Under Certificate of Posting

Department of Physics, Indian Institute of Technology

IIT.P.O. Madras-600036

Ref.No. PHY/17-18/359/CSIR/PMUU

Date: 08-02-2018

PHY	2018	017	STORES

Dear Sir,

DUE DATE & TIME: 19.02.2018

1. The vendors have to send sealed Technical bid and price bid separately.
2. Quotation are invited in duplicate for the various items shown below/overleaf/enclosed list.
3. The quotations duly sealed and superscribed on the envelope with the reference No. and due date, should be addressed to the undersigned so as to reach him on or before the due date stipulated above.
4. The quotations should be valid for sixty days from the due date and the period of delivery required should also be clearly indicated.
5. If the item is under DGS & D RATE CONTRACT, RC No. and the price must be mentioned. If may be also please be indicated whether the supply can be made direct to us at the Rate Contract price. If so, please send copy of the RC (Please note that we are not Direct Demanding Officers)
6. Relevant literature pertaining to the items quoted with full specifications (and drawing, if any) should be sent along with the Quotations, whatever applicable. Samples if called for, should be submitted free of charges, and collected back at the supplier's expenses.
7. **Local Firms**: Quotations should be for free delivery to this Institute. If Quotations are for Ex-godown, delivery charges should be indicated separately.
8. **Firms outside Chennai**: Quotations should be for F.O.R Chennai. If F.O.R. consignor station, freight charges by passenger train/lorry transport must be indicated. If exgodown, packing, forwarding and freight charges must be indicated.
9. The rate of Sales/General Taxes and the percentage of such other taxes legally leviable and intended to be claimed should be distinctly shown along with the price quoted. Where this is not done, no claim, for Sales/General taxes will be admitted t any stage and on any ground whatsoever. **The taxes leviable should take into consideration that we are entitled to have consessional Sales Tax applicable to non-Government Educational Insitutions run with no profit motive for which a consession. Sales tax Certificate will be issued at the time of final settlement of the bill.**
10. Goods should be supplied carriage paid and insured.
11. Goods shall not be supplied without an official supply order.
12. Payment: Every attempt will be made to make payment within 30 days from the date of receipt of bill/acceptance of good, whichever is later.
13. Separately sealed technical and price bids are to be sent to the following address;

    Dr. P. Murugavel, (Principal Investigator)
    Associate Professor,
    Department of Physics
    IIT Madras, Chennai – 600036

The required technical specifications and terms & conditions are enclosed

Sincerely

Coordinator

Dr. P. MURUGAVEL
Associate Professor
Department of Physics
Indian Institute of Technology Madras
Chennai - 600 036, India

Indian Institute of Technology Madras

Technical specification for Thermal Evaporation Film Coating Unit

SI. No.	Parameter	Required specification
1	Description	Thermal Evaporation Film Coating Unit
2	Vacuum Chamber	• Metal bell jar with outer of minimum 300 mm and 400 mm minimum height. • Two circular glass view window. Cooling water pipeline around the chamber. • Compatible to high vacuum up to 10^{-6} mbar. Gasket/O ring at the bottom for high vacuum sealing. A metal mesh guard near the pumping port of the Diffusion pump.
3	Bell jar lifting mechanism	• Motorized lifting arrangement.
4	Rotary vacuum pump	• Capacity- 250 lpm. • Direct drive. • Air cooled. • Less oil charge. • Light weight. • Less noise and vibration. • Vacuum connection-KF-25. • Forced air cooling.
5	Diffusion pump	• Capacity 500 lps. • Ultimate vacuum 5 x 10^{-6} mbar. • Heater wattage 500 watts.
6	Butterfly valve	• S.S. 304 material made high vacuum valve to isolate LN_2 trap and Diffusion pump.
7	LN_2 trap	• Suitable liquid nitrogen trap above the diffusion pump. Capacity- 5 Ltrs of liquid nitrogen for 10 hrs operation
8	Air admittance valve	• Air admittance valve for venting the chamber after isolating the pumping system
9	Needle valve	Fine control needle valve for controlled admittance of inert gas (feeding gases).

10	Substrate heater with controller	• Max temp-600 °C. • PID ON-OFF controller. • K-type thermocouple. • 3 inch dia-heater. supercanthal heating element.
11	Thickness monitor	• Quartz crystal thickness monitor with crystal holder.. • 3 digit LED, Automatically varied 0.4 to 5 up-dates per second.
12	LT electrodes	• Two set of LT electrodes with power supply for thermal evaporation using boat, basket or filament.
13	L.T power supply	Capacity- 10 V at 200 Amps and 20 V at 200 Amps. Delivers, 200 Amps at 10 V and 100 Amps at 20 V with necessary connecting cables.
14	Evaporation source holder	One set of evaporation source holder to accept filaments/basket/boat
15	HT electrodes	One HT electrical feed through to carry power for ion cleaning of the substrate.
16	H.T. power supply	H.T transformers of 3.5 kV 50 mA with cables connected to feed through in the base plate.
17	L.T/ H.T control	An 8 Amps dimmer stat in the input circuit of LT/HT selector
18	Chiller	• Chilling capacity-2 TR with ON/OFF control and indication. Digital display controller, Display of water temperature, one phase with PID controller
19	Gauges	• Digital Pirani and Penning gauges
20	Safety devices	• Diffusion pump should switch off under water supply failure. • Thermostat switch to protect diffusion pump from excessive heating. • Diffusion pump should be interlocked with rotary pump. • Overload protection for rotary pump meter through current switch fixed on motor.

Terms and Conditions

1. User list of this thermal evaporation unit should be provided
2. Minimum two years of comprehensive warranty.
3. Should provide contact details of your customers who bought this system from you in the last 5 years
4. Cost, Insurance, Chennai Airport should be mentioned
5. Maximum education discount, if any should be offered.
6. It is preferable to supply the items within 4 weeks on the release of the purchase order.