

**Re-TENDER**

FOR

SUPPLY & INSTALLATION OF AUTOTUNING TEMPERATURE CONTROLLER  
WITH FOUR SENSOR INPUTS AT SCHOOL OF BASIC SCIENCE IIT MANDI



**Tender No.: IITMANDI/S&P/PUR-104/2015-16/5974-75**

**Tender date: 01<sup>st</sup> October, 2015**

**Last Date of submission: 15<sup>th</sup> October, 2015**

Indian Institute of Technology Mandi

Transit Campus: Mandav Hotel, 2<sup>nd</sup> Floor (Near Bus Stand), Mandi – 175001 (H.P)

**Tel.:** 01905-237926 & 01905-267039

**Email:** [ajay@iitmandi.ac.in](mailto:ajay@iitmandi.ac.in) & [arsp@iitmandi.ac.in](mailto:arsp@iitmandi.ac.in)

In continuation to our earlier tender notice no **IITMANDI/S&P/PUR-104/2015-16/5440-41 dated 09<sup>th</sup> September, 2015** Indian Institute of Technology Mandi, Mandi invites **tender** for supply, erection, installation, commissioning, testing, demonstration and training of **Autotuning Temperature Controller with Four sensor inputs** as per specifications given in the Annexure attached to the Tender form. **Due to non receipt of minimum no. of required bids in response to earlier tender notice for Chamber for Assembled Sputtering System, This retendering is being done.** All offers should be made in English and should be written in both figures and words. Tender forms can be downloaded from the website (<http://iitmandi.ac.in/administration/tenderseoi.html>) of the Institute.

The bidders are requested to read the tender document carefully and ensure compliance with all specifications/instructions herein. Non-compliance with specifications/instructions in this document may disqualify the bidders from the tender exercise. **Those bidders who have quoted earlier, in response to our earlier advertisement are not required to bid again and their earlier bids will be considered.** The Director, IIT Mandi, Kamand reserves the right to select the item (in single or multiple units) or to reject any quotation wholly or partly without assigning any reason. Incomplete tenders, amendments and additions to tender after opening or late tenders are liable to be ignored and rejected.

#### **Terms and Conditions:**

1. The technical and financial bids should be quoted separately and put in different sealed envelopes marked **“Technical bid”** or **“Financial bid”** as applicable. These separate bids envelopes are to be put in an outer envelope which should also be sealed.
2. The Vendors who have earlier supplied the equipment to any of the IITs, IISc, IISERs and other Scientific Institute of National Repute may only tender. The details of such institutions and the cost with name of equipment may also be supplied with the bids.
3. The technical and financial bids should be submitted in original. The financial bid should include the cost of main equipment/item and its accessories. If there is any separate cost for installation etc. that should be quoted separately.
4. Each individual sealed envelope as well as the outer envelope should be marked with the following reference on the top left hand corner: **“IITMANDI/S&P/PUR-104/2015-16/5974-75/Item Name. \_\_\_ \_\_\_ dated 01<sup>st</sup> October, 2015”**
5. The printed literature and catalogue/brochure giving full technical details should be included with the technical bid to verify the specifications quoted in the tender. The bidders should submit copies of suitable documents in support of their reputation, credentials and past performance.
6. The rates should be quoted in figures (typed or printed) and cutting should be avoided. The final amount should be in figures as well as in words. If there are cuttings, they should be duly initialed, failing which the bids are liable to be rejected.
7. Any bids received after **1:00 P.M. on 15<sup>th</sup> October, 2015** shall not be considered
8. The Technical Bids will be opened on **15<sup>th</sup> October, 2015 at 04:00 P.M.** The date & time for opening of Financial Bids will be informed later on to the technically qualified bidders.
9. While sending rates, the firm shall give an undertaking to the effect that *“the terms/conditions mentioned in the enquiry letter/Tender Notice against which the rates*

*are being given are acceptable to the firm.*” In case the firms do not give this undertaking, their rates will not be considered.

