

Indian Institute of Technology - Kanpur
Department of Biological Sciences & Bioengineering

Enquiry Number: AB/BSBE/2017-2018/01, dated: 16.05.2017

Sub.: Inquiry for the Water purification system

Opening date: 17 May, 2017 at 10:00 AM

Closing date: 29 May, 2017 at 5:00 PM

Sealed quotes (technical bid and price bid separately sealed) are invited for the **Water purification system** as per the specifications given in the next page.

***Your quote should mention/include the following:**

- Maximum discount if any should be offered and mentioned.
- Quoted price should include the cost for installation, warranty and required accessories (see below).
- Validity of the quote at least for 90 days.
- FOB (indicating port of shipment) and CIF (New Delhi) values should be quoted separately if import is required. For quotes in INR, the price quote should be for delivery at Kanpur.
- The quote should cover insurance for transport up to Kanpur.
- Indian agency commission if applicable (should be certified by the principal if no agency commission is applicable) in case of import.
- Authorization certificate from the principal if you are a local agent.
- Terms and conditions for the payment, including the banker's name of the principal and the account number, if any, for electronic transfer.
- Include proprietary item certificate if applicable.
- Technical literature to support your product (in technical bid).
- Users' list with contact address in technical bid.

The quote should reach the undersigned on or before 5 pm on or before 29 May, 2017.

The envelope should be marked as "**Water purification system**"

To,
Dr Amitabha Bandyopadhyay
Lab # 10,
Department of Biological Sciences & Bioengineering
Indian Institute of Technology,
Kanpur 208016 (UP)

For any query, contact: Dr Amitabha Bandyopadhyay
Department of Biological Sciences & Bioengineering
Indian Institute of Technology,
Kanpur 208016 (UP)
Ph: 0512-259-4055

“Water purification system”

Essential components and features:

*Item No. 1: Water purification system - (Quantity 1)

*Specification:

1. The system should be single stage system- produce endotoxin and bacteria free ultrapure water directly from potable water supply.
2. It should be capable of providing ASTM Type I (minimum 18 Mega ohm resistivity) water from potable tap water.
3. The system should have feed water acceptance level of Conductivity upto 2000 $\mu\text{S}/\text{cm}$, Fouling Index (SDI) upto 50 and total Chlorine less than 3 ppm.
4. It should have pretreatment kit with 5 μm and 1 μm filter followed by at least 2 stage pre-treatment cartridge consisting of Activated Carbon, Anti-scaling Agents and 0.5 μm depth filter to protect downstream cartridge. Pre-filter should be with inbuilt softener to handle 250-300 ppm of hardness & activated carbon for the removal of free chlorine & tap water Organics.
5. System should have Separate independent RO and Polishing cartridge.
6. System should be based on superior De- Ionization Module.
7. It should have constant RO flow rate minimum 8L/hour.
8. System should have RO Reject recycling that is high recovery from 25% to 66%.
9. System should have Reverse Osmosis module made up of thin film composite polyamide RO membrane with rejection rate of 94 - 99% and recirculation loop for optimum utilization of feed water. It should have the provision display Percentage ionic rejection of RO Cartridge to monitor the performance of RO.
10. The system should have feed water specific Purification pack before UV lamp consisting of mixed bed ion exchange resin / micro filter / activated carbon to ensure better purification and longer life of the cartridges.
11. System should have 17watt, low pressure mercury vapor lamp made of quartz with dual wavelength (185 and 254nm). The lamp should have an electro polished 316L SS housing , ensures reduction of TOC as well as destruction of bacteria.
12. The system should have constant flow rate, continuous monitoring of the quality of water at various stages of water purification as well as temperature feedback mechanism.
13. System should have co-axial resistivity cell with 0.01 cm^{-1} cell constant at various stages of purification chain to monitor the quality of water.
14. System's Cartridge should have appropriate tag to enable traceability of Mfg. Date, Lot No., Life of Cartridge, no. of day's usage etc. and facilitate estimation of volumetric life of the cartridges.
15. System should have built in resistivity and TOC monitor to design to comply most demanding norms and system should be able to self-calibrate with TOC Curve check.
16. It should have minimum 30 L storage tank with auto cutoff level sensors.
17. System should be compatible for onsite IQ/OQ/PQ(Onsite Validation)
18. Production rate of purified water should be at least 8 L/hr.
19. System should be capable to produce more than 50 liter of Water for laboratory use.
20. System should provide perfect convenience through POD for separate point of delivery for ultrapure water.
21. Final filter should provide either biological grade or pharmaceutical grade water equivalent to DEPC treated water.

22. Flow rate should be adjustable between 50 to 2000 mL/min.

23. The system should have final water quality as below:

Resistivity	18 to 20 Mega Ohm cm (at 25 °C)
TOC	≤ 5 ppb
Particulates (size > 0.22 μm ³)	< 1 particulate/mL
Bacteria	< 0.01 CFU/mL
Particulates (0.22 micron)	< 1/mL
Pyrogens	< 0.001 EU/mL
RNases	< 0.01 ng/mL
DNases	< 4 pg/mL

24. One set of Extra Consumable with the System Additional 2 year of AMC should also provide with the system.

25. A valid User list with details should be provide.

26. The system provider should have supplied a minimum of 100 water purification system.