



तेजपुर विश्वविद्यालय / TEZPUR UNIVERSITY

(केंद्रीय विश्वविद्यालय / A Central University)

- कुलाध्यक्ष का सर्वोत्तम विश्वविद्यालय पुरस्कार, 2016 और एनआईआरएफ भारत रैंकिंग 2016: नं. 05
- Visitor's Best University Award, 2016 and NIRF India Ranking 2016: No. 05

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तेजपुर-784028 :: असम / TEZPUR-784028 :: ASSAM

SHORT QUOTATION NOTICE

TU/11-24/PUR/QTN/2016-17/3284-A Date: 17.11.2016.

Sealed quotations are invited from reputed manufacturers/authorized dealers/vendors for supply & installation of following equipment required under the UGC-SAP (DRS-I), Department of Environmental Science, Tezpur University.

1. Item: CHNS Analyser

Specifications:

Fully automated PC controlled CHNS analyser with high sensitivity and capable of multiple operating mode with solid and liquid sample as per specifications given below. Oxygen analysis may be quoted as optional.

S.No.	Description	Specification
1	Operating mode	CHN / CHNS
2	Analytical Range for C, H, N, S & O	C: 0.02 mg or less – 3.5mg or more H: 0.1 mg or less – 1 mg or more N: 0.04 mg or less – 6 mg or more S: 1 mg or less – 2 mg or more
3	Accuracy	< 0.3 % or better with good precision
4	Sample range	0.02 or less to 500 mg or more
5	Analysis Time	Mode Time (minutes) CHN 3 - 8 or less CHNS 5 – 10 or less
6	Detector	A thermal conductivity detector.
7	Gases requirements	All gases required of UHP Grade should be quoted
8	Gas regulators	High quality two stage gas regulators with SS diaphragm for all required gases.
9	Gas purification trap	Gas purification trap for all required gases
10	Sample type	Organic, inorganic, polymer and nanocomposite in solid and liquid form.
11	Auto sampler (Optional)	Capable of holding 30 sample or more may be quoted as optional
12	Software	User friendly Windows based software, Permanent display of all parameters for continuous monitoring of EA operation, Data export to MS-Excel format.
13	Automated Gas Saver	The system should have capability of monitoring leakages of gases and automatic wake up of analyser with latest safety device
14	Ash removal assembly	Provision for Ash and Residual removal of combusted samples without the need for change the combustion tube
15	Analysis kit CHNS	CHNS and CHN kit containing chemicals and tubes running for least 6000 samples or more
16	Optional	Please quote Oxygen mode along with column switching accessories necessary to select mode between CHNS and Oxygen mode. Analysis Time : OXYGEN 2 - 5 or less Oxygen analysis kit for 1000 samples or more
17	Minimum PC requirement	Suitable branded PC having latest configuration with Microsoft Windows based user friendly software and a LaserJet Printer should be supplied
18	Micro balance	One ultra-micro balance interfaceable with Computer, Readability five place or more accuracy, 1 µg or better resolution and calibration certificate. Capacity: 5 gm or more .
19	Spare Parts	All necessary spare parts to run system completely for 5 years should be quoted.
20	Tool kit	Spanners, Allen keys, screwdrivers, Spatula etc. required for maintenance



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21	Power requirement	Single phase, 220 V, 50 Hz
22	Technical Manual / Calibration Certificate	A set of technical manuals are to be supplied with each sensor which shall cover the sensor description, drawing, installation and commissioning guidance. Parts list and their identification, maintenance kit, instruction manual fault-diagnosis guidance also to be provided. Equipment will be supplied with manufacturer's calibration certificate having reference to NIST or equivalent standard.
23	Installation	Free installation with an Application Scientist
24	Training	Basic operator onsite training for at least three days should be given at the time of installation.
25	Availability of consumables & spare parts	Supply of consumables, Spares, accessories for next ten (10) years to be assured
26	Warranty	On site three years standard warranty on complete system after installation and two years optional warranty should be quoted. 10 year warranty on Furnace.
27	Reference Standard	Reference standard required for the instrument , has to be supplied
28	Required Accessories	Suitable online UPS for the complete system with at least half hour backup should be quoted. Any subsystem that is required for the operation of a function requested in the specification must be automatically be included in the scope of supply and must not be added as additional after the order and delivery of the system. System should be completely running with our sample with all the necessary accessories and requirement and should be vendor responsibility. •Supplier should submit their user list in India

2. Item: HPLC

Specifications:

HPLC system that supports different column chemistries to analyze organic compounds, peptides and biological analytes at high speed, high resolution and in a less run time. System should be upgradable with additional accessories without changing any existing accessories up to LCMS/MS.

