

	<p style="text-align: center;"><b>INDIAN INSTITUTE OF TECHNOLOGY MADRAS</b> Chennai 600 036</p> <p style="text-align: center;">Telephone: (044) 2257 4774 E-mail: vsarma@iitm.ac.in</p>	
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Prof. V. Subramanya Sarma  
Project Coordinator

Ref: MET/2018/2124/SPX/SARMA  
Dated: 27.11.2018

Limited Tender No: MET/2018/2124/SPX/SARMA

**Due Date: 14.12.2018, 4:00pm**

**Technical Bid opening meeting date: 17.12.2018, 4:30pm**

Dear Sir/Madam,

On behalf of the Indian Institute of Technology Madras, offers are invited for the supply of “**High Temperature Furnace**” conforming to the specifications given in **(Annexure-I)**:

**Instructions to the Bidder**

- I. **Preparation of Bids:** - The Limited tenders should be submitted under two-bid system (i.e.) Technical bid and Financial bid.
- II. **Delivery of the tender:** - The tender shall be sent to the below-mentioned addresses either by post or by courier so as to reach the following address before the due date and time specified in our Schedule:  
**Prof. V. Subramanya Sarma,**  
**Department of Metallurgical & Materials Engg,**  
**IIT Madras**  
**Chennai - 600 036.**

III. **Opening of the tender:** - The offer/Bids will be opened by a committee duly constituted for this purpose. The technical bids will be opened first and it will be examined by a technical committee which will decide the suitability of the bid as per our specifications and requirements. The bidders will be invited for opening of Technical bids. In respect of opening of financial bid, those bidders who are technically qualified only will be called for.

IV. **Prices:** - The price should be quoted in net per unit (after breakup) and must include all packing and delivery charges to **Department of Metallurgical & Materials Engg.**

The offer/bid should be exclusive of taxes and duties, which will be paid by the purchaser as applicable. However the percentage of tax & duties should be clearly indicated. The price should be quoted without custom duty and excise duty, since I.I.T. Madras is exempt from payment of excise duty, and the custom duty will be paid at concessional rate against duty exemption certificate. In case of import supply, the price should be quoted on EX-WORKS and CIP basis indicating the mode of shipment.

V. **Agency Commission:** - Agency commission, if any, will be paid to the Indian agents in Rupees on receipt of the equipment and after satisfactory installation. Agency Commission will not be paid in foreign currency under any circumstances. The tenderer should indicate the percentage of agency commission to be paid to the Indian agent. The foreign Principal should indicate about the percentage of payment and it should be included in the originally quoted basic price, if any.

VI. **Terms of Delivery:** - The item should be supplied to our Departments as per Purchase Order. In case of import supply, the item should be delivered at the cost of the supplier to our Institution. The Installation/Commissioning should be completed as specified in our important conditions.

VII. **Technical Bid Opening:** The technical bid will be opened on **17.12.2018; 4:30pm** at the **Department of Metallurgical & Materials Engg, IIT Madras** and the financial bids of those tenders who are technically qualified will be opened at a later date under intimation to them.

VIII. IIT Madras reserves the full right to accept / reject any tender at stage without assigning any reason.

Yours sincerely,

**Prof. V. Subramanya Sarma,**  
**Department of Metallurgical & Materials Engg,**  
**IIT Madras**  
**Chennai - 600 036.**

## SCHEDULE

### Important Conditions of the tender

1. The due date for the submission of the tender is **14.12.2018, 4:00pm**.  
The offers / bids should be submitted in two bids systems (i.e.) Technical bid and financial bid. The Technical bid should consist of all technical details / specifications only. The Financial bid should indicate item-wise price for each item and it should contain all Commercial Terms and Conditions including Taxes, transportation, packing & forwarding, installation, guarantee, payment terms, pricing terms etc. The Technical bid and financial bid should be put in separate covers and sealed. Both the sealed covers should be put in a bigger cover. The Limited Tender for supply of "**High Temperature Furnace**" should be written on the left side of the Outer bigger cover and sealed.
2. **Indian Agent:** If an Indian agent is involved, the following documents must be enclosed:  
Foreign principal's proforma invoice indicating the commission payable to the Indian Agent and nature of after-sales service to be rendered by the Indian Agent.
  - ✓ Copy of the agency agreement with the foreign principal and the precise relationship between them and their mutual interest in the business.
3. The offer/bids should be sent only for a machine that is available in the market and supplied to a number of customers. A list of customers in India and abroad with details must accompany the quotations. Quotations for a prototype machine will not be accepted.
4. Original catalogue (not any photocopy) of the quoted model duly signed by the principals must accompany the quotation in the Technical bid. No prices should ever be included in the Technical bid.
5. Compliance or Confirmation report with reference to the specifications and other terms & conditions should also be obtained from the principal.
6. **Validity:** Validity of Quotation not less than 60 days from the due date of tender.
7. **Delivery Schedule:** - The tenderer should indicate clearly the time required for delivery of the item. In case there is any deviation in the delivery schedule, liquidated damages clause will be enforced or penalty for the delayed supply period will be levied.

