INDIAN INSTITUTE OF TECHNOLOGY KANPUR
DEPARTMENT OF CHEMISTRY
DATED: 06/07/2017

Kindly send us sealed quotations for the following items against tender number IITK/CHM/JKB/17-18/8. Quotations should be addressed to Prof. Jitendra K. Bera, Chemistry Department, IIT Kanpur, Kanpur - 208016. Please send technical and financial bids separately. The last date for receipt of sealed quotations was 19.07.2017. Last date submission of tender is extended till 26.07.2017.

**Specifications for Glass Oven Kugelrohr with Controlled Vacuum Pump and Rotavapor System(Rotavapor, Controlled Vacuum pump And Chiller)**

**Specification for Glass Oven Kugelrohr- 1 Pc.**

- **Drying volume :** 5 - 40 mL
- **Adjustable angle :** 0 - 90 °
- **Rotation speed :** 0 - 50 rpm
- **Operating voltage :** 100 V - 230 V ± 15 %
- **Frequency :** 50/60 Hz
- **Power consumption max.** 450 W
- **Warm-up time approx. :** 10 min. (from 20 to 300 °C)
- **Temperature regulation range :** 40 - 300 °C
- **Temperature precision :** ± 5 °C (in center of the oven at 300 °C)
- **Temperature display :** steps of 1 °C
- **Programmable gradient steps:** 3
- **Vacuum pump connection (ON/OFF) :** Yes
- **Approval :** CE/CSA
- Should be supplied with fractional distillation, drying and sublimation accessory.
- Should be supplied with Controlled vacuum Pump (specification of vacuum pump and controller are given under Rotavapor system.)

**Specification for Rotavapor-1 Pc.**

- Manual action jack lift for lifting of evaporation flask.
- Rotation speed of 20 to 280 rpm or better.
- Digital bath temperature display of both set and actual temperature, Controlled range from 20 to 95 deg C with an accuracy of ± 2 deg C.
- Evaporating flask from 50-4000 ml can be used on the same joint adapter without additional connections.
- Continuous vapor duct with multifunctional combi-clip for safe removal of evaporation flask/vapor duct.
- Should be supplied with Vertical Glass Assembly.
- Should have over temperature protection of water bath.
- 1 liter Evaporating Flask and Receiving Flask should be provided in standard scope of supply.
- All display parameters like water bath temperature, vacuum etc. should have a separate electronics and not on single control panel.

**Specification for Vacuum Controller- 2 Pcs.**

- Modular (not integrated) vacuum controller and large graphic display screen.
- Measuring range: 1400- 1 mbar.
- Control range: 1100- 1 mbar.
- Automatic aeration when pressure above 1400 mbar.
- Timer function for process termination after pre-specified time
- Automatic On/Off functions for Vacuum pump V-100 and Chiller F-105.
- Provision for display of Chiller temperature and control.

**Specification for Vacuum Pump- 2 Pcs**

- Two step(heads) vacuum pump with a suction capacity of 1.5 $m^3$ /h.
- Ultimate vacuum – 10 mbar
- 2 stage diaphragms made of PTFE.
- Should have $ECO^2$ mode- $ECO^2$ mode is automatically activated after 1 hour of operation, hence the pump does not work on its full capacity. In the ECO2-mode the pump consumes less electrical power and works under reduced stress. As a consequence, the overall maintenance costs will be reduced over the lifetime of the pump.
- Soundproofing with enclosed housing to minimize noise and vibrations.
- Should be supplied with woulff bottle and Silencer.

**Recirculating Chiller – 1 Pc.**

- Compact and Robust Re-circulating Chiller with Cooling capacity of 550 Watts at 15ºC.
- Should have automatic stop function when the distillation process is terminated.
- Temperature Range: -10ºC to + 25º C
- Tank Capacity: 3 liters
- Flow rate: 2.5L/min. at pump pressure of 0.6 bar
- Coolant: CFC Free
- Built-in features like ECO mode, temperature lock and instant start with dynamic pressure adjustments.

**Note-**

**1. All components like Glass Oven, Rotavapor, Vacuum Pump, Controller and Re-circulating Chiller should be from the same Manufacturer/Company.**

**2. Company/Vender should have local service support and service engineer must attend the complaint within 48 hours.**

**3. Warranty of all instruments should be 2 Years from the date of installation.**

**Terms and Conditions:**

1. Supplier/Vendors should submit technical and financial bid together in separately sealed envelopes.
2. Evaluation will be done on the basis of technical specifications format provided as per our tender notice
3. Supplier who have experienced in Rotary evaporator and hot dryer and supplied in the national and international institutions will be preferred.
4. Financial bid will be open only for those, who meet tender technical specification.
5. The format for specification and complies statement is same as provided tender sheet for supplier/vendors for submitting technical specification in their own letter heads.
6. Please do mention tender number clearly on envelop.
7. Please send the name and contact details of the person to whom company had supplied a similar systems. Committee may ask for the feedback.
8. Vendors should have to submit the detail's designed as per tender specification.
9. Optical design should be submitted along with the technical bid.
10. The supplier must have supplied systems to institutions of national and/or international repute.
11. Quotation must indicate CIF Kanpur prices.
12. Warranty/Guarantee should be clearly mentioned. The Warranty must start from the date of installation at IITK.
13. Installation, demonstration, and training-sessions at IIT Kanpur will have to be provided by the manufacturer or the vendor for the quoted system.
14. Quotation should carry proper certifications like proprietary certificate, authorization certificate from manufacturer, etc.
15. Institute is exempted from payment of Excise Duty under notification No. 10/97.
16. The delivery period should be specifically stated. Earlier delivery may be preferred.