Department of Ecology and Environmental Science
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INVITATION FOR TENDER

Assam University, Silchar, a central university invites sealed Tender from reputed manufacturers/ authorized distributors / authorized firms with sound technical capabilities for supply, installation and commissioning of the following items to be procured under DBT UEXCEL project in the Department of Ecology and Environmental Science, Assam University, Silchar. Detailed technical specifications including make/model/accessories and price including taxes should be quoted against each item separately. All terms and conditions will be as per Assam University, Silchar rules, regulations and decisions.

Serial No.	Particulars of the equipments with minimum specifications
1.	**WATER PURIFICATION SYSTEM** **Stage1: *Pre Filter to counter the Particulate Load*** One Stage Purification 5 Micron or 1 Micron Polypropylene graded density wrapped type depth filter with Low Voltage 20 Watts powered DC Pump with noise levels of Less than 48 Decibels.Iron removal Filter which can take care iron content upto 4 ppm. **Stage2: *Analytical Grade Water System(Type II)*** **Feed water Specifications:** Tap water nature: Potable (as per WHO,EC, EPA and ISO) Conductivity: < 2000 µS/cm @ 25°C Temperature: 2 to 35 °C pH: 4 to 10 Fouling Index: upto 12 Free Chlorine: upto 3 ppm TOC: upto 2000 ppb CO2: < 30 ppm Hardness: upto 300 ppm **Product Water** should meet or exceed Type II water quality corresponding to analytical –grade water as defined by ASTM, CAP, NCCLS and ISO 3696/BS 3997 with the following Product Water Technical Specifications: • Resitivity 10-15 Megh Ohms

- TOC Levels less than 30 ppb
- Flow Rate 3 Ltrs/Hr
- Automatic EDI – With Carbon Beads at cathode and which doesn't required pre softening.
- System should have facility to control remotely with the help of software interface.

The System should have ideally a three stage Purification system:

Stage 1: 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 a easy lock and release mechanism for future maintenance.

The cartridge should have an RFID tag for traceability.

Stage 2: 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 to reduce the wastage of feed water to drain.

Stage 3: 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 Temperature Compensation of Product water temperature of max +/- 0.1 degree irrespective of temperature changes.

The system should 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.
- The screen should change colour to indicate maintenance or poor quality water delivery.

Stage 3: *Specifications for Storage Reservoir*

Blow molded conical bottom Polypropylene reservoir with 30 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.

TECHNICAL SPECIFICATION OF TYPE 1 WATER PURIFICATION SYSTEM

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.

	STAGE 1. • 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 will 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. • Inbuilt quick reference guide. **Dispensing arm:** 1. Adjustable height and rotating arm-adjustable to any glassware. **STAGE 2:** Final Filters 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. **UltraPure (Type I) water:** 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 disrupters experiments ❖ 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. ❖ Inbuilt software provides data management, remote access to dashboard, and long-term archiving capabilities. For Title 21 CFR Part 11 compliance software provides additional features such as e-signature, audit trail, and account management for full system control.Should have facility to control remotely with the help of software interface.
2	**SPECIFICATION FOR MICROWAVE AND EXTRACTION AND DIGESTION SYSTEM** The system must be offered with the following specifications / features 1. Microwave heating system must have a measured minimum power output of 1600 watts. 2. System must have a built in operating system with high resolution fluorescent Display and alphanumeric keypad for entry of operating parameters and sample Identification. System must operate stand alone and must not require the use of any external computer for operation.

