

 <p>IIT PALAKKAD</p>	<p>भारतीय प्रौद्योगिकी संस्थान पालक्काड Indian Institute of Technology Palakkad अहलिआ एकीकृत कैम्पस, कोज़िहपारा Ahalia Integrated Campus, Kozhipara पालक्काड- 678557 Palakkad – 678 557</p>	<p>दूरभाषसंख्या/ Phone no: 04923 – 226300/590/586 ईमेल/ Email : purchase@iitpkd.ac.in</p>
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Ref No: IITPKD/ELE/AA/118/2017

Date: 02.02.2018

Due Date of the tender: 16.02.2018 at 3.00 PM

TENDER FOR INVITING QUOTATIONS

Dear Sirs,

On Behalf of Indian Institute of Technology Palakkad quotations are invited for “**De-Ionized Water Plant for Central Fabrication Facility**” confirming to the specification in the Annexure.

- 1) **Preparation of Bids:** - The tenders should be submitted **under two-bid system** (i.e.) Technical bid and Financial bid. The technical bid should consist of all technical details along with commercial terms and conditions. No prices should be included in technical bid. Financial Bid should indicate item – wise prices for the items mentioned in the technical bid. The technical bid and the Financial should be put in separate cover and sealed. Both sealed covers should be put into a bigger cover
- 2) The Quotations duly sealed and superscribed on the envelope **with the reference No. and due date, should be addressed to the undersigned so as to reach him on or before the due date stipulated above. Fax and Email quotation are not acceptable.**
- 3) The price should be quoted per unit and packing and delivery charges should be indicated separately. The offer/bids should be exclusive of Taxes and Duties, which will be paid by the purchaser as applicable. However the percentage and of taxes and duties as on date should be clearly indicated.
- 4) The Quotations should be valid for **sixty days** from the due date and the period of delivery required should also be clearly indicated.
- 5) **Local Firms:** Quotations should be for free delivery to this Institute. If Quotations for Ex-Godown delivery charges should be indicated separately.
- 6) Firms outside Palakkad: Quotations should be for **F.O.R. at IIT Palakkad**. If F.O.R. consignor station, freight charges by passenger train / lorry transport must be indicated. If Ex-Godown, packing, forwarding and freight charges must be indicated.
- 7) Goods should be supplied carriage paid and insured. Goods shall not be supplied without an official supply order.

- 8) **Custom Duty:** Custom Duty which will be paid at a concessional rate against duty exemption certificate.
- 9) **Goods and Service Tax : Concessional GST@ 5% will be paid extra as per GOI notification no. 47/2017, dated 14.11.2017.**
- 10) **Payment:** Every attempt will be made to make payment within 30 days from the date of receipt of bill / acceptance of goods, whichever is later. **Please indicate actual product cost + Taxes separately.** No advance payment will be made. The Tenderer have to furnish the bank details along with tender like Account No, Account Name, IFSC Code etc.,
- 11) **Submission of Bids:** Quotation should be sent to the following address “**The Registrar, Indian Institute of Technology Palakkad, Ahalia Integrated Campus, Kozhipara, Palakkad -678 557, Kerala**”, Phone No: **04923 226 300/ 590/586** , Email : purchase@iitpkd.ac.in
- 12) **Delivery Period:** The quotation should indicate clearly when delivery and installation will be made. In case there is any deviation in the delivery schedule, liquidated damages may be enforced or penalty for the delayed supply period may be levied.
- 13) **Late offer:** The quotation received after due date will not be considered. Please ensure that your offer is sent well in advance to reach the Institute by the due date.
- 14) **Warranty:** Warranty Clause should be indicated Clearly. For more details please refer our specification.
- 15) **Acceptance and Rejection:** I.I.T Palakkad has the right to accept the whole or any parts of the Tender or portion of the quantity offered or reject it in full without assigning any reason.

