaration of compliance without supporting data or measurement evidence will not be accepted.
- The offered system must be supplied with a minimum warranty period of one year from the date of installation.
- The technical offer must include supporting measurement data and published papers validating all claimed specifications and performance parameters of the quoted system.
- Technical evaluation may include demonstrations to verify the functionality, performance, and capabilities of the quoted system. The institute may request sample measurements where re-quired. Vendors will be provided a period of three weeks for arranging such demonstrations within India and should be prepared accordingly.
- Vendors must provide a list of similar systems installed in India during the last five years, including:
  - Contact person name
  - Address

- Phone number
- Email ID

The vendor should preferably have supplied and installed at least 5 similar systems during the last five years.

- Installation and comprehensive training must be provided by qualified service engineers at the user site. Preference will be given to vendors having factory-trained service engineers located in Chandigarh, Delhi/NCR, or nearby regions.

Vendor Submission Requirements: Measurement Data and Log Files

- Initial cooldown performance: Vendors must provide cooldown data with complete log data files from a fully warm system. Demonstration may be requested during technical evaluation.
- High vacuum performance: Vendors must provide achieved sample chamber vacuum data along with corresponding vacuum log files.
- Magnetic field ramping performance: Vendors must provide magnetic field ramping data with log files at the maximum available ramping rate.
- Magnetic field overshoot performance: Vendors must provide magnetic field overshoot data with log files in the "no overshoot" mode for magnetic fields of 1 T, 3 T, and 9 T.
- Cooling and warm-up performance: Vendors must provide supporting data files demonstrating automated cooling and warm-up operation between 400 K and 1.9 K, including cooldown and warm-up times.
- Temperature stability performance: Vendors must provide temperature stability data with log files at temperatures ≤ 1.9 K under magnetic fields of ± 9 T. The data must be recorded in temperature versus time format following the specified stabilization and magnetic field ramping procedure.
- Thermal cycling performance: Vendors must provide thermal cycling data with log files for the specified temperature cycling sequence from 300 K to 2 K and 400 K for five cycles, followed by magnetic field ramping to 9 T and oscillation back to 0 T.
- VSM measurement performance: Vendors must provide VSM measurement data in the temper-ature range of 1.9 K–400 K with 1 second averaging during both cooling and heating. Corre-sponding data files must be submitted along with the technical bid.
- Sensitive magnetic sample measurement: Vendors must provide measurement data and data files for the specified magnetic measurement sequence, including temperature-dependent magnetization and magnetic hysteresis measurements.
- AC susceptibility measurement: Vendors must provide ErYAG sample measurement data with log data files covering measurements from 1.9 K to 400 K.
- Heat capacity measurement: Vendors must provide heat capacity measurement data with log data files demonstrating the claimed resolution and accuracy.
- Helium-3 refrigerator performance: Vendors must provide supporting data demonstrating the achievable temperature range of the He-3 refrigerator. Demonstration may be requested during technical evaluation.
- He-3 heat capacity measurement: Vendors must provide heat capacity measurement data from the highest to the lowest temperature using the He-3 option along with corresponding data files.

- He-3 electrical transport measurement: Vendors must provide electrical transport measurement data from the highest to the lowest temperature using the He-3 option along with corresponding data files.
- Dilution refrigerator performance: Vendors must provide supporting data demonstrating the achievable temperature range of the dilution refrigerator insert and the physical property measurement (electrical transport, heat capacity, ac chi) capabilities. Demonstration may be re-quested during technical evaluation.