

INDIAN ASSOCIATION FOR THE CULTIVATION OF SCIENCE
2A & 2B, RAJA S C MULLICK ROAD, JADAVPUR, KOLKATA 700032
Invitation for Tender for Supply of
"Clean Type I and Type II Laboratory Water System"

Notice Inviting Tender No. IACS/CSS/AD/15-16/34 Dated :11.01.2016.

Indian Association for the Cultivation of Science invites Sealed Tenders for purchase **Clean Type I and Type II Laboratory Water System** to be procured from the Institute allocated funds for CSS facility development. The bids are to be submitted in **Two-Bid pattern i.e. Technical Bid and Price Bid** in two separate sealed covers distinctly marked accordingly and both to be put inside another envelope, which should be sealed and super scribed with '**Clean Type I and Type II Laboratory Water System for CSS, IACS**' Tender Notice No., Due date and time of opening. Two bids i.e. Technical Bid and Price Bid should be identical in all respects except that the Technical Bid should have blank space at the places where prices have been quoted in the Price Bid. The bidders may submit bids duly signed in their own letterheads. In case the scheduled date of opening of tender is declared as holiday, the tender will be opened on the next working day at 3.00 P.M. The technical bids will be opened first to evaluate the technical specifications of the equipment and the price bids of the technically qualified companies only will be opened thereafter. Complete tender bids should reach the **Office of CSS, Indian Association for the Cultivation of Science, 2A & 2B, Raja S C Mullick Road, Jadavpur, Kolkata 700032, West Bengal, India**, on or before the scheduled date & time specified below:-

Tender Notice No.	IACS/CSS/AD/15-16/34	Dated
	11.01.2016.	
Last Date and Time of Submission of Tender	03.02.2016 before 15:00 hrs	
Pre-bid Meeting (date, time & venue)	20.01.2016 at 15:00 hrs in S N Bose Hall	
Date, time and place of opening of (a) Technical part of Tender (b) Financial part of Tender	(a) 03.02.2016 at 15:00 hrs S N Bose Hall (b) 04.02.2016 at 15:00 hrs S N Bose Hall	
Contact Details	Dr. Abhishek Dey e-mail:icad@iacs.res.in	

2. PRICE BID: The financial bid indicating item-wise price for the items mentioned in the technical bid should be kept in a separate sealed envelope duly super scribed as "PRICE BID" on the outer cover of the envelope as already detailed above.

(a) The components of the Clean watersystem has to be **quoted in dollars/Euros for (imported) on CIF basis and in INR for (domestic) on FORD basis.**

(b) **The price bid of only technically qualified bidders will be opened and they will be intimated the date and time of opening at their email id-s.** Rest of the bids will stand rejected.

BID SECURITY:

1. An Account Payee Demand Draft/ Pay Order for Rs. 2,00,000/- (Rupees Two Lakhs only) drawn in favor of "Indian Association for the Cultivation of Science" is to be furnished along with Technical Bid as Bid Security money (or EMD). Bidders registered with the Central Purchase Organizations, National Small Industries Corporation etc. may be exempted from paying EMD subject to their submission of a copy of valid registration certificate with their Technical Bids, failing which their bids will be rejected.

2. The Demand Draft/ Pay Order for the Bid-Security money should have at least 60 (sixty) days validity period after the opening of the Bids.

3. In case of non-award of the work, the Bid Security money would be returned to the bidders.

PERFORMANCE SECURITY:

1. An Account Payee Demand Draft/Bank Guarantee of Rs. 2,50,000 (Rupees Two Lakhs Fifty Thousand Only) drawn in favor of "Indian Association for the Cultivation of Science" is to be furnished by the successful bidder to be awarded the contract, as "Performance Security" money.

2. Performance Security should remain valid for a period of 90 (sixty) days beyond the date of completion of all contractual obligations of the supplier including warranty obligations.

3. Bid Security would be refunded to the successful bidder on receipt of Performance Security

3. TECHNICAL BID:

IACS wishes to install a clean water supply system capable of daily supply of 1000 liters of type II water and 200 liters of type I water (the later should use the type II water as the feed water). The **treatment** is to be done **in three stages. Stage 1 should use the tap water at IACS as feed** and generate potable water that can be used as the feed water to stage 2 having specifications indicated below. **Stage 2 should use the product water of stage 1 and generate 1000 liters of type II water daily. Stage 3 should use the product water from stage 2 and generate 200 liters of type I water**

daily. The bidding companies are required to provide a **comprehensive solution involving instruments, consumables, spare parts, comprehensive maintenance contract** for the above system for a period of **five years** i.e. no hassle supply of 1000 liters of Type II and 200 liters of Type I water daily for **five years. The estimates for the consumable items are to be provided based on the daily requirement described above extended for a period of five years (i.e. 1200 days of continuous use) of continuous use and the prices are to be included in the price bid.** IACS shall provide clean space for installation with the requisite plumbing and electrical supply. **The bidding vendor shall remain responsible for the regular maintenance and upkeep of the system and accountable for the performance and quality of all of the components/consumables quoted.**

