Dr. Babasaheb Ambedkar Technological University,

P.O. LONERE - 402 103 , Tal. Mangaon, Dist. Raigad

Our Ref No.: DBATU/STORES/Chem. Engg/Stefan Boltzmann's Apparatus and Dropwise and Filmwise Condensation Apparatus/2023-24/ 2871 04 NOV 2023 Date: 26/10/2023

Quotation for Stefan Boltzmann's Apparatus and Dropwise and Filmwise Condensation Apparatus Due On: 20/11/2023
Date of Opening: 21/11/2023 Time: 11:30 a.m.

To,

Sub: QUOTATION FOR THE SUPPLY OF STORES

Dear Sir,

Your quotation for the items listed overleaf, may please be submitted to the under signed, so as to reach this Office not later than. **20/11/2023** up to 11:00 a.m.

While submitting your quotation, the following procedure may please be observed and other points borne in mind.

01. The maker's name must be specified.
02. The "Terms and Conditions" for supply and delivery of stores, should be clearly indicated in the quotation, stating whether rates are, inclusive of all taxes, Packing and forwarding charges Freight charges etc. or not, However rates offered as including all taxes will be more welcome.
03. If packing and forwarding charges are to be charged separately, it should be so clearly stated in your quotation.
04. Please mention clearly whether consignment would be Ex-Godown, Ex-Shop, of F.O.R. dispatching stations. Preferably terms offered as "Delivery of consignment of stores, on F.O.R.
05. Envelope should be clearly marked with our reference No and date of this quotation. It should also be superscripted as per the format given above.
06. The quotation would be opened as per date and timing given above, if desired by you, you may depute an authorized representative with a letter of authority to be present at the time of opening of the quotation at this Office on the aforesaid day, date & time.
07. Your quotation must be valid for a minimum 30 (Thirty) working days from the date of it's opening.
08. Quotation received after the date of opening may not be taken into consideration.
09. Items tendered should confirm to the specification shown in the attached list when and where, full or no specifications are indicated against items in the list. Kindly furnish your full specification in accordance with accepted standards against each item tendered. Where reference to catalogue is made, the relevant catalogues/ Pamphlets/ Literature should accompany the quotation.
10. Your quotation should be for all new items and not for second hand.
11. Please state whether items will be available Ex-Stock. If not the minimum period for delivery, or for supplying the items or stores.
12. It should be clearly stated whether **GST** Insurance Freight or packing and forwarding charges, or any other taxes and duties etc. leviable.
13. It would be appreciated if illustrated catalogues/Literature etc are furnished with the quotation.
14. Expression to as "Complete with standard Equipment" complete with standard accessories "Equipment to" As good as should be avoided. If at all their use is unavoidable then it should be very specifically indicated as to what exactly they mean and what exactly would be supplied under them. Any ambiguity or vagueness should be avoided.

15. For convenience, kindly adopt while quoting the same serial Nos. as given in the list detailed below.

Thanking You.

Yours faithfully,

Registrar
Dr. Babasaheb Ambedkar Technological University,

List of Items

Sr. No.	Description / Specification	Make	Approx. Qty. Req.	Rate per Unit	Remark
1	**Twin Body Non-Participating Gas Radiation Enclosure (Stefan Boltzmann's Apparatus)** 1) Hemispherical dome: Electrolytic Copper, ID = 200 mm 2) Water jacket: SS 304, ID = 250 mm, drain valve, air vent 3) Test disc: Copper, φ 20, thickness=3mm 4) Water Tank: SS 304, 10 litres, variable speed mechanical stirrer, immersion heater, glass thermometer, PID controlled 5) Water heater: Resistance type 6) Digital Temperature Indicator: 0-199.9 °C, Multi-channel switch 7) Temperature sensors: RTD PT-100 (IST/CRZ Make, Class A, α = 0.003851), Nos. 01 (water), Nos. 01 (disc-01, RTD PT-100, ceramic metallized back, brazed attachment), Nos. 04 (dome vertex-01, curved surface-03, equidistant radial arrangement) 8) Temperature correction: Sheathed master sensor and temperature transmitter (Nos. 01), RTD PT-100 (IST/CRZ Make, Class A, α = 0.003851) 9) Ambient temperature: Glass thermometer, 0-50 oC, LC ≤ 1 oC, accuracy ±0.5 oC 10) Instruction manual and sample calculations are to be attached with documents 11) Detailed drawings with geometric dimensions of the equipment and sensors' locations must be provided along with the documents. 12) Control panel must have Mains Indicator & MCB for overload protection 13) Equipment needs to be demonstrated at institute's site, and results must be repeatable within ±2%, and results must be validated by standard results available in literature 14) Set-up must be well designed and mounted on a rigid frame painted with industrial PU Paint.		01		

	15) The company should also mention the list of experiments etc. possible with this equipment for the students and it should have proven track record of supplying such equipments to premier institutions. The company can also provide client list with PO copies.				
2	**Dropwise and Filmwise Condensation Apparatus** 1) Two Copper tubes one with natural finish and other gold polished fitted in a glass cylinder with ID 16 mm, OD: 19 mm & Length : 175 mm. 2) Water Flow measurement should be done by Rota meter(Reputed make). 3) Condensate Measurement should be done by Measuring Cylinder & electronic Stopwatch. 4) Steam Generator of capacity 8 Liters. (Approx.) should be made of Stainless steel 304 Grade thickness 2mm fitted with 1.5 kW Nichrome wire heater and Insulated with ceramic wool and cladded by aluminum foil. 5) Control valves should be provided for Steam and Cooling water Drain. 6) Bourdon type Pressure Gauge should be provided to measure pressure of steam. 7) Temperature measurement should be done by Temperature Sensors of RTD PT-100 type (IST/CRZ Make, Class A, α=0.003851) With Temperature transmitter and local digital display. 8) One ceramic bare temperature sensor to be welded on test section directly. There will be no other material in between ceramic sensor and test specimen to avoid any losses. 9) Control panel should comprising of Digital Temperature Controller i.e. PID Controller, 0-199.9°C, digital type energy meter for power measurement and Digital Temperature Indicator : 0-199.9°C, with multi-channel switch, With standard make On/Off switch, Mains Indicator etc. 10) Equipment has to be demonstrated at college site, results should be repeatable within ±5% of the sample calculations provided. 11) Operating/instruction manual and sample calculations, Photographs and line diagram of the equipment must be provided along with documents. 12) The whole set-up should be well designed and arranged on a rigid structure painted with industrial PU Paint. 13) The company should also mention the list of experiments etc. possible with this equipment for the students and it should have proven track record of supplying such equipments to premier institutions. The company can also provide client list with PO copies.		01		