

**TENDER (E-PUBLISHING)**  
**FOR**  
**SUPPLY & INSTALLATION OF HIGH TEMPERATURE HORIZONTAL TUBULAR**  
**FURNACE & MOBILE VACUUM PUMPING SYSTEM IN**  
**SCHOOL OF ENGINEERING,**  
**AT IIT MANDI**



**Tender No.: IITMANDI/S&P/PUR-248/2015-16/10246-47**

**Tender date: 11<sup>th</sup> March, 2016**

**Last Date of submission: 23<sup>rd</sup> March, 2016**

Indian Institute of Technology Mandi

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

**Tel.:** 01905-267039 **email:** [arsp@iitmandi.ac.in](mailto:arsp@iitmandi.ac.in) & [viswa@iitmandi.ac.in](mailto:viswa@iitmandi.ac.in)

Indian Institute of Technology Mandi, Mandi invites tender for supply, erection, installation, commissioning, testing, demonstration and training of **High Temperature Horizontal Tubular Furnace & Mobile Vacuum Pumping System**, as per specifications given in the Annexure attached to the Tender form. 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. Tender document also published on e-tendering (<http://eprocure.gov.in/eprocure/app>). The bidder can also submit bids online.

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. 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-248/2015-16/10246-47/Item Name.\_\_\_\_dated 11<sup>th</sup> March, 2016**”
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 **2:30 P.M. on 23<sup>rd</sup> March, 2016** shall not be considered
8. The Technical Bids will be opened on **23<sup>rd</sup> March, 2016 at 03:00 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 at Bamboo Hut, Near Director Office  
Kamand, Distt Mandi – 175005 (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 requires any clarification regarding the tender documents, they are requested to contact our office (e-mail: [viswa@iitmandi.ac.in](mailto:viswa@iitmandi.ac.in) & [arsp@iitmandi.ac.in](mailto:arsp@iitmandi.ac.in) on or **before 18/03/2016**).

**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. If the same firm is submitting bids for more than one annexure, they should submit the same in separate envelopes along with respective tender cost for each annexure. In the absence of tender cost, the tender will not be accepted.

**21. Earnest Money Deposit (EMD):**

The bidder can quote for all the annexure and they should submit separate EMD for each annexure. For **"annexure A"** a refundable amount of **Rs 14,000/-** as earnest money deposit (EMD) and For **"annexure B"** a refundable amount of **Rs 10,000/-** as earnest money deposit. The EMD should be deposited in the shape of 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. The bidders should submit separate EMD. 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.
- In case of required item quoted in INR, 100% payment will be made through through wire transfer after receipt of material in good condition and successful installation of the instrument and on 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. **Vendors may quote for Annexure-A and Annexure-B separately.** They will be evaluated individually
35. The IIT Mandi reserves the right to cancel the tender at any stage (point of time) without assigning any reason.
36. 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 :



## Annexure A

### Ref:-ENQUIRYNO:-IITMANDI/S&P/PUR-248/2015-16/ High Temperature Horizontal Tubular Furnace

#### Specifications:-

S. No.	Features Detail	Parameters required
1.	Maximum working temperature	1700 <sup>0</sup> C or more
2.	Heating elements and Sensor	Heating element: Kanthal Super, Thermocouple: Standard compatible <b><i>(Internationally reputed make/parts preferred)</i></b>
3.	Process Environment	Atmospheric pressure, Vacuum, Inert gas, other gases compatible
4.	Uniform temperature zone	4 inch or more
5.	Controlled heating and cooling	0.1 to 10 <sup>0</sup> C / min. or better
6.	Temperature controller	Digital PID Temperature Programmer & Controller with accuracy +/- 1 <sup>0</sup> C and 16 segments programmable up to 1800 <sup>0</sup> C
7.	Communication Interface option	RS232/ USB
8.	Power Supply	230V, Single Phase AC, 50Hz
9.	Min. Tube Size (OD)	50mm
10.	Seal & Vacuum for process tube <b>(Optional)</b>	One set of required O-rings, flanges, Two SS needle valves and One dial vacuum gauge along with furnace
11.	Process Tubes <b>(Optional)</b>	Crystallized Alumina (for high Temperature) & Quartz Tube (for low Temperature) compatible for quoted furnace.