10. If the supplier/firm is original equipment manufacturer (OEM)/authorized dealer/sole distributor of any item, the certificate to this effect should be attached.
11. The quantity shown against the item is approximate and may vary as per demand of the Institute at the time of placing order.
12. All tender documents should have to be sent through courier, speed post or registered post only. All tender documents received after the specified date and time shall not be considered.

The postal address for submitting the tenders is:

**“Assistant Registrar, Stores and Purchase”  
Indian Institute of Technology Mandi (IIT Mandi),  
Administrative Block (Mandav Hotel,  
Near Bus Stand), Mandi – 175001 (H.P), India”**

13. In the event of any dispute or difference(s) between the vendee Institute (IIT Mandi) and the vendor(s) arising out of non-supply of material or supplies not found according to specifications or any other cause whatsoever relating to the supply or purchase order before or after the supply has been executed, shall be referred to “The Director, IIT Mandi”, Kamand who may decide the matter himself or may appoint arbitrator(s) under the arbitration and conciliation Act,1996. The decision of the arbitrator shall be final and binding on both the parties.
14. The place of arbitration and the language to be used in arbitral proceedings shall be decided by the arbitrator.
15. All disputes shall be subject to Mandi Jurisdiction only.
16. All tenders in which any of the prescribed conditions is not fulfilled or any condition is putforth by the tenderer shall be summarily rejected.
17. IIT Mandi reserves the right to cancel the tender at any point of time without assigning any reason.
18. The bidders or their authorized representatives may also be present during the opening of the Technical Bid, if they desire so, at their own expenses.

**Note:** Price bids of only those bidders will be opened whose technical bids are found suitable by the committee appointed for the purpose. Date and time of opening of price bids will be decided after technical bids have been evaluated by the committee. Information in this regard will be intimated to the technically qualified bidders. In exceptional situation, an authorized committee may negotiate price with the qualified bidder quoting the lowest price before awarding the contract.

19. **Clarifications:**

In case the bidders require any clarification regarding the tender documents, they are requested to contact our office (e-mail: [ajay@iitmandi.ac.in](mailto:ajay@iitmandi.ac.in) & [arsp@iitmandi.ac.in](mailto:arsp@iitmandi.ac.in)) on or **before 05/10/2015**.

## 20. Tender Cost:

A Demand draft of **Rs. 1,000/- (Rupees One Thousand only)** towards non-refundable **tender fee, drawn in favour of “The Registrar, IIT Mandi”** payable at Mandi should accompany the Technical bid documents. In the absence of tender cost, the tender will not be accepted.

## 21. Earnest Money Deposit (EMD):

A refundable amount of **Rs 7,400/-** as earnest money deposit (EMD) in the shape of DD from a scheduled bank in India (**valid for a minimum period of 3 months from the date of submission of tender**) should accompany the bid documents. The DD drawn in favour of “The Registrar, IIT Mandi” payable at Mandi should accompany the bid documents. The EMD should be kept in a separate sealed envelope, should be marked clearly and put in the outer envelope that contains the technical and financial bid envelopes. The bidders should enclose a pre-receipted bill for the EMD to enable us to return the EMD of unsuccessful bidders. Failure to deposit **Earnest Money** will lead to rejection of tender. In the event of the awardee bidder backing out, EMD of that bidder will be forfeited.