	3. System software must automatically adjust the power delivery based upon sample Load and pre-programmed control settings. 4. Vendor must include a certified test report of NRTL Safety Listing (commonly Known as UL® approval) for the exact system as delivered (not a similar model) Per OSHA regulations 29 CFR 1910.3 and 1910.7. Systems not approved will not be considered. Documentation certifying the vendor's current ISO 9001 Registration must also be provided for quality assurance purposes. 5. System must be capable of processing up to 40 high pressure (500 psig) vessels simultaneously. 6. Vessels must be able to be individually loaded and removed from the microwave for ease of handling without requirement to remove the whole turntable. 7. Microwave digestion vessels must be vent able. – 2 sets No of vessels :- 8 Nos Max Temp that vessel should withstand : 260 Deg C Volume of vessel : 55 ml Pressure capacity : 500 PSI 8. System must be equipped with a non-metallic temperature control device that will Measure & control temperature in all vessels with the help of either IR temp sensor and with direct reaction temp sensor. Location of IR should be preferably at bottom. 9. The system must be equipped with an easily detachable and re-attachable solvent detection system for extraction purpose. 10. For safety reasons the system must include a monitoring system that disables the magnetron power when it senses a vessel vent or failure, even if the event does not occur in the control vessel. 11. System must have a device to protect the magnetron from back-reflected energy. To ensure even heating it must be located external to the cavity. Microwave absorbing devices in the cavity itself are not acceptable. 12. System must carry a minimum one year warranty on parts and labor.
3	**TRINOCULAR POLARIZING MICROSCOPE WITH DIGITAL CAMERA AND IMAGING SOFTWARE** ❖ Infinity Optical system with per focal distance of 60mm, with reversed type Quadruple nosepiece, ❖ Circular graduated stage 160mmØ, 1° increment, vernier reading 0.1°, ❖ Fine focusing 0.2mm/rot and Coarse focusing 37.7mm/rot with refocusing mechanism facility, min reading 2 micron ❖ **Transmitted illumination-**Built in 6V/30Watt Halogen illumination, precentered and prefocussed ❖ Natural color blue Filter 45mm for day light illumination ❖ Diascopic **Polarizer** fitted at the bottom of the condenser ❖ Intermediate Tube with **Analyzer** 360° rotatable, min 0.1° ❖ Focusable and Centerable **Bertrand lens for Conoscopic observation** ❖ Trinocular Eyepiece Tube, F.O.V. 20mm, (2way:100:0/0:100 for best illumination in eye and Camera) ❖ Eyepiece 10X (Field No.20) with Diopter Adjustment on both the eyepieces for correction of eyesight ❖ Eyepiece Micrometer Disc 27mm, Crosshairs with X/Y axes scale 10mm/100 div. ❖ Achromat Strain-free condenser, N.A. 0.90, with iris diaphragm

	❖ 4X, N.A. 0.1 W.D. 30mm ❖ 10X, N.A. 0.25 W.D. 7.0mm ❖ 50X, N.A. 0.80, W.D. 1.0 mm ❖ 100X Oil N.A. 1.25, W.D. 0.23 mm ❖ Attachable Mechanical Stage for XY movement ❖ 1/4 Lambda & Tint Plate **REFLECTED illumination** Universal Epi-Illumination Attachment, Precentered Lamp house, Halogen lamp 12V100W LL Neutral density Filters ND4/ND16, Green Interference Filter Polarizer for reflected illumination **DIGITAL COLOR CMOS/CCD CAMERA** Microscope Camera, 5.9Mega Pixel CMOS Sensor size 6.91mmX4.92mm, Pixel size appx 3µmX3µm, Live mode15fps (2880X2048), Binning 2X2,30fps (1440X1024), ISO50, Exp 100µsec-30sec, USB3.0 connector for PC, Recordable pixel 2880X2048/1440X1024, **Quantum Efficiency 67%,** Average photometry mode/ Peak photometry mode, ISO 50 (50-3200), Onetime Auto/Cont Auto/ Manual exposure control, Gain > 60dB, Exp corr: ±1EV, Step: 1/6 EV, Direct Connectivity to Laptop/Computer via USB3, C-mount 0.55x relay lens **IMAGE ANALYSIS SOFTWARE** Documentation software, Measurement acquisition, Time Lapse Imaging AVI Live-stream (Video Recording) capture, Live Image Capture Calibration, measurement, count, length, area, angle, circle and ellipse Large Image (Image stitching) etc.
4	**CENTRIFUGE** 1. Laboratory Centrifuge (max. speed 6000 rpm) with brushless induction motor, frequency drive, LED display of speed and time, imbalance detector, dynamic brake, safety lid lock and rotor identification, supplied without rotors and accessories. 2. Swing out rotor suitable for 6 tubes of 50ml (supplied with glass tubes) 3. 3. Angle rotor suitable for 6 tubes of 50ml (supplied with plastic tubes)
5	**COMPUTER WITH ACCESSORIES** 1. Intel core i5 7th gen/ 4 GB DDR4 RAM / 1 TB HDD/DVD RW / Internal graphics / WLAN / Bluetooth /wireless key- Board & mouse / 21" screen / Antivirus/ Speakers/ 3 yrs warranty 2. LaserJet printer with print, scan, copy, duplex Both side printing facility 3. 1 KVA offline UPS
6	**ONLINE UPS** Rating 5KVA/5000VA DC Volt 192V Input Phase Single Input Voltage 160V – 280V Input Power Factor 0.99