8. **Risk Purchase Clause:** - In the event of failure of supply of the item/equipment within the stipulated delivery schedule, the purchaser has all the right to purchase the item/equipment from other sources on the total risk of the supplier under risk purchase clause.
9. **Payment:** -
- I. No Advance payment will be made for Indigenous purchase. However 90% Payment against Delivery and 10% after installation are agreed to wherever the installation is involved. In case of import supplies the payment will be made only through 100% Letter of Credit i.e. (90% payment will be released against shipping documents and 10% after successful installation wherever the installation is being done).
  - II. **Advance Payment:** - No advance payment is generally admissible. In case of specific percentage of advance payment is required, the Foreign Vendor has to submit a Bank Guarantee equal to the amount of advance payment and it should be routed through the Beneficiary Bank to the end user Bank. Otherwise, the Indian Agent of the foreign vendor has to submit a Bank Guarantee through a Nationalized Bank of India.
10. **On-site Installation:** - The equipment or machinery has to be installed or commissioned by the successful bidder within 15 to 20 days from the date of receipt of the item at site of IIT Madras.
11. **Warranty/Guarantee:** - The offer should clearly specify the warranty or guarantee period for the machinery/equipment. Any extended warranty offered for the same has to be mentioned separately. (For more details please refer our Technical Specifications).
12. **Late offer:** - The offers received after the due date and time will not be considered. The Institute shall not be responsible for the late receipt of Tender on account of Postal, Courier or any other delay.
13. **Acceptance and Rejection:** - I.I.T. Madras has the right to accept the whole or any part of the Tender or portion of the quantity offered or reject it in full without assigning any reason.
14. **Do not quote the optional items or additional items unless otherwise mentioned in the Tender documents / Specifications.**

**15. Disputes and Jurisdiction: -**

- a. **Settlement of Disputes:** Any dispute, controversy or claim arising out of or in connection with this PO including any question regarding its existence, validity, breach or termination, shall in the first instance be attempted to be resolved amicably by both the Parties. If attempts for such amicable resolution fails or no decision is reached within 30 days whichever is earlier, then such disputes shall be settled by arbitration in accordance with the Arbitration and Conciliation Act, 1996. Unless the Parties agree on a sole arbitrator, within 30 days from the receipt of a written request by one Party from the other Party to so agree, the arbitral panel shall comprise of three arbitrators. In that event, the supplier will nominate one arbitrator and the Project Coordinator of IITM shall nominate one arbitrator. The Dean IC&SR will nominate the Presiding Arbitrator of the arbitral tribunal. The arbitration proceedings shall be carried out in English language. The cost of arbitration and fees of the arbitrator(s) shall be shared equally by the Parties. The seat of arbitration shall be at IC&SR IIT Madras, Chennai..
- b. **The Applicable Law:** This Purchase Order shall be construed, interpreted and governed by the Laws of India, Court at Chennai shall have exclusive jurisdiction subject to the arbitration clause.
- c. Any legal disputes arising out of any breach of contract pertaining to this tender shall be settled in the court of competent jurisdiction located within the city of Chennai in Tamil Nadu.

16. All Amendments, time extension, clarifications etc., will be uploaded on the website only and will not be published in newspapers. Bidders should regularly visit the above website to keep themselves updated. No extension in the bid due date/ time shall be considered on account of delay in receipt of any document by mail.

**Acknowledgement:** - It is hereby acknowledged that the tenderer has gone through all the conditions mentioned above and agrees to abide by them.