S.No.	Description	Specification
A	Pump	<ul style="list-style-type: none"> • 2 Nos. of integrated HPLC pumps with dual reciprocating pistons and non circular gear driven, free standing pump should be provided to work in Isocratic, Binary Gradient and semi preparative mode. The pumps should be able to work on fully analytical & semi-preparative mode separately with 100 ul & 225 ul for Analytical & Semi-preparative applications. • Programmable flow range: 0.000 to more than 20.000 ml/min per pump with 0.01 ml/min increment for all kinds of Semi-Preparative application. • Flow rate accuracy of $\pm 0.1\%$ or better • Flow precision of $< 0.075\%$ RSD or better • System Delay Volume should be lesser than 250 ul. • Back pressure range should be more than 5000 psi
B	Injector	<ul style="list-style-type: none"> • Manual Injector. • Injection loops of 20 μl, 50, 100 μl, 200 μl, 1000 μl and 2000 μl and compatible syringes
C	Detector	UV/VIS detector: <ul style="list-style-type: none"> • Wavelength range of 190-800 nm or higher with suitable 10mm analytical flow cell. • Wavelength Accuracy: ± 1.0 nm or better



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		<ul style="list-style-type: none"> • Spectral resolution: <1nm or higher • Wavelength repeatability: ±0.1 nm • Light Source: Deuterium arc lamp ; Lamp should be guaranteed for 2000 hrs of operation without drop in the energy level with appropriate backup from software and hardware. • Lamp temperature control facility should be available for better sensitivity & accuracy. • Lamp Optimization facility should be available with the detector. • Detector should have scanning capability with programmable scan rate. • Detector should store minimum 10 individual scans • Optics: Dual wavelength • Detector should have data traceability for flow cells and lamps. • Semi Preparative flow cell should be provided <p>Fluorescence detector:</p> <ul style="list-style-type: none"> • Wavelength range: 200 to 890 nm • Emission wavelength range: 210 to 900 nm • Wavelength accuracy: +3 nm • Light Source-Xenon Flash or any better source • Measurement range: 0.001 to 100,000.000 emission • Spectral Bandwidth Should be 20nm for Excitation and Emission. • Suitable low volume Analytical Cell to be quoted to prevent dispersion <p>OPTIONAL: An option for hyphening with MS attached to ICP/LC is preferable.</p>
D	Amino Acid Analysis Kit should be quoted	
E	Software	A suitable software to control the HPLC and to analyze the results. Automated LC calculations facility should be available with automatic peak integrations and Gaussian skimming. Free up gradation of software during the period of 5 years.
F	Computer & Printer	A suitable branded Computer for system control & data acquisition. A suitable LaserJet Printer with scanner facility should be quoted.
G	UPS	2KVA online UPS with minimum 30 minutes back-up to be quoted
H	Columns and accessories	<ol style="list-style-type: none"> 1. C18 columns (3 μm, 300 Å, 4.6 x 250mm); pH range: 1-12 2. Preparative C18 columns (5 μm, 300 Å, 10 x 250mm); pH range: 1-12 3. C18 columns (2.6 μm, 300 Å, 4.6 x 150mm); pH range: 1-12 4. C18 columns (3 μm, 300 Å, 2.1 x 150mm) <p>Suitable UPS for the complete system with at least half hour backup should be quoted.</p>
		<ul style="list-style-type: none"> • Demonstration, Commissioning & Detailed training on Instrument & Application has to be provided by the vendors on site. • Price quoted should be F.O.R. Tezpur University. • Warranty: 2 Years. • Supplier should submit their user list in India

3. Item: ION CHROMATOGRAPHY

Specifications:

Gasless Ion Chromatography system with or without suppressor for ppb level analysis of:

- anions - SO₄⁻³, NO₃⁻, PO₄⁻³, Cl⁻, F⁻, Br⁻, I⁻, BrO₃⁻, NO₂, CN⁻, S²⁻, perchlorate, silicate, borate, organic acid ions like formate, acetate, propionate, oxalate, phthalate, azide



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- Cations – Li, Na, K, NH₄⁺, Ca, Mg
- Speciation of metals/metalloids – eg Fe, Cr, As, Se etc

The system must be nonmetallic and contamination free and fully integrated and operated by software. The system must support GLP.

