

Dated: 21.06.2019

Dr. Somnath Bhattacharyya
Project Coordinator
Email: somnathb@iitm.ac.in

Due Date: 2 July, 2019

Technical Bid opening meeting on Due Date: 2 July, 2019, 3.30 p.m

Dear Sir/Madam,

On behalf of the Indian Institute of Technology Madras, offers are invited for the supply of **“Horizontal High temperature (1700° C) tubular furnaces with cooling arrangements”** conforming to the specifications given in **(Annexure-I)**:

Instructions to the Bidder

I. Preparation of Bids: - The Limited tenders should be submitted under single bid system (i.e.) Technical bid and financial bid together.

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:

Dr. Somnath Bhattacharyya
Associate Professor
Department of Metallurgical and Materials Engineering
Indian Institute of Technology Madras
Chennai 600036
Office : Materials Processing Section, Room no 104
ph: +91 44 22574760

III. Prices: - The price should be quoted in net per unit and must include all packing and delivery charges.

The percentage of tax & duties should be clearly indicated separately.

IV. Warranty: - One year warranty on the instrument & two year free repair service.

Yours sincerely,

Dr. Somnath Bhattacharyya

Department of Metallurgical & Materials Engineering,
IIT Madras
Chennai - 600 036

ANNEXURE - I

Item: Horizontal High temperature (1700° C) tubular furnaces with cooling arrangements

Furnace Features:-

- Double wall chamber.
- Hot Zone dimension 75 mm-ID X 85 mm-OD X 200 mm.
- Outer wall made of Steel.
- Electrical operation.
- Low Thermal mass.
- High temperature insulation fiber.
- High temperature Ceramic brick.
- 1700°C Tubular Furnace Horizontal both end opening.
- Furnace holding stand is required

Furnace Heating Element Details:-

- L-Type heating element
- MoSi2 super kanthal heating element.

Sensor Type:-

- R-Type Thermo Couple Sensors.

Phase Control Panel:-

- 3 Phase Thyristor PCB (Power Control Board).
- Microprocessor PID Programmable Controller.
- 16 segment 2 pattern.
- Input & Output indicating 1 amp
- Main Input & Output Switch.
- HRC 60Amps Safety Fuse.
- Ammeter and Voltmeter.
- Heavy step down Transformer input 440V, Output 50V
- Cooling fan
- Heating element connecting copper bus bar
- All connecting wires, R-Type Thermocouple sensor wire.

Specification of Furnace:-

- Furnace Maximum temperature 1700°C.
- Continues operation 1600°C for soaking time 4-6 hours. **(Two successful demonstration required)**
- Alumina Tube 99% size 75mm-ID X 85mm-OD X 1000mm-Length.
- SS Flanges for gas inlet outlet projection (Leak tight sealing of flange required).
- Accuracy $\pm 1^\circ\text{C}$
- Operation Voltage 440V, Three Phase, 50Hz, 60Amps Capacity.
- Power rating 12KWS.
- Circulation chiller with motor 30 Liters capacity and digital control panel

Safety

- Over temperature protection
- Thermocouple break alarm

Warranty

- One year warranty on the instrument
- Two year free repair service.