



भारतीय विज्ञान शिक्षा एवं अनुसंधान संस्थान मोहाली

मानव संसाधन विकास मंत्रालय, भारत सरकार द्वारा स्थापित

सैक्टर 81, नॉलेजसिटी, प०ओ० मनोली, ए० ए० ए० नगर, मोहाली, पंजाब 140306

INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH MOHALI

(Established by Ministry of Human Resource Development, Govt. of India)

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

PAN No. - AAAAI1781K GST No- 03AAAAI1781K1ZT

• Phone : +91-172-2240086 & 2240121 • Fax : +91-172-2240124, 2240086 • <http://www.iisermohali.ac.in> • Email: stores@iisermohali.ac.in

CPPP/Institute Website

IISERM(842)17/18Pur

Dated- 04th September 2017

NOTICE INVITING E-TENDER

Online tenders are invited on behalf of Director, IISER Mohali in **TWO BID SYSTEM** {Technical and Commercial} for the supply and installation of Dilution fridge as technical specification given below and BOQ list 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.

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(Mukesh Kumar)

Assistant Registrar (S&P)



IISER MOHALI

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E-TENDER NOTICE

Tender Ref.- IISERM(842)17/18 Pur	Dated :- 04 th September 2017
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Critical Date Sections

Sr.	Description	Date	Time
1.	Tender Publishing Date and time	04 th September 2017	6:00pm
2.	Tender Document download start Date & Time	04 th September 2017	6:00pm
3.	Bid Submission start Date & Time	04 th September 2017	6:00pm
4.	Bid Submission End date and Time	05 th October 2017	Up to 11:00am
5.	Tender opening Date and Time	06 th October 2017	At 11.30 am

Online tenders are invited on behalf of Director, IISER Mohali in **TWO BID SYSTEM** {Technical and Commercial separately} 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. Tender fee in shape of DD/Banker Cheque of Rs 500/- (Non-refundable) and EMD of Rs. 6,00,000/- should be submitted by DD /Banker Cheque/FDR/ Bank Guarantee in favour of the Registrar, IISER Mohali payable at Mohali. However, scanned copy of the both tender fee and EMD should be upload on website along with technical bid part. The hard copy of the same in original to be send to the address mentioned below duly superscribing the supply/work name and reference/ tender ID on the envelope and same must reach before opening the bid and if not received within due date the bid will be rejected summarily.

The Original EMD and tender fee should be sent to:

Assistant Registrar (S&P)
Indian Institute of Science Education and Research,
Mohali Sector 81, SAS Nagar, Mohali, Punjab, India,
Pin: 140306

Non-receipt of original EMD and tender fee will lead to rejection of tender.

