12/09/2019 PH/SMI/372/2019-20

Tender Notification for the Procurement of a liquid helium based variable temperature superconducting magnet system

Kindly send your best quotation for a liquid helium based variable temperature superconducting magnet system on C.I.P. Bangalore basis. Your quotation should clearly indicate the terms of delivery, delivery schedule, estimated delivery date, and payment terms. The tender should be submitted in two separate sealed envelopes - one containing the technical bid and the other containing the commercial bid, both of which should reach us, duly signed on or before 1700 hours on 30 September, 2019.

Please enclose a compliance statement along with the technical bid.

The bid should be addressed to:

The Chairman,
Department of Physics
Indian Institute of Science (IISc)
Bengaluru, India - 560012
Attn: Dr. Srimanta Middey

The sealed bid should be sent to:
Dr. Srimanta Middey
Assistant Professor
Department of Physics
Indian Institute of Science (IISc)
Bengaluru, India - 560012.
Ph: +91-80-2293 2861
Email: smiddey@iisc.ac.in

A. Specifications for liquid helium based variable temperature superconducting magnet system with the following components

1. 9 Tesla vertical field superconducting magnet with liquid nitrogen shielded helium Dewar. The capacity of helium Dewar must be at least 50 litre or higher.
2. Variable temperature insert (VTI) with base temperature of less than 2 K in continuous mode of operation. Appropriate gas handling system for operation of the VTI must be provided. The VTI must provide atleast 30 mm of sample space. Please provide allowed range of temperature ramping rate.
3. Minimum temperature range of continuous operation 2-300K.
4. Wiring:
    a. Thermally anchored 10 numbers of twisted pair of constantan/phosphor bronze wires down to sample holder. The wires should have suitable connectors terminating at top (preferably Fischer connector, also provide appropriate mating connector).
    b. Thermally anchored 4 numbers of flexible coaxial cables down to sample holder. The wires should have suitable connectors terminating at top (preferably SMB connector, also provide appropriate mating connector).
5. Calibrated thermometer for the sample space. The temperature sensor should be compatible with high magnetic fields.
6. 9 Tesla vertical field superconducting solenoid magnet (wet system) with following specifications:
    a. Bore diameter of the magnet must be greater than 45 mm in diameter.
    b. Magnetic field homogeneity must be better than 0.1% over a sphere with diameter 1 cm.
    c. The magnet should be equipped with persistent switch and quench protection circuit.
    d. The magnet should be fitted with thermometer to monitor its temperature. The temperature sensor should be compatible with high magnetic fields.
    e. Appropriate four quadrant magnetic power supply for 9 Tesla magnet with ability to continuous sweep of magnetic field to positive and negative values through zero. Mention maximum allowed ramp rate of magnetic field.
7. Helium level meter with appropriate level detector.
8. Flexible helium transfer line should be quoted.

9. Multi-channel temperature controller for monitoring and PID control the temperature of various components of the magnet system and VTI over the entire range of operation. This unit should have temperature sensor measuring circuit and heater output drive circuit. Temperature sensor measuring circuit should support NTC, PTC, Diode and Thermocouple sensors.
10. Appropriate control panel for local and remote operation (preferably through GPIB interface) of the entire system. The interfacing connectors should be provided.
11. The details of the required pumping system must be provided. Quote the price of the pumping system separately.

B. Optional items

Please quote separately for the different options

1. Mechanical sample rotator to rotate sample from in-plane to out-of plane magnetic field. Specify range of rotation and resolution. This should work for sample in vacuum, and preferably be operated via computer control.
2. Upgrade to 10 Tesla magnet.
3. Upgrade to 12 Tesla magnet.
4. Low temperature insert with required accessories to achieve base temperature less than 300 mK.

Terms and conditions:

1. The system must be upgradable later for the low temperature insert down to 300 mK. The vendor must quote separate price for item number B4 from the same manufacturer as of the main item A.
2. The vendor is responsible for the installation of the system at the institute.
3. The price quotation should include the cost of installation and training of potential users.
4. The vendor must have a track record of having previously supplied similar equipments in India (please furnish the details of the user, year of purchase of at-least five systems).

4. The vendor should have qualified technical service personnel for the equipment based in India (preferably in Bangalore).

5. The lead time for the delivery of the equipment should not be more than 6-8 months from the date of receipt of our purchase order.

6. The instrument must carry comprehensive warranty of at least one year from the date of installation.

7. The indenter reserves the right to place an order without item number 11.

8. The indenter reserves the right to withhold placement of final order. The right to reject all or any of the quotations and to split up the requirements or relax any or all of the above conditions without assigning any reason is reserved.

Yours Sincerely,

Dr. Srimanta Middey
Assistant Professor
Department of Physics
Indian Institute of Science (IISc)
Bengaluru, India - 560012.
Ph: +91-80-2293 2861
Email: smiddey@iisc.ac.in