

Department of Biochemical Engineering and Biotechnology

7th March 2015

Quotations are invited for one Controller for the bioreactor, having the following specifications. Technical and financial bids are to be submitted in separate sealed envelopes and placed together in a sealed cover, super scribed “**Quotations for Controller for the bioreactor**” The quotations should be submitted to “**Professor Ashok Kumar Srivastava, Block I - 229, Department of Biochemical Engineering and Biotechnology, IIT Delhi, New Delhi 110016**” on or before 29th March 2015.

Specifications for Controller for the bioreactor

General specifications –

- The controller of the bioreactor must be microprocessor based particularly designed for the measurement & control of pH, DO, Temperature and Foam.
- The respective ranges of the control of the different process variables include pH (1-14), DO (0-100%), Temperature (8^oC above coolant temperature to 80^oC) Stirrer speed (1-1000 rpm) Foam and aeration.
- The bioreactor controller should be able to execute *in-situ* sterilization of the bioreactor at 121^oC by an independent heating element & should be designed to have temperature control (working temperature range 8^oC above coolant temperature to 80^oC) by circulation of heated/cold water.
- The controller system must be able to independently measure (with display on console) and control the pH (1-14), DO (0-100%), Stirrer speed (1-1000 rpm) level/foam control. Provision should be there for an independent (noise free) data acquisition port for key process signals (pH, DO, temp etc)
- The bio-controller should preferably be mounted on an independent console unit with necessary controller and accessories.
- The bioreactor controller must include three number of fixed speed pumps for acid / alkali and antifoam.

Optional items (To be quoted separately) –

Stirrer assembly with a high torque DC motor based on TACHO / encoder feed-back which should be usable for rpm up to 1000 or higher for microbial cultures with **Rushton** turbine impellers.

Fermenter vessel must be glass *in-situ* sterilizable vessel with a SS 316 head plate having a total volume of 7 liter and working volume of at least 5 liters or higher.

Reputed vendors having experience of selling, installation and maintenance of fermentation systems for at least five years or more must submit the quote.

Terms and Conditions -

1. The prices quoted should be for F.O.B. basis.
2. **Taxes, if any, should be indicated separately**
3. Letter from the manufacturers (in original) to be attached for authenticity as authorized service provider.

4. Technical bid should contain **compliance chart** based on specifications as per NIQ, but must not contain any commercial information
5. The Institute has the right to reject any bid
6. The material should be delivered at Department of Biochemical Engineering and Biotechnology, IIT Delhi and the installation of bioreactor controller should be done satisfactorily by the vendors free of cost.
7. Delivery should be with-in 4-6 week after receiving the purchase order
8. Payment : 100 % after delivery and installation
9. Quote must be valid for 90 days from the date of the offer.