



Indian Institute of Technology Kanpur

Materials Science & Engineering

Enquiry Number: MSE/SO/Nov-2017/04

Enquiry Dated: November 20th, 2017

Closing Time & Date: 5:00 PM, December 11th, 2017

We require the quotation for High-Temperature tube furnace complying with or better than all of the specifications mentioned in **Appendix A**. The tube furnace should be capable of sustaining 1600°C for prolonged duration (continuous use). The inner and outer diameters should be 50 mm and 60 mm, respectively. The chamber size should be around 250 mm. The closing time and date for the above item is **5:00 PM on December 11th, 2017**.

The prospective supplies are required to send quotation in two parts in sealed envelopes, as “Technical Bid” and “Financial Bid”. The Technical Bid should contain detailed technical specification of the product being offered and should not mention any prices. The Financial Bid should include the detailed price quotation clearly including the cost of the equipment, taxes, service charges if any, shipping and handling charges. The two separate and sealed envelopes should be clearly marked appropriately as “Technical Bid” and “Price Bid”.

Terms and Conditions:

1. Maximum education discount, if any should be offered
2. Validity of quotation should be at least for 60 days
3. Prices should be FOB/FCA (if it is imported).
4. Price should include shipping charges if the furnace is from India.
5. Prices should include the installation and training cost
6. Warranty should be for at least two years after installation
7. Normal payment terms for the Institute will be applicable (90% on delivery of the items and the remaining 10% after satisfactory installation/ inspection)
8. Quotation should carry proper certifications like agency certificate, proprietary certificate, etc.
9. An undertaking that the vendor will supply all the spares and services for the equipment for at least two years from the date of commissioning at site.

Kindly send the Technical and Financial bids in sealed envelopes latest by 5:00 PM on 11th December 2017 to:

Dr. Shobit Omar
Faculty Building 412
Materials Science & Engineering
IIT Kanpur, U.P. 208016, India.
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Appendix A

Technical Specifications for High-Temperature Furnace

Sr. No.	Parameter	Required Specification
1.	Description	<p>High temperature furnace (1600°C), with MoSi₂ heating elements.</p> <ul style="list-style-type: none"> • Alumina tube with inner diameter of 50 mm and outer diameter of 60 mm. The heating length of the furnace chamber should be 250 mm. Stainless Steel sealing flanges should be provided to operate in vacuum or gas atmosphere. • PID Temperature Controller (preferably Eurotherm) with 4 programs having at least 16 section control segments. Time-temperature controller should be easily programmable (heating, hold, ramp rate, and cooling). May require cooling arrangement. It is required to have controls through computer via software. • Should be able to provide a ramp of 200°C/ hour. • Should provide thermocouples both: (i) flexible external thermocouple that can be placed near the sample, and (ii) internal thermocouple for controlling furnace temperature. • Can run at 230 V AC 50 Hz.
2.	Model Name	Clearly mention make, model and model number of the equipment being offered.
3.	Heating Elements & Thermocouples	<ul style="list-style-type: none"> • Clearly provide the details of heating element, • Type of thermocouples provided (both external and internal) • Minimum length of thermocouple wires should be ~1.5 m.
4.	Factory calibration	The high temperature furnace should come with factory calibrations
5.	Software	<ul style="list-style-type: none"> • The instrument should be installed with latest available version of software for control, operation and analysis compatible with at least Windows 10 (Operating System) • Should have intelligent calibration logic
6	Power Supply	• Specify the requirements of the power supply for the offered high temperature furnace
7	Documentation	<ul style="list-style-type: none"> • One sets of operating manual for the equipment and control system should be provided in hard copies • A soft copy of the above manuals should also be provided in a CD/DVD
8	Safety Norms	• The instrument should be compliant with international norms for safety and environment
9	Installation, Commissioning and Training	<ul style="list-style-type: none"> • The delivery of the furnace should be considered complete only after successful commissioning of the instrument • The pre-installation requirements should be communicated to IIT Kanpur well in advance of the installation • The Installation, commissioning and training should be done only by well-trained factory engineers

Appendix A

Technical Specifications for High-Temperature Furnace

		<ul style="list-style-type: none"> • The supplier should provide training to at least two candidates at the installation site to make them familiar with smooth operation of the instrument
10.	After-sales Service	<ul style="list-style-type: none"> • The supplier should provide a prompt after-sales service such as regular instrument maintenance, troubleshooting and fixing • The list of service centers in India should be included.
11.	Spares	<ul style="list-style-type: none"> • An undertaking that the vendor will supply all the spares and services for the equipment for at least 2 years from the date of commissioning
12.	Furnace of the same model in India	Provide the list of institutes where the same model is installed.

Optional Items:

1.	Heating elements	<ul style="list-style-type: none"> • Include a pair of MoSi₂ heating elements which can go up to 1600 C as spares.
2.	Thermocouples	<ul style="list-style-type: none"> • Include thermocouples (one each for internal and external connection) for replacement in case of damage of thermocouples.
3.	Other spare items should be included.	

Warranty and Maintenance:

1. Must have warranty for two years (in base cost)
2. Include the extended warranty and AMC (annual maintenance cost) for the next three years as 'optional'