**\*One alumina tube should be added along with furnace.**

**Ref:-ENQUIRYNO:-IITMANDI/S&P/PUR-248/2015-16/ Mobile Vacuum Pumping System**

**Specifications for “MOBILE VACUUM PUMPING SYSTEM”**

**1. Turbo Molecular Pump Specification for the Mobile Pumping system**

<b>Sl. No.</b>	<b>TMP Unit Parameters</b>	<b>Required Specs</b>
1	<b>Pumping speed L/s for N2</b> <b>Pumping speed L/S for He</b>	250 (L/s) or better 255 (L/s) or better
2	<b>Bearings</b>	Maintenance free sealed bearings
3	<b>Compression Ratio of Gases</b>	N2 - $1 \times 10^{11}$ or better He - $1 \times 10^8$ or better Hy - $1 \times 10^6$ or better Ar - $1 \times 10^{11}$ or better
4	<b>Inlet Flange</b>	DN 100 CFF
5	<b>Ultimate Vacuum</b>	$5 \times 10^{-10}$ mbar or better
6	<b>Foreline Flange</b>	DN 25 ISO KF / DN 16 ISO KF
7	<b>Cooling method</b>	Water and Air
8	<b>Rotational Speed</b>	$\geq 60,000$ rpm with low speed option
9	<b>Mounting position</b>	Any
10	<b>Inlet Screen</b>	A suitable inlet screen of stainless steel mesh
11	<b>Heater band</b>	Suitable heating band to fit the upper part of the pump Envelope of baking
12	<b>Bake out temp.</b>	100 – 150°C at inlet flange
13	<b>Venting</b>	Automatic venting with variable time delay between 20 sec to 15 Min.
14	<b>Startup time</b>	$\leq 10$ min
15	<b>Display Parameters</b>	Rotation per min Bearing Temperature Current Power Running hours
16	<b>Interface</b>	RS 232 / RS 485

## **2. Dry Scroll Vacuum Pump Specification for the Mobile Pumping system**

<b>Sl.No.</b>	<b>Dry scroll vacuum Pump Parameters</b>	<b>Required Specs</b>
1	<b>Pumping Speed</b>	5.4 m <sup>3</sup> /hr or better
2	<b>Inlet Connection</b>	NW25
3	<b>OutLet Connection</b>	1/4" Female NPT (NW16 adapter provided)
4	<b>Power Input</b>	230-240 V
5	<b>Ultimate Vacuum /Pressure</b>	6.6*10e-2 mbar (5*10e-2 torr) or better
6	<b>Other Requirements</b>	Vacuum region inside pump should be free from grease and lubricants. Bearing should be outside the vacuum region. Gas Ballast option should be adjustable with no leak.
7	<b>Maximum inlet pressure</b>	1.0 atmosphere (0 psig)
8	<b>Maximum outlet pressure</b>	1.5 atmosphere(7.5 psig)
9	<b>Gas Ballast</b>	1 / 8" female NPT(WITH 40 MICRON FILTER AND PORT PLUG)
10	<b>Leak rate</b>	<1*10e-7 cc / sec Helium

**3. Vacuum gauges: Combination Gauge(Pirani and Inverted Magnetron )  
Specifications for mobile pumping system**

<b>Sr. No</b>	<b>Combination Gauge (Pirani and IMG Gauge) Parameters</b>	<b>Required Specs</b>
1	<b>Type of Gauge</b>	Combination Gauge (Pirani and Inverted Magnetron Gauge) )
2	<b>Connection</b>	DN 25 ISO-KF
3	<b>Accuracy</b>	+/-30% of reading typical
4	<b>Power supply</b>	15 to 30 VDC
5	<b>Output Signal voltage vs.</b>	0.6V/decade, logarithmic
6	<b>Vacuum measurement range</b>	5*10 <sup>-9</sup> to 1000 mbar (3.8 * 10 <sup>-9</sup> to 760 torr) or better
7	<b>Power consumption</b>	<=2 W
8	<b>Response Time</b>	<10 ms(@P>10 <sup>-6</sup> mbar) and =1000ms (@ p=10 <sup>-8</sup> mbar)
9	<b>Materials exposed to vacuum</b>	FRG-700-SS,AL2O3,FPM75,M0,Ni,Au,W
10	<b>Admissible Temperature</b>	Operation 5 to 55 degree C Storage -40 to +65 degree C

- **Pumping station should be completely assembled on a height adjustable trolley and should be tested as a system from factory.**
- **Combination Gauge should be compatible with Turbo Controller for digital output display.**
- ***Internationally reputed make/parts preferred.***
- **All Optional items needs to be quoted..**

**Compliance statement for the tender specifications**  
**INDIAN INSTITUTE OF TECHNOLOGY MANDI**  
**HIMACHAL PRADESH-175001**

**Ref:-ENQUIRYNO:-IITMANDI/S&P/PUR-248/2015-16/ High Temperature  
Horizontal Tubular Furnace & Mobile Vacuum Pumping System**

1. You have to fill in all columns and ensure that you furnish all the required information accurately and unambiguously.
2. If our specification contains any values, you have to provide your values against the column in the same unit as we have specified.
3. Deviation in values, materials etc. from our specification may be explained in the remarks column

Sr. 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 complies with all the required specifications as per annexure A &amp; B . Attach a separate sheet showing compliance with the specifications and explanations thereto if the equipments varies from the requested specifications.</b>		
12	Whether free Installation, Commissioning and Application Training offered.		
13	Whether three years comprehensive onsite extended warranty offered.		
14	Whether Annual maintenance after expiry of comprehensive onsite warranty quoted separately as optional.		