Yours faithfully,

Encl: Specifications

Registrar, IIT Palakkad

Technical Specifications for De-Ionized Water System for Central Fabrication Facility, IIT Palakkad

1.	Overview	
	<p>(a) Integrated De-Ionized (DI) Water System that should be capable of producing Type II (at least 5 Megaohm-cm resistivity) and Type I (at least 18.2 megaohm-cm resistivity) water with pretreatment cartridge, reverse osmosis module, electro deionization module, mixed bed ion exchange resin and inbuilt TOC (total organic carbon) monitor – Quantity 1 Number</p> <p>(b) Dedicated Point-Of-Delivery Unit for control of DI water system and delivery of Type I water inside Class-100 fume-hoods that will be provided by IIT Palakkad. – Quantity 2 Numbers.</p> <p>(c) Distance between the two Point-Of-Delivery units and the Integrated DI water system can be as high as 2 m. The two Point-Of-Delivery units must be allow for concurrent use.</p> <p>(d) Water purification system has to be manufactured at regulated site ViZ ISO 9001 & ISO 14001 as per the Global regulatory standard. Proof must be attached.</p>	
2.	Type II water requirements	
	(a) Flow rate	At least 15 L/hour
	(b) Resistivity of water	At least 5 MegaOhm-cm (at 25°C) ("typically" or "may be" will not be accepted)
	(c) TOC	< 30 ppb
	(d) Confirmation to standards	Resistivity, TOC and bacteria levels must match the requirements of Type II water as described in ISO 3696 or ASTM D1193 and Purified Water as described in USP®, EP. Proof must be provided.
3.	Type I water requirements	
	(a) Flow Rate	0.05 to 2 L/min or greater
	(b) Resistivity of water	18.2 MegaOhm-cm (at 25°C) ("typically" or "may be" will not be accepted)
	(c) Microorganisms	< 0.1 cfu/mL
	(d) Particulates (size < 0.22 μm)	< 1 /mL
	(e) Pyrogen Levels	< 0.001 EU/mL
	(f) RNase Level	< 0.01 ng/mL
	(g) DNase Level	< 4 pg/μL
	(h) TOC	< 5 ppb
	(i) Confirmation to standards	The system must produce ultrapure water in agreement with the quantitative specifications of Type I water as described in ISO 3696, ASTM D1193, and of EP and USP Purified Water. Proof must be provided.
4.	System Configuration	
i.	Prefilter Stage	(a) Two Stage pretreatment system – 5 micron and 1 micron wrapped type depth filter
		(b) Automatic low/high pressure cut off must be supported.
		(c) The feed water acceptance should be up to 2000

		μ Siemens conductivity, Total Chlorine content up to 3 ppm and TOC content up to 2000 ppb.
ii.	Reverse Osmosis (RO) Stage	<p>(a) Pretreatment cartridge with antiscaling compound must be provided.</p> <p>(b) Conductivity meter should present before & after RO is mandatory to monitor the performance of RO</p> <p>(c) Water Recovery loop should be present in the system & same should be shown in the flow chart diagram in the quoted model brochure.</p>
iii.	Electro Deionisation (EDI) Stage	<p>(a) Mixed bed ion electro deionisation module with auto regeneration by a weak electric current must be present eliminating the need for chemical regeneration or replacement of DI resin cartridges .</p> <p>(b) Carbon beads must be used at cathode of the EDI module to prevent scaling of the module</p> <p>(c) If any additional Conditioner cartridge prior to EDI module is included, the bidder should quote 10 numbers of such cartridge along with main quotation.</p> <p>(d) Coaxial resistivity cell with a flow through design and a cell constant of 0.01cm^{-1} must be present.</p>
iv.	Collection Tank	<p>(a) Blow molded cylindrical Poly Ethylene reservoir with a conical bottom and opaque walls with a 60 liter capacity must be provided.</p> <p>(b) The tank should fill from the bottom. Appropriate valves etc for this facility must be provided.</p>
v.	Type I generation stage	<p>(a) Application Specific cartridges to remove ionic and organic contaminants to trace levels must be present.</p> <p>(b) Water production unit that can be placed either on the bench , under the bench or on the wall</p>
vi.	Point of Delivery (POD) Unit	<p>(a) POD unit must be provided with polishing filters at the point of use.</p> <p>(b) Option of connecting at least three POD units with the main water producing unit must be supported.</p> <p>(c) POD unit must have adjustable height and rotating arm so as to be adjustable to any glass ware</p> <p>(d) POD must have multi colour monitor displaying resistivity, TOC, level of water in reservoir, volume dispensed and other alarms.</p>
vii.	Final Filter	Pharmaceutical grade final filter with 0.22micron membrane filter in stack disc configuration
viii.	Online Measurement	<p>(a) Built in TOC monitor with a 0.5mL Quartz cell and UV lamp which accurately measures TOC from 1-999ppb must be provided.</p> <p>(b) The design of the resistivity meter and TOC meter should follow the suitability test requirements as per USP 30 - NF 25 Or/And USP suitability test monograph <645> for resistivity, USP suitability test monograph <643> for TOC. Proof must be provided.</p>

