

**Department of Botany, University of Kerala, Kariavattom,  
Thiruvananthapuram, Kerala, India – 695581**

**TENDER –02/SERB Project/Bot/18**

Dated 12.03.2019

**E-Tender Notice**

Department of Botany University of Kerala, Kariavattom, invites open tender through e-Procurement (two cover system) from the Original Equipment Manufacturers or their Authorised Dealers for the supply, installation and commissioning of **Laboratory fermenter (Air lift bioreactor)**

Last date and time for submission of tender online	<b>25-03-2019, 04 PM</b>
Last date and time for submission of tender offline	<b>25-03-2019, 04 PM</b>
Date and time of opening of tender	<b>27-03-2019, 02PM</b>
Hard copies of the sealed tenders to be submitted to the office of	Dr. T S Swapna Professor, Department of Botany, University of Kerala, Kariavattom, Thiruvananthapuram 695 581, Kerala E mail: swapna@yahoo.com
For technical details contact	Dr. T S Swapna Professor, Department of Botany, University of Kerala, Kariavattom, Thiruvananthapuram 695 581 Kerala Mobile: 9745824670 E mail: swapna@yahoo.com

**For further details logon to [www.etenders.kerala.gov.in](http://www.etenders.kerala.gov.in)**

## **TECHNICAL SPECIFICATIONS of Laboratory fermenter (bioreactor)**

### **Specifications**

- The system should be a compact benchtop air lift bioreactor. Capable of batch, fed batch, continuous and perfusion processes.
- Vessel standard: 3-5 litre, working volume 2 litre. H D: 1: 1.8, Autoclavable glass vessel with water jacket (preferably in situ sterilizable). System should be scalable up to 40 L on a wide variety of autoclavable and single-use vessels.
- Schedule of ports- The vessel should be provided with ports at various locations on head plate for addition of acid, alkali, antifoam & inoculums – sampling port for sampling culture.
- LED lighting system for illumination with separate control over different wavelengths
- The assembly must include the following; air lifting facility with air compressor with autocharging, autoclavable cartridge air filters - 0.2  $\mu\text{m}$  for inlet and outlet. Air inflow volume: 0.5-10 slpm (5L)
- Instrumentation- microprocessor based controller for accurate control of temperature and pH and DO/ port for DO, with probes of well-known companies. Suitable data acquisition system with digital LCD display. Should have data storage device.
- Temperature measurement & control- Measurement: Duplex temperature sensor, sensor in thermo well in top plate. Digital display, control accuracy  $\pm 0.2^{\circ}\text{C}$  (18-30 $^{\circ}\text{C}$ ), Measurement accuracy  $\pm 0.1^{\circ}\text{C}$ .
- pH measurement & control- pH probe from well-known brand, cable, range: 0-14, pH controller, acid / alkali addition system consisting of 2 sets of feed bottles with disposable disc filters, 4-5 meter silicone tubing with fixed speed peristaltic pumps

- Foam control- antifoam probe, level switch on/off, antifoam addition system consisting of a set of 1 no bottle with disposable, silicone tubing & peristaltic pump (fixed speed).
- Instrument should be supplied with Suitable Air compressor, chiller and condenser- 0.5 hp or higher, oil free compressor and accessories
- Sampling Fixed height or height adjustable sample pipe with sampling system
  - Accessories to supply should include; drain valve, needle adaptor, needle, septa (24 numbers), 4-5 meter silicone tubing and blind plug.
- evidence of research by publication of research papers using the instrument in tender should be attached with technical bid

**General Conditions:**

1. The tender shall be submitted in the two bid *viz.* Technical Bid and Financial Bid. Only those qualified in technical bid will be eligible for participating in financial bid. A presentation regarding the technical specification and item to be supplied shall be done before the technical evaluation committee if requested.
2. The bidder should be a manufacturer or their dealer specifically authorized by the manufacturer to quote on their behalf for this tender as per Manufacturer Authorization From and Indian agents of foreign principals, if any, who must have designed, manufactured, tested and supplied the equipment(s) similar to the type specified in the “Technical Specification”. Such equipment must be of the most recent series/models incorporating the latest improvements in design. The models should be in successful operation for at least one year as on date of Bid Opening.
3. **Compliance Statement:** Along with the technical details provide a tabular column indicating whether the equipment quoted by you meets the specifications by indicating 'YES' or 'NO'. If 'YES', support the claim by providing original brochures. **Venders should provide clear brochures/data sheets about the equipment and it’s working. Also include adequate proof for the claim regarding the performance.**

4. **Reference:** Names of Institutes with contact person and telephone/ email where similar equipment supplied by you in India [Preferably South India] shall be mentioned in the bid.
5. Publication evidence by using the quoted equipment should be attached with technical bid.
6. Incomplete & conditional tenders and tenders received after the due date will be summarily rejected without assigning any reasons thereof.
7. The price should be inclusive of all taxes, duties, transportation, insurance, installation etc. Nothing extra will be paid in addition to the quoted rate. Any amount in Indian rupees for installation, commission, labour, spares, service etc shall be entered in item 2 of BoQ.
8. Payment Terms: 90% payment shall be made through irrevocable LC on presentation of complete and clear shipping documents and balance 10% of the amount shall be released after the receipt, installation commissioning and acceptance of the equipment.
9. Validity of tender: Tender submitted shall remain valid at least for 120 days from the date of opening the tender. Validity beyond 120 days, from the date of opening of the tender shall be by mutual consent.
- 10. Every tenderer should submit an Earnest Money Deposit (EMD) of Rs.25,000/- or equivalent Bank Guarantee valid up to the installation of the equipment.**
11. **Every tenderer should submit Tender fee of Rs. 2,500/-** (Those who submitted tender for 01-SERB Project/Bot/18 Dated 18-09-2018 need not submit tender fee)
12. Delivery and installation: Proposed delivery schedule should be mentioned clearly. Delivery and installation and training (one week) should be made at the Department of Botany, University of Kerala, Kariavattom campus, Trivandrum without extra cost. University of Kerala will provide customs duty exemption certificates if required.
13. Service facility: Supplier should mention their details of service setup and manpower in Thiruvananthapuram who are responsible for after sales support.

14. The model number, make, and a printed literature of the product shall submit positively.
15. In case of any dispute, the decision of the University authority shall be final and binding on the bidders.
16. The undersigned reserves the right to reject any or all of the tenders received without assigning any reason thereof.
17. If any component is found to be defective during the warranty period, the vendor has to replace the defective item immediately at their own cost.

**Documents to be Uploaded**

- 1 Signed Compliance Matrix
- 2 Detailed Technical Brochure
- 3 Under taking of support for next 10 Years
- 4 BoQ
- 5 DD/Hard copy of Bank Guarantee if opted

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