## 22. Pre – Qualification Criteria:

- a. Bidders should be the manufacturer / authorized dealer. Letter of Authorization from original equipment manufacturer (OEM) on the same and specific to the tender should be enclosed.
- b. The Vendors who have earlier supplied the equipment to any of the IITs, IISc, IISERs and other Scientific Institute of National Repute may only tender. The details of such Institutions and the cost with name of equipment may also be supplied with the bids.
- c. An undertaking from the OEM is required stating that they would facilitate the bidder on a regular basis with technology/product updates and extend support for the warranty as well.
- d. OEM should be internationally reputed Branded Company.
- e. Non-compliance of tender terms, non-submission of required documents, lack of clarity of the specifications, contradiction between bidder specification and supporting documents etc. may lead to rejection of the bid.
- f. **Furnishing of wrong/ambiguous information in the compliance statement may lead to rejection of bid and further black listing of the bidder, if prima-facie it appears that the information in the compliance statement was given with a malafide/fraudulent intent.**

## 23. Prices:

- a. The Prices quoted should be inclusive of all taxes or duties, packing, forwarding, freight, insurance, delivery and commissioning etc. at destination site (IIT Mandi, Mandi/Kamand). IIT Mandi is registered with DSIR, Govt. of India and is exempted from Custom / Excise Duty. Exemption Certificate to this effect will be issued by IIT Mandi. **Hence, Customs/Excise Duty exempted price should be quoted.** The rates shall be firm and final. Nothing extra shall be paid on any account. **In the price bid/financial bid, the vendor should clearly mention the final price**

**breakup i.e. ex-work price/FCA price, FOB price, CIP/CIF price & FOR IIT Mandi, Kamand Campus price, as applicable in their bid.**

- b. In case of imported equipment(s)/item(s), the agency commission, if any, payable in Indian rupees should be mentioned separately. For imported equipment, the Letter of Credit will be opened for the amount excluding agency commission in Indian Rupees. The firm should clearly mention the address of foreign bank in the financial bid.

**24. Validity:**

The bid should be valid for acceptance up to a period of 180 Days. The Bidders should be ready to extend the validity, if required without any additional financial implications.

**25. Delivery:**

The Equipment should be delivered and installed within the period as specified in the purchase order and be ready for use within 24 weeks of the issue of purchase order unless otherwise prescribed. If the bidder fails to deliver and place any or all the Equipments or perform the service by the specified date, penalty at the rate of 1% per week of the total order value subject to the maximum of 10% of total order value will be deducted.

**26. Training:**

Bidders need to provide adequate training to the nominated persons of IIT Mandi at their cost. IIT Mandi will not bear any training expenditure.

**27. Warranty Declaration:**

Bidders must give the comprehensive on-site warranty as required from the date of successful installation of Equipment against any manufacturing defects and also give the warranty declaration that *“everything to be supplied by us hereunder shall be free from all defects and faults in material, workmanship and shall be of the highest quality and material of the type ordered, shall be in full conformity with the specification and shall be complete enough to carry out the experiments, as specified in the tender document.*

Any deviation in the material and the specifications from the accepted terms may liable to be rejected and the bidders need to supply all the goods in the specified form to the satisfaction / specifications specified in the order / contract and demonstrate at their own cost.

- 28. Performance Bank Guarantee:** A performance bank guarantee from a scheduled bank in India for an amount equal to 10% of the price for duration of two months beyond the expiry of warranty period will be taken from the supplier or Indian agent.

- 29. Terms of Payment:** Payment will generally be made only after delivery and satisfactory installation, testing, commissioning etc. **This must be specified in the tender/quotation.**

- In case of imported supplies, payment (excluding Indian agency commission, if any) will be made through irrecoverable Letter of Credit in two installments. 80 % of the money will be released on submission of shipping of documents. Remaining 20 % will be

released after successful installation of the instrument and submission of a performance bank guarantee for 10% of the order value from a nationalized bank, valid for 2 months beyond the expiry of the warranty.

30. **Tender expenses and documents:** All costs incurred by the bidder in the preparation of the tender shall be at the entire expense of the bidder.
31. **Tender Evaluation Criteria:** The technical bids will be opened and evaluated by a duly constituted committee. After evaluation of the technical bid, the financial bid for only those offers which have qualified in the evaluation of technical bid will be opened.
32. **Return of EMD:**
  - The earnest money of unsuccessful bidders will be returned to them without any interest within 15 working days after awarding the contract.
  - The earnest money of the successful bidder will be returned to them without any interest within 15 Days after supply of material.
33. **Manual and documentation:** All the manuals necessary for operating and servicing the equipment (including details of electronic circuits) will have to be provided along with the instrument.
34. The IIT Mandi reserves the right to cancel the tender at any stage (point of time) without assigning any reason.
35. Bidders should go through the tender terms, conditions and specifications carefully and fill in the attached compliance statement accurately and unambiguously. They should ensure that all the required documents are furnished along with the bid.