	Input Frequency	45Hz – 55Hz
	Output Phase	Single
	Output Voltage	220/230/240 ±1%
	Full Load Current	Rated at 0.9 p.f.
	Nominal Frequency	50Hz±0.05 Hz
	Output Power Factor	0.9
	Over Load Capacity	125% for 10 minutes & 150% for 1 Minute
	Static Voltage Regulation	±6% for 50% step load change
	Dynamic Voltage Regulation	±1% of Nominal for all variations change
	Waveform	Sinusoidal
	Total Harmonic Distortion	<3%
	Inverter Efficiency	>93% on full load
	Crest Factor	3:1
	Isolation Transformer	Galvanic Isolation Transformer at input
	PROTECTION	Input circuit breaker, charger over voltage
	Charger	Charger over current limit.
	Battery	Battery low cut off/ Current limit, HRC Fuse in battery path, battery over charger trip.
	Inverter	Output over voltage/ Over load trip Current limit, short circuit.
	DISPLAY	
	Indications	Mains ON, UPS ON, UPS Trip, UP OV/UV, Battery Low trip,
	Display	LCD Display for checking Input & Output Parameters
	Metering (Optional)	Output Voltmeter, Output Ammeter
	BATTERY	**Sealed Maintenance Free Battery, VAH required : 8064 for 1hrs backup,**
	ENVIRONMENT	
	Operating temperature Range	0 deg C to 55 deg C
	Storage Temperature Range	-20 deg C to 60 deg C
	Relative Humidity	95% non condensing
	Max. operating altitude without derating	3000 meters
	Acoustic Noise	<55db
	Certification	ISO 9001, ISO 14001, ISO 18001, CE Certification &BIS.
7	**CYLCOTEC SAMPLE MILL**	

- Should be capable of rapid and uniform grinding of a wide variety of plant samples.
- High grinding speed 4 grams per second
- Low noise level: less than 75 dBA.
- No thermal degradation of sample.
- Rotor speed is 10,000 rpm.
- AOAC approved Mill for NIR analysis
- To be able to grind samples upto 15% moisture and /or fat content upto 20%
- Sample size: Upto 10mm
- Particle size: max 0.45 mm with 0.5 mm screen.
- Safety using Microswitch

	NB: The above few mentioned specifications are important as per our requirement. If supplier interested to quote assemble product then details should be mentioned for each and every parts. Build quality should be high standard with reliable products.

TERMS and CONDITIONS:

1. The tenders complete in all respects should be addressed to Dr. Arun Jyoti Nath, Principal Investigator, Department of Ecology and Environmental Science, Assam University, Silchar-788011, India.
2. The tenders for equipments must be submitted in two-bid system (Technical and Financial). The tenders shall be submitted item-wise in two separate sealed covers clearly mentioning on the envelope the details of items for which bid is submitted. The format for the same is encloses in the Annexure. ONLY TECHNICALLY accepted competitive bids will be considered for placing Purchase Order. Last date and time for receipt of Tenders: 16/10/2017 during the office hours up-to 5.00 pm. Date of opening Tenders: 17/10/2017 at 12:00 pm.
3. The technical bids should include all the specification for each part complete with part numbers of main equipments and accessories. The technical details should be supported by original brochure/documents for each component.
4. Tenders by e-mail, Fax, Telex, Telegram will not be accepted. Tenders must be submitted in sealed envelope only clearly indicating "TENDER FOR ITEMS FOR DBT UEXCEL AJN" addressed to undersigned. The university shall not be responsible for any delay in receiving tenders.
5. In case of any modification in specifications / terms and conditions / any clarification to the bid document, it will be hosted in the university website only and the bidders are requested to log to our website from time to time and no separate corrigendum will be issued in this regard.
6. The rate should be exclusive of taxes and applicable tax should be clearly indicated. The rates should be quoted along with supporting documents of specifications, technical features, list of users and authorized dealership documents (if applicable).
7. A certificate from vendors mentioning the place of manufacturing of the all the components of the equipment along with a certificate that the equipment supplied is new without any defect must be supplied to qualify for Technical bid.
8. AFTER SALES SERVICE: Details of availability of after sales support will have to be furnished. The offer shall clearly state full details of the service after sales facility available for the equipment. The details shall include & qualification of service personal stationed at the service centre, response time in case emergency, availability of spares, etc. The offer shall also give the amount and other terms & conditions for annual service contract of the equipments after the expiry of the guarantee/warrantee period.
9. The university is exempted from paying Customs and Excise duty.
10. Proprietary items should be quoted with sole Manufacturer / Dealership certificate. Without dealership or manufacturer's certificate no bids will be accepted.