5.	Consumable	Must Quote separately for consumables (cartridges, filters etc.) for ONE YEAR for trouble free working.
6.	Warranty	At least three years warranty must be quoted.

Who can participate in the bid?

Only those bidders fulfilling the following criteria should respond to the tender.

1. The bidder should be either an Original Equipment Manufacturer (OEM) of DI water plants or should be an authorized representative (provide documentary proof) of an OEM.
2. The bidder should be a company registered under the Companies Act, 1956/2013 OR a Limited Liability Partnership /a registered partnership firm OR a sole-proprietorship entity. Appropriate Registration incorporation certificate must be submitted.
3. The bidder must have a registered office in Karnataka/TamilNadu/Telangana/Andhra Pradesh/Maharashtra or Kerala. Certificate of registration for the offices to be provided.
4. The bidder must also have a service center in Karnataka/Tamil Nadu/ Telangana/Andhra Pradesh or Kerala. Certificate of registration for the centers to be provided. Details about scope of service activities provided by the service centres must be provided. The contact details of the service engineers must be provided.
5. The bidder must be in existence in the business of DI water plants for a minimum period of 5 previous financial years (before or since 01 April 2012). Documentary evidences of experience must be provided.
6. The bidder should have implemented orders of DI water plants worth exceeding INR **5 Lakh** during previous three financial years (01 April 2014 – 31 March 2017). Copies of the most recent purchase orders and certificates of successful implementation must be included. Copies of financial statements or evidence of turnover must be furnished.
7. The bidder should have documentary evidence of having supplied **at least 10 Numbers. of DI water plants** to clean-room facilities run in Centrally Funded Technical Institution (e.g., IIT, NIT, IISc, IISER, etc.) in the recent past. The bidder must provide a certificate of satisfactory performance of the supplied equipment from the institute to which they have recently supplied. Contact details of the faculty-in-charge of the installed setup must also be provided.
8. The bidder must provide detailed specification of each equipment/item. Model numbers, data sheets and brochures must be included for each quoted equipment/accessories/item. Specifications corresponding to quoted model number must be available publicly via OEM's website for scrutiny. If not, bid can be disqualified on technical grounds.
9. The purchase committee at IIT Palakkad reserves the right to ask for photographs/CAD drawings/flow diagrams of sub-assemblies to satisfy themselves of the proven capabilities of the bidder in manufacturing systems similar to the one that is being specified here. The bidder must provide these details within two working days of receiving such a request via email. Decision regarding technical compliance of the bidder can be taken on the basis of these photographs/CAD drawings/flow diagrams.
- 10. Compliance sheet for the technical specification and OEM Brochure have to be attached along with the Technical bid. Vendor has to fill the compliance sheet and mention page number or reference number in OEM brochure. Unfilled / partially filled sheets lead to disqualification.**
- 11. Service and warranty for a minimum period of three years for the equipment must be provided. AMC for additional three years must be quoted separately.**