The Clean Type I and Type II Laboratory Water System would comprise of the following components:

Stage1: Pre Filter to counter the Particulate Load

Pretreatment Cartridge with anti-scaling compounds, activated carbon filter and 1 Micron Particulate filter to obtain Chlorine and Colloid free water, and compatible with Feed Water Quality of SDI levels up to 12 and total Chlorine level of 3 ppm and conductivity of 2000 micro Siemens/cm. Should be fitted with an easy lock and release mechanism for future maintenance.

The cartridge should have an RFID tag or other unique identifiers for traceability.

The Stage Purification 5 Micron and 1 Micron Polypropylene graded density wrapped type depth filter with Low Voltage 50 Watts powered DC Pump with noise levels of Less than 48 Decibels.

Additional RO based pre filtration should be there.

Product Water should have the following specification.

Nature: Potable (as per WHO, EC, EPA and ISO)

Conductivity: < 2000 $\mu\text{S}/\text{cm}$ @ 25°C

Temperature: 2 to 35 °C

pH: 4 to 10

Fouling Index SDI: upto 12

Free Chlorine: upto 3 ppm

LSI < 0.3

CaCo₃ < 300 ppm

Stage2: Analytical Grade Water System (Type II)

The System should have the Electro De-ionization module (EDI Module), with mixed Bed Ion Exchange Resin along with Carbon Beads at cathode to avoid scaling so that the Regeneration of the Resins happens on application of Electric current.

To reduce the consumable replacement, the water system will include an automatic regenerative EDI (Electro Deionization) module that does not require softening pre-treatment.

The system should have a high Flux thin RO Membrane with 200 Daltons cutoff. The system should compulsorily have conductivity cells before and after the RO Membrane to 95-99 % rejection of Inorganic Ions 99% rejection of all Dissolved organic substances.

RO cartridge should have high recovery loop up to 70 % reduce the wastage of feed water.

The system should have Temperature Compensation of Product water temperature of max +/- 0.1 degree irrespective of temperature changes.

The system should also have the following:

- In built display to ensure the system parameters are displayed all the times
- Auto diagnostic facility with Error NO and Alarm Code and real time clock to log reports with date and time to ensure complete traceability.
- Automatic Cleaning, Rising, and Flush mode will be preferred.
- The system should indicate overdue maintenance and poor quality water delivery.

Feed water Specifications:

Output from Stage 1 filtration.

Product water specifications:

Product Water should meet or exceed Type II water quality corresponding to analytical –grade water as defined by ASTM, CAP, NCCLS, GMP, GLP and ISO 3696/BS 3997 with the following Product Water Technical Specifications:

- Resistivity 10-15 Megh Ohms
- TOC Levels less than 30 ppb
- Bacteria count- 10 cfu/ml
- Flow Rate -minimum 100 Ltrs/Hr
- EDI – With Carbon Beads at cathode and which doesn't require pre-softening.
- Silica Rejection > 99.9%

Stage 3: Storage reservoir and Type I Ultrapure Water Unit

Specifications for Storage Reservoir for type I water

Blow molded conical bottom Polypropylene reservoir with 500 Ltrs Capacity with sensor rod float switch and single 3 stage vent filter consisting of soda

lime, activated carbon and 0.22 micron hydrophobic membrane and have the option of using Automatic sanitization Module.

Specification of the Type I Ultrapure Water Unit

Type I water should be produced from two stage mixed bed ion exchange and activated carbon cartridge, and conductivity sensor, and an option for final filter in dispensing arm.

- Type II water should pass through feed water specific cartridge for removal of trace contaminants.
- Application Specific cartridges to remove ionic and organic contaminants to trace levels
- To prevent deterioration of water quality during periods of non-use, the ultrapure water system should be able to recirculate water to maintain high water quality.
- Water production unit that can be placed either on the bench , under the bench or on the wall with LCD monitor displaying : resistivity, TOC, level of water in reservoir, volume dispensed and consumables replacement and service clearly written on the display alarms, printing etc.
- Dispensing arm: Adjustable height and rotating arm-adjustable to most common lab glassware.