11. No advance payment will be made. However, if items are of foreign origin, advance payment can only be made in the form of vide LOC/FDD/Wire Transfer. Performance Bank Guarantee must be submitted as per rules covering warranty period.
12. Items of foreign origin should have insurance up to installation site.
13. If any item / equipment delivered in damaged condition, the equipment should be replaced with new one immediately.
14. Items of foreign origin should have insurance up to installation site. In case of equipment of foreign origin, the Indian dealer/agent should submit one undertaking on non-judicial stamp paper, stating that if any equipment delivered in damaged condition they will be liable to replace the same with a new one (applicable only when order is placed).
15. The invitation for bid is open to all OEM (original equipment manufacturer) or their authorized dealers. The principal company may authorize their dealer to participate in the quotation and authorization letter must be attached with the quotation document.
16. Copies of valid Central/State sales tax registration certificate, Income tax clearance certificate, proof of manufacturing unit/dealership & general order suppliers and copies of two major supply orders executed during the preceding two years for Govt. depts. /PSUs and Central Autonomous bodies have to be submitted.
17. The equipment will have to be installed by the supplier /Agent in the Department of lifescience & bioinformatics within 4 weeks, from the receipt of equipment, free of charges.
18. Price quoted for the material/equipment shall be firm and valid for 60 days from the date of opening.
19. Tenders not conforming to the terms and conditions and procedure so outlined or Tender incomplete in any respect is liable to be summarily rejected. The university reserves the right to accept or reject any or all the bids without assigning any reason whatsoever.

20. Special discount/rebate: Special discount/rebate admissible to Educational Institution/Central University may be specifically indicated in the quotation.
21. If there be any dispute, it will be referred to an arbitrator to be appointed by the University for his decision and award. The award or decision of the arbitrator shall be final and binding on both parties.

Those bidders, who accept the above terms and conditions, may submit their tenders in the prescribed format along with all relevant documents/brochures to the undersigned. The tender must also submit a certificate in their official letter head duly signed and sealed starting that all above terms and conditions are acceptable to them.

Sd/- Dr. Arun Jyoti Nath
Principal Investigator, DBT U Excel Project
Department of Ecology and Environmental Science
Assam University, Silchar-788011, India.

Copy to:
1. Copy to Secretary to VC, AUS for VC's kind information
2. The Registrar, AUS
3. The Finance Officer, AUS
4. Internal Audit Officer, AUS
5. Director, Computer Centre, AUS for uploading in the university website (www.aus.ac.in)
6. File for record

PROFORMA FOR SUBMISSION OF FINANCIAL BID (FB)

From
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……....
…….
…….
To,
Dr Arun Jyoti Nath
Principal Investigator, DBT U-Excel Project
Department of Ecology and Environmental Science,
Assam University, Silchar-788011, India.

Having read and understood the Technical bid, I am / We are furnishing the desired information and submitting our Technical Bid duly signed by our Authorized person. Now we hereby submit (in separate sealed cover) our Financial Bid for the purchase of equipments.
Please fill up for the items mentioned separately, whichever is applicable

Sl. No.	**SPECIFICATION ITEMS**	**DETAILS TO BE FILLED BY BIDDER**
1	Name of the equipment with model no. etc	Price in /$/Other currency whichever is applicable (Please mention separately the price of the items, accessories, insurance, etc. under separate heads)
2	Applicable taxes	To be included
3	CIF of FOR Silchar	To be included
4	Special Offer/ Discount	To be included
5	Grand Total	Price in INR/$/Other currency whichever is applicable
6	Terms and condition	As applicable
7	Warranty and after sales service	As applicable
8	Banking Details (For foreign items)	To be included

Date: (Signature of the Offerer)
OFFICE SEAL

(This format shall be sent in a separate sealed cover super scribing - **"FINANCIAL BID FOR EQUIPMENTS _____ for DBT UEXCEL AJN**)