Item Details-

Sr. No.	Name of item	Qty.
1	<p><u>Dilution Fridge</u></p> <ol style="list-style-type: none"> 1. Please quote for both a wet system and / or a cryogen free system as per the specifications given below. The final decision on the purchase will be made by the purchase committee after evaluating the price of both, noise level of both and the availability of liquid helium at IISER Mohali. 2. The base temperature must be 10 mK or below without load. 3. At 100 mK, cooling power for the mixing chamber stage must be one of the following: <ol style="list-style-type: none"> a) 400 microwatt (Guaranteed) or above. b) 300 microwatt (Guaranteed) or above. <p>Vendor must quote for both 300 microwatt and 400 microwatt cooling power (100 mk) separately if such options are available. The goal of IISER will be to buy a system with highest possible cooling power within the available funds.</p> 4. <u>Experimental Wiring:</u> <ol style="list-style-type: none"> a. 18 twisted pairs (total 36, manganin wires will be preferred) for DC connections initiated at 2 19-pin connectors (D connectors will be preferred) at the top and terminated to 19-pin connectors (D connectors will be preferred) at mixing chamber plate. 4 separate superconducting wires initiated at connector/s at top and terminated at sample space for DC connections to piezo. b. 6 demountable (from any plate) high frequency (10 GHz, 50 ohm characteristic impedance) semi-rigid coaxial cables initiated at sma-female connectors at top and terminated at mixing chamber plate. c. All the wirings should be thermally anchored at appropriate stages. d. Extra set of thermal anchors, like bobbins for future wiring of extra 18 pairs of wires should be provided at multiple stages. e. Multi mode optical fiber down to 20 mm below the magnet center. 5. The system may be of “top-loading” or “bottom loading” type. <u>The vendors are requested to quote for a bottom loading system and quote separately for the “top-loading” option.</u> Central vacuum load-lock sample stage delivery mechanism (top loading) with all necessary gate valve/s, tubing/s, externally controlled shutters and pumping ports etc. for inserting a sample stage of 1.24” diameter to the bottom of mixing chamber plate. Vendor must quote for the manipulator and stage (customized for above mentioned connections) separately. 6. 1 central line-of-sight port down to mixing chamber plate for central sample stage delivery system mentioned in point '5.'. In case of cryogen free system at least 2 off central line-of-sight ports of 50 mm diameter up to mixing chamber plate should be provided for high frequency application, one of which will be occupied by the high frequency connections mentioned in point '4.'. Extra non line-of-sight ports for flexible wiring should also be provided for cryogen free system. The unused line-of-sight and non line-of-sight ports must be blanked and shielded properly. Blank and radiation shield option for the central port, as well, in case central sample delivery probe is not in use. 7. <u>Dewar (For wet system):</u> A highly insulated multi layered dewar with 120 litre belly capacity and 50 litre tail section, excluding magnet displaced volume. The loss should be no more than 8 litre/day. 8. <u>Insert and top flange (For wet system only):</u> <ol style="list-style-type: none"> a. A top-flange assembly, including radiation baffle and all necessary ports like pumping ports etc. 3 spare 0.75” o.d. tube (Clear shot down to top of the magnet) with 3 1/8 CF flange on top. b. IVC with tail to fit the superconducting magnet bore as specified under item # 9 c. Central sample delivery mechanism, mentioned in point '5.' d. Three 0.5” O.D. diameter tubes up to IVC flange with mini-CF flanges on top, for quoted and additional wiring; e. Two HV compatible spherical chambers for four 2 3/4” CF flanges with wiring feedthroughs which includes the mentioned DC wiring in point '4.' (Any other option may also be considerable); f. All Helium vent and pressure-relief ports should be compatible with a cryomech reliquefier. 9. <u>Superconducting Magnet Specification:</u> 	01

The magnet should be bottom loading. Please quote **for all** separately.

- a. The central field should be one of the following:
 - 9-2-2 Tesla vector
 - 11-1-1 Tesla vector
 - 12-3-1 Tesla vector
 - 14 Tesla single axis
 - 16 Tesla single axis
 - 11 Tesla single axis

Note: 'a-b-c' Tesla stands for 'a' Tesla along vertical axis; 'b' and 'c' Tesla along horizontal axes.

- b. +/- 1 parts per million (ppm) central main coil homogeneity over 10 mm DSV for the vertical field.
- c. It should have a minimum clear bore of diameter 3 inch.
- d. **Persistent switch** must be installed so that the magnet can run in the "persistent" mode with full vector field.
- e. Magnet should be fully **protected against any damage due to quench**.

10. Superconducting magnet power supply:

- a. 4-quadrant, true bi-polar system/s featuring smooth sweeps through zero.
- b. Automatic quench detection and protection.
- c. Display, clearly indicating output current, voltage, limit settings and system status
- d. Current settability of 0.1 mA or better
- e. Persistent switch heater power supply (for persistent mode magnet option only)
- f. Computer interface (GPIB and Ethernet)
- g. Safety interlocks for persistent switch enable/ disable and changing of important magnet parameters and limits
- h. Visual confirmation of current, present in leads must be provided.
- i. Remnant field correcting mechanism should also be provided.