Final Filters to be indicated as options:

VOC filter.....To remove volatile organic compound

EDS polisher.....Water for endocrine disrupters experiments final filter with 0.22micron membrane filter in stack disc configuration.

Feed water specification:

Output from Stage II

UltraPure (Type I) product water specification:

Ultrapure Water (Type 1) Flow Rate (L/min)..... 0.05 to 2 (Programmable flowrate)

Ultrapure Water Resistivity (MΩ•cm at 25°C).....18.2

Microorganisms (cfu/mL).....<0.1

Particulates < 0.22 μm(/ mL).....< 1

Pyrogen Levels (EU/mL)<0.001

RNase Level (ng/mL)< 0.01

DNase Level (pg/μL)< 4

TOC (ppb)< 5

VOC filter.....To remove volatile organic compound

EDS Polisher.....Water for endocrine disrupter experiments

Additional Items:

- a) Compatible with RS-232 Port and an option of trace level elemental analysis attachment facility which can provide the TOC in ppt or Sub ppt level.
- b) Remote access to dashboard and facility to control remotely with the help of software interface may be there.

(i) Warranty: Two (2) years on-site OEM warranty for all components and parts and labor. The warranty period will commence from the date of certification of successful installation of the equipment.

(ii) Maintenance: The vendor should include the price of comprehensive maintenance contract (CMC) of the pre-filtration unit (stage 1) and Type II (stage 2) **for three years beyond the warranty period** in the price bid i.e. warranty for two years followed by CMC for three years.

Comprehensive maintenance contract should include:

- i. Cost of spare parts
- ii. Five regular visits every year for inspection/testing of the entire installation
- iii. Emergency breakdown visits
- iv. Labor required, if any, during the scheduled and un-scheduled maintenance of the system

(iii) Installation and Commissioning: Free of cost at IACS, Kolkata. The vendors are required to give an estimate of the time, space and other facilities required for installation in the technical bid. The vendor shall remain responsible to **demonstrate the performance, production rate and quality of water emanating out of stage 1,2 and 3 after installation.**

(iv) Vendor Eligibility:

- (I) bids must be submitted by OEMs or OEM supported single vendors (one vendor one OEM) only with original authorization certificates from the OEMs. **Vendors should have proven experience in setting up BOTH type I and type II** purification systems in the last three years in India. Proof for such experience (installation certificates/user appreciation note) from credible sources should be included in the technical bid.
- (II) Vendor should be responsible along with OEM in providing support for the machines during the warranty period. Hence the vendor should be the service provider and OEM would provide the parts.
- (III) Vendor should have service engineers stationed at Kolkata and should respond to service calls within 24 hours of receiving a notice from IACS. Additionally, the vendor (service provider) should have an office

in Kolkata. The vendor has to provide contact details of service engineers and its office in Kolkata

Additional Requirements:

(i) **Compliance List:** The vendor must submit a table indicating the compliance of the features of the model of the components being quoted with those given in the indent. In case of non-compliance against a particular item, the vendor should justify that.

(ii) **Training:** Free training on operation, maintenance and troubleshooting of the whole system should be imparted to at least 2 persons for a period of one week at the site of installation.

****Please Note: The decision of the Technical Committee on technical competence and eligibility of any technical bid submitted by any vendor would be final and cannot be contested.**

3. GENERAL INSTRUCTIONS:

(i) **Submitting Tender:** The Tender must contain materials related to these specifications and should not contain materials that can overtly or covertly try to canvass for the vendor. The vendors are allowed to deviate from the specifications given below only when such deviations are demonstrated to be technically superior.

Additional features in the quoted items which are better than those in the indent – may be highlighted. The technical bid should not have any mention of pricing. The commercial bid should have the pricing for each option separately. Prices should be inclusive of all charges (taxes/duties as applicable, shipping charges, delivery at site, installation etc.) with clearly indicated break-ups. Fax, e-mail Tender will not be accepted. Duplicate Bid document must be submitted in Separate closed cover.

(ii) **Post-sale service:** The vendor must submit the names of the service engineers employed by them who are competent to perform the installation and maintenance along with their contact details in India.

(iii) **Tender updates:** Prospective bidders may please refer to our website <http://www.iacs.res.in>, occasionally for any update on the tender which may appear from time to time either in respect of pre-bid meeting or otherwise.

(iv) **Ineligible Tenders:** Incomplete and conditional tenders and tenders received after the due date will be summarily rejected without assigning any reasons thereof. Tender Notice and tender for 'Clean Type I and Type II Laboratory Water System' should clearly be written on the envelope.

(v) In case of any dispute, the decision of the Institute authority shall be final and binding on the bidders.

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