Sd/-  
**Assistant Registrar**  
**Stores & Purchase**

**BID PARTICULARS**

1. Name of the Supplier :

2. Address of the Supplier :

3. Availability of demonstration of equipment : Yes / No

4. Tender cost enclosed: : Yes/No if yes

D.D. No. \_\_\_\_\_ Bank \_\_\_\_\_ Amount \_\_\_\_\_

5. EMD enclosed : Yes / No if (Yes)

D.D. No. \_\_\_\_\_ Bank \_\_\_\_\_

6. Name and address of the Officer/contact person to whom all references shall be made regarding this tender enquiry.

Name :

Address :

Telephone No. :

Fax No. :

Mobile No :

e-Mail :

Web

**Ref:-ENQUIRYNO:-IITMANDI/S&P/PUR-104/2015-16/ Autotuning Temperature Controller with Four sensor inputs and four independent control outputs.**

**Technical specifications of Autotuning Temperature Controller with Four sensor inputs and four independent control outputs**

1. To measure and control temperature in the range 1 K (or less) to 1300 K (or higher).
2. Temperature limits setting for each input. Temperature accuracy : better than 5 mK @ 1 K, 10 mK at 4.2 K, better than 100 mK @ 77 K, better than 500 mK @ 300 K (with Cernox temperature sensor) and better than 275 mK @ 500 K (with Platinum RTD sensor).
3. Suitable for Cernox, platinum resistance sensor, Silicon diode, GaAlAs diode, capacitance, NTC RTD sensors and thermocouple temperature sensors (K, E type). Input configuration Inputs can be configured from the front panel to accept any of the supported input types. Thermocouple and capacitance input card could be installed in the field.
4. In addition to fully loaded standard sensors curves provision and software for loading ~30 user curves (with ~200 calibration point).
5. Front panel as well as remote provision for choosing any of the four input sensor channel as control channel.
6. Four temperature sensor inputs and four independent PID heater control outputs. Quote separately for thermocouple/sensor input cards, if required.
7. Automatically switch sensor inputs using zones to allow continuous measurement and control from  $\leq 1\text{K}$  to  $\geq 1300\text{K}$ .
8. Variable DC current source with 16 bit D/A resolution capable of sourcing 1 Amp current, short circuit protection.
9. Two PID control loops: power range 50 W to 100 W in the range of  $25\ \Omega$  to  $100\ \Omega$  loads.
10. Control type: closed loop digital PID with manual heater output for each control channel 10Hz update rate.
11. PID control setting: Proportional 0 to 9000 with 0.1 setting resolution, Integral 1 to 1000 with 0.1 setting resolutions, Derivative 1 to 200% with 1% resolution, Manual output 0 to 100% with 0.01% setting resolution.
12. Auto tuning to collect PID parameters.



13. Analog output setting: update rate 10/s, Resolution: 16-bit, 0.3 mV, Accuracy:  $\pm 2.5$  mV, Noise: 0.3 mV RMS.
14. Should have  $\pm 10$  V analog voltage outputs, alarms, and relays.
15. 10 temperature zones control with P, I, D, manual heater power, heater range, control channel, ramp rate.
16. Sensor excitation current reversal to eliminate thermal EMF errors for resistance sensors.
17. Safety provision like setting set point limit, maximum heater range or current, switch off heater power at maximum set point limit, switch off heater power when load is open or short circuited etc.
18. Remote Interface: GPIB and Ethernet, IEEE 488.2, RS-232 interfaces.
19. Having temperature measurement range  $\leq -100$  °C to  $\geq 1000$  °C with resolution of 0.001 °C using thermocouple (K,T -type) and display in °C, °F, °K.
20. A bright, graphic LCD with an LED backlight for simultaneously displaying up to eight readings.
21. Provide *breakup quotation for main equipment, accessories, sensor cables and connectors, GPIB cable and spares; and clearly mention the essential items required to meet above specifications.*
22. Power adopter and power should be compatible to Indian standards of 230V, 50Hz.