11. Thermometers and Heaters:

- a. Thermometers only with **negligible magnetoresistance at highest magnetic field** should be provided. Detailed magnetic field dependent calibration data of all the thermometers must be provided.
 - b. Thermometers should be installed in all stages for monitoring temperature in presence and absence of magnetic field.
 - i. Mixing chamber plate and cold plate must have highly calibrated (0.1 mK resolution at 10 mK) temperature sensors installed.
 - ii. Two Cernox thermometers should be installed on the magnet for continuous monitoring of magnet temperature (both top and bottom)
 - c. All necessary heaters must be installed including at IVC sorb (for wet system) and mixing chamber plate
 - d. Detailed specifications of all the heaters and thermometers have to be mentioned by the vendor
 - e. Calibration data for all the thermometers must be provided.
12. Automatic temperature controller with GPIB interfacing, auto tuning PID, alarm and relay must be provided. Temperature should be steadily controllable by 0.1 mK precision. Stability range must be provided in technical quotation.
13. For wet system, a liquid helium level meter and read out with interfacing option, sample and hold operation, burnout protection and de-ice cycle must be provided.
14. **Gas Handling system:** Manual (preferable) or automatic gas handling system with all the necessary gauges and components must be provided for smooth operation. Liquid nitrogen trap and liquid nitrogen dewar must be quoted separately.
15. All the necessary accessories for running the system efficiently must be provided. This includes the pumps (exclude 1K pump for wet system and IVC pump for cryogen free system), pulse tube refrigeration system (for cryogen free), compressors, valves, gauges, lines, transfer tubes (for wet system) etc.
16. Enough helium mixture must be provided for attaining the mentioned base temperature and cooling power.
17. For cryogen free system, appropriate stand(s) for installing the system conveniently must be provided.
18. Vendor must clearly mention the followings. These will be considered seriously for making a decision.
- a. Time required for the cryostat from room temperature to complete cool down to base temperature.
 - b. Sample exchange time
 - c. Sample insertion to base temperature time while running.
 - d. Full warm-up time with and without warm-up heater

19. Additional features: Vendor must clearly mention what additional features they can provide.

NOTE: --

1. All the components used should be non-magnetic
2. The price should be quoted for all components separately and their installation
3. Whether to buy a wet system or a cryogen free system will be decided by committee, considering price to performance ratio.
4. The final decision on purchase will be made after evaluating the technical and the financial bids. The L1 bidder may be rejected even after opening the financial bid if it is found that the higher bidders provide significantly better system (in terms of specifications) at reasonable cost. The purchase committee will have the right to make the final decision.
5. IMPORTANT: The delivery date **should not exceed 9 months** from the date of purchase order. In case the vendors request amendments to the purchase order, the time will be counted from the date of first purchase order (before amendments, if any)

NB :- Uploaded Price BOQ are in INR value. If the bidder wants to quote in foreign currency please specify in technical bid. Quote the foreign price in FCA and CIP only.

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 and EMD. Late tenders will not be accepted.
- II. The online bids shall be opened at the office of the Assistant Registrar (P&S), 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. The bidder shall upload the tender documents duly filled in and stamped by the authorized signatory on each and every page. Tender not submitted/uploaded in the prescribed form and as per the tender terms and conditions shall be liable for rejection.
- IV. The bidder shall upload scanned copy of the PAN Card, GST number duly signed and stamped.
- 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.

INSTRUCTIONS

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 quantity mentioned in this inquiry is and shall be deemed to be only approximate and will not in any manner be binding on the Institute. Before the deadline for submission of the online bid, IISER Mohali reserves the right to modify the tender document terms and conditions. Such amendment/modification will be notified on website against said tender ID
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. Supplier from outside India should mention the Ex-works/FOB/FCA/CIF/CIP price clearly. 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 INSTITUTE IS EXEMPTED FROM EXCISE AND CUSTOM DUTY under notification no- 51/96 – CUSTOM DATED 23/7/1996 AND EXCISE NOTIFICATION NO. 10/97- CENTRAL EXCISE DT. 01.03.1997 DSIR REGISTRATION NO TU/V/RG/-CDE(1062)/2016 DT. 30/08/2016.
6. Tax: This Institute is not exempted from the payment of GST. The current rate (i.e. percentage of Sales Tax should be clearly indicated included or excluded) wherever chargeable. Please also provide/upload the copy of PAN card, GST number duly self-attested.
7. The delivery period should be specifically stated. Earlier delivery will be preferred.
8. The firms are requested to provide/upload detailed description and specifications together with the detailed drawings, printed leaflets and literature of the article quoted. The name of the manufactures and country of manufacture should also invariably be stated. In the absence of these particulars, the quotation is liable for rejection.
9. Validity of offer: 90 days. The warranty period after satisfactory installation should be mentioned and firm should replace all manufacturing defect parts/ whole item under warranty without any extra cost including clearance, freight, taxes. Security deposit/ Bank Performance Guarantee @ 10 % of the value of supply order as per norms may be sought from the firms.
10. The right to reject all or any of the quotation and to split up the requirements 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>
11. Disputes, if any, shall be subject to jurisdiction in the court of Mohali only.

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(Mukesh Kumar)
Assistant Registrar (S&P)