

Indian Institute of Technology - Kanpur
Department of Biological Sciences & Bioengineering

Enquiry Number: : IITK/BSBE/2016-17/AK/NC 01, Dated: 01-08-2016

Sub.: Inquiry for the supply of: “Furnace of capacity 1500 °C”

Opening date: August 1, 2016 at 3:00 PM

Closing date: August 8, 2016 at 5:00 PM

Sealed quotes are invited for the above mentioned laboratory products as per the specifications given in the next page.

Your quote should mention/include the following:

- Maximum discount if any should be offered and mentioned.
- Quoted price should include the cost for installation, warranty and required accessories (see below).
- Validity of the quote at least for 60 days.
- FOB (indicating port of shipment) and CIF (New Delhi) values should be quoted separately if import is required. For quotes in INR, the price quote should be for delivery at Kanpur.
- The quote should cover insurance for transport up to Kanpur.
- Indian agency commission if applicable (should be certified by the principal if no agency commission is applicable) in case of import.
- Authorization certificate from the principal if you are a local agent.
- Terms and conditions for the payment, including the banker’s name of the principal and the account number, if any, for electronic transfer.
- Include proprietary item certificate if applicable.
- Technical literature to support your product

**Note: Offers should quote for all components of this facility (see next page for details).
Quotes that do not offer all components will be disqualified.**

Dr. Ashok Kumar
Department of Biological Sciences & Bioengineering
Indian Institute of Technology – Kanpur

Furnace of capacity 1500 °C must possess the following specifications:

HIGH TEMPERATURE CURING FURNACE

Compact space saving bench top design
Chamber Size: 150mm (H) x 150mm (W) X 200MM (D)
Outer Construction : Double Wall and powder coat painting
Skin Temperature: Just above ambient
Door Construction: Stainless steel door with proper insulation

Insulation: Minimum thickness 200mm in all sides with CUMILAG 32 INSULATION BRICK
Heating elements :Element- Molybdenum di silicide rods I SQUIRRED R , USA make/ Kanthal Super
Original Heating Elements

1700 deg C element Shape U-shape Hot zone (Le)- 125mm
Cold zone (Lu)- 225mm Total number- 4 numbers
Electrical connections - At the top of the furnace
Operation: 415 / 2phase / 20 A with power isolation transformer
Load:≈4 KW
Continuous Working temperature: 1600 °C
Programmable Heating: Rapid heating 1to 10 deg/minute
Temperature control: Eurotherm/ Honeywell/ Equivalent PID Programmer (16 segments and split into 4 programs) microprocessor based Digital Temperature programmable controller cum indicator
Temperature sensor: Pt+Rh30%/Pt+Rh6% – B type thermocouple with Recrystallised alumina sheath)
Accuracy: ±1°C

Power Controller: Phase angle controlled Thyristor drive with current feed back
Phase angle controlled thyristor drive with current feed back and 400 Amps Peak current
Indications : Ammeters and Voltmeters, Mains Indicator, Output Indicator, Mains on/off, out put on/off, Input, out put fuses

Fume Hood: There should be provision for discharge for harmful fumes out of the Furnace chamber to open environment.

Element Safety: There should be provision to safe guard elements from harmful fumes.
Elements should not fuse due to fumes.

Provision should be made for uniform heating from all sides.
Gas ventilation is provided at the back of furnace for easy removal of gas during process.