**Optional Accessories:**

1. Silicon Diode to be used in range of 1.4 K to 500 K,
2. Platinum Resistance Thermometers (PT-100)
3. Pool of Thermocouple wires
  - A. Copper constantan and
  - B. Chromel-AuFe (0.007%) wire to be used in the range 1.2 K to 610 K

**Terms & Conditions:-**

1. Operation and service manual in English (electronic and hard copy) should be provided with all the equipments and components.
2. In the technical details, specify clearly about the kind of service/maintenance required for the system.

3. Enclose pre-installation guide for the details on electrical power, space and other for all components and essential accessories.
4. Quote separately for all optional items/accessories, optical components and essential auxiliary equipment/consumables which are not explicitly specified above however required for smooth functioning of the machines.
5. A list of institutes (with details) in India where the similar equipment (with all options in this tender) has been sold or is under operation should be provided. The vendor must provide contact details (Name, Phone etc.) of at least 4-6 such customers.
6. The vendor should clearly specify the exact model number and supplied accessories with the possible link from the internet. The quotations should bear full details and where ever possible, be duly supported with catalogues, pamphlets, literature as the case may be for comparing the quality and rates of the item. The item should be of a standard company make or equivalent.
7. The rates quoted should include transportation costs upto Mandi clearly mentioning the percentage/rate of Sales Tax / VAT or all other Taxes and Duties and the rates quoted should be valid for at-least 180 days from the date of opening of the quotation.
8. Warranty: More than One year parts and labor on materials and workmanship.

## COMPLIANCE STATEMENT FOR THE TENDER SPECIFICATIONS

INDIAN INSTITUTE OF TECHNOLOGY MANDI  
HIMACHAL PRADESH-175001

Ref:-ENQUIRYNO:- IITMANDI/S&P/PUR-104/2015-16/Annexure 1

| S. NO | Check list of documents/ Undertakings?  | YES/ NO | Remarks (Give explanation if answer is No) |
|-------|---|---------|--|
| 1     | Is Tender fees attached?  |         |  |
| 2     | Is EMD attached? (if applicable)  |         |  |
| 3     | Is the bidder original equipment manufacturer (OEM)/authorised dealer?  |         |  |
| 4     | If authorised dealer, recent dated Certificate to this effect from OEM, attached or not?  |         |  |
| 5     | Undertaking from OEM regarding technical support & extended warranty period   |         |  |
| 6     | Validity of 180 days or not?  |         |  |
| 7     | Undertaking from bidder regarding acceptance of tender terms & conditions   |         |  |
| 8     | Whether list of reputed users (along with telephone numbers of contact persons) for the past three years specific to the instrument attached.   |         |  |
| 9     | Whether special educational discount for Indian Institute of Technology (IIT) Mandi (H.P) given.  |         |  |
| 10    | Whether required training of operator and research students without any charges offered.  |         |  |
| 11    | <b>Does the instrument comply with all the required specifications as per annexure 1.</b><br><br><b>Attach a separate sheet highlighting compliances with the specifications and explanations thereto if the equipments vary from the requested specifications.</b> |         |  |
| 12    | Whether free Installation, Commissioning and Application Training offered.  |         |  |
| 13    | Whether required comprehensive onsite extended warranty offered.  |         |  |
| 14    | Whether Annual maintenance after expiry of comprehensive onsite warranty quoted separately as optional.   |         |  |