**SIGNATURE OF TENDERER  
ALONG WITH SEAL OF THE COMPANY WITH DATE**

### Technical specification for high temperature furnace

Furnaces will be used for annealing metallic and ceramic materials

<b>Furnace Specification</b>	<b>Requirement</b>	<b>Compliance</b>	<b>Remarks</b>
Casing	Good Laboratory Practice (GLP) & Good Manufacturing Practice (GMP) (or equivalent) compliant Non-rust Textured Stainless steel casing. Declaration of conformity document is to be enclosed.		
Maximum operating temperature	1200°C or above		
Maximum continuous operating temperature and time	1100°C or above upto 1000 hours or more		
Heat up time	Less than 120 minutes (Ambient to maximum temperature)		
Furnace door design	Vertical lift type and soft closing door that keeps heated surface away from the user		
Vent	Furnace chimney vent provided for expansion.		
Furnace construction	Double shell construction to maintain outer case temperature $\leq 50^{\circ}\text{C}$ as per BSEN 61010.CE or equivalent. Declaration of conformity document is to be enclosed.		
Thermocouple Port	Provision to insert additional thermocouple to check the temperature on load.		
Temperature controller	Digital PID microprocessor. Eight segment programmer with one program storage. Each segment consisting of one ramp and dwell.		

	<ul style="list-style-type: none"> <li>- Temperature &amp; time value entry in steps of 1°C &amp; 1 minute respectively</li> <li>- Status messages not as codes but as clear texts.</li> </ul> <p>With start time configurable</p> <ul style="list-style-type: none"> <li>- Operating hour counter</li> <li>- Temperature variable as °C &amp; °F;</li> <li>kWh meter; Real time clock,</li> <li>- Auto-tune function</li> <li>- Skip-button for segment jump.</li> <li>- The controller should have option for retrieving recorded data on an external drive.</li> </ul>		
Over-temperature protection	Digital over-temperature protection with alarm and separate emergency turn-off switch		
Weight	Less than 55kg		
Electrical Power supply	Furnace should work in 220/240 V, 50 Hz and single phase.		
Maximum power consumption	4 kW or lower		
Safety switch	Safety switch that isolates power to heating elements when door is open		
Data logging system	RS232 communication port to be provided		
Certifications	Vendors to enclose valid ISO and CE certifications		
Furnace construction materials	Materials classified as carcinogenic or hazardous according to TRGS 905, class 1 or 2 or equivalent should NOT be used. Relevant conformity documents to be enclosed.		

<b>Furnace chamber specifications</b>			
Thermo couple	Type R with noble metal material for longer life.		
Material	Ceramic heating plate with integral heating element which is safeguarded against splashing		
Volume	13 to 15 liters		
Height	200 – 250 mm		
Width	200 – 250 mm		
Depth	300 – 350 mm		
Uniform temperature zone accuracy and dimensions	<p>± 2°C</p> <p>At 500°C - Minimum of 160 x 160 x 120 mm</p> <p>At 1100°C - Minimum of 160 x 160 x 250 mm</p> <p>Distance above hearth is 20 mm for above temperature uniformity data.</p> <p>Documents confirming furnace performance in terms of temperature uniformity data and temperature uniformity graphs are to be provided.</p> <p>Uniform temperature zone in compliance with standard DIN 17052-1 or equivalent. Declaration of conformity document is to be enclosed.</p>		
Installation and training	Free installation, demonstration and training at IIT Madras.		
Number of furnaces required	2		
<b>Warranty</b>	3 year comprehensive warranty from the date of installation should be provided		



<b>Accessories (optional)</b>			
Gas-supply	Inert gas inlet and 100mm Flowmeter		
Stand for mounting	Stand for placing furnace on a granite slab of width / depth 550 mm		
Concealed heating elements	Additional cladding to ensure resistance against volatile compounds		
Thermocouple	Calibrated R and K type thermocouples (simplex ungrounded type) for external measurement of temperature. 2 metre long Teflon insulated stainless steel braided flexible with miniature male connector		
Temperature display unit	Digital reader for display of temperature (input from thermocouple) in Centigrade / Fahrenheit with inbuilt A-D converter		

**NOTE / Pre-Qualification criteria:**

- A) Equipment offered must be a model from the current serial production range of the manufacturer. Customized or One off Manufactured Model will not be accepted. Offer should be supported with printed catalogue / depiction on company website.
- B) The local vendor of OEM must have supplied at least 10 Furnaces to IITs, IISERs and other Govt. of India organizations. Please attach a reference list of supplies in last 1 year with contact details (Name, Phone, email address) of users.
- C) The company should be an Original equipment manufacturer (OEM) of the furnace. Please attach exclusive authorization certificate specific for this tender with quote without which bid will be rejected.
- D) The manufacturer must be an ISO9001 company & equipment model must be with CE compliance. Please attach relevant certificates.