1. The Pump is made of nonmetallic material, serial dual piston type and capable of continuously operating at pressures 0-5000 psi. The flow : 0-10 ml/min, high resolution with flow reproducibility of ±0.1% or better. Pulsation: less than 1% or better.
2. Columns (Non-metallic PEEK) – please quote all the columns needed for the desired analyses. Must include guard columns. (systems for pre-concentration of samples is optional)
3. DETECTORS–system Must be able to be configured with conductivity and/or electrochemical detection and must have options of hyphenating with other detection systems like UV/Vis, MS, ICP-MS
 - (a) Conductivity detector – microprocessor based analysis for digital output
 - Measurement range: 0-15000 µS/cm or better
 - Low noise - <0.1 nS at 1 µS/cm or better
 - Temperature Stability < 0.001 °C or better
 - Cell volume 0.8 or lower
 - (b) Electrochemical Detector– must be quoted with necessary working electrodes, reference electrodes and accessories addressing the analytical needs.
4. SUPPRESSION (with or without)–suitable suppressor for anion analysis with provision for auto regeneration of suppressor. System without suppressor may also be quoted. Suppressor warranty of 5 years.
5. Software: Easy to handle window based software for data acquisition and processing , which takes complete control of the system and be capable to locate all components of the IC system . Must allow in-line calibration (automatic generation of calibration curve). The software must be versatile for various functionalities that are needed .**Software with license** only.
6. Suitable branded PC for instrument operation. Branded PC having latest configuration with Microsoft windows based user friendly software and a laser jet printer should be supplied. The software should have the ability to data access, storage and analysis. Possibility of converting data and export the same for further manipulation.
7. Ultrapure water system for 18.2 MΩ·cm at 25 °C grade water
8. Spares and consumables: Necessary spares and consumables inclusive of solvent filtration kit, columns, suppressors, standards and SRMs for trouble free performance for five years for running the equipment may be quoted for 5 years.
9. Suitable UPS for the complete system with at least half hour backup should be quoted.

Other Terms and Conditions:

- Original printed literature of the machine to be supplied free of cost along with application notes.
- At least two technical persons are to be trained free of cost in all types of instrument related works – operation, servicing and maintenance etc for at least 3 days at the site of installation.
- Warranty of 60 months from the date of satisfactory installation.
- Instrument down time should be attended within 48 hours.
- Supplier must submit their user list in India.

4. Item: Microwave Digestion System

Specifications:

Element	Technical Specification
Power Output	Routine analysis of environmental samples, inorganic, organic samples, plant materials, food quality control and other biological material. Microwave output power is 800 Watt or more with dual magnetrons Suitable UPS for the complete system with at least half hour backup should be quoted.
Microwave cavity	stainless steel cavity with multilayer chemical resistant coating.



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Door Safety	Pressure responsive door. Automatic door locking system Door safety interlocks, Magnetron power cut off in response to over limit pressure release, EPA complaint microwave assisted sample digestion
Exhaust system	System should be built in with high- power anti corrosion axial fan in forced air cooling system
Interior	Reaction Vessels should be made up of PTFE/ TFM material
Pressure	20 bar or more
Temperature	Min temperature that vessel should withstand is 240 degree Celsius or more
Vessel	10 Vessel or more set : 2 sets, Min Volume: 50 ml . reaction vessels should be made u of TFE/TEM
	All other accessories
Standard	System should be compliant to international electrical and emission safety compliance
Temperature control	Direct temperature control real time measure the actual sample temperature in each individual vessels
Pressure control	Direct pressure control real measure in each individual vessels vessels
Warranty	3 Years *Supplier should submit their user list in India

5. Item: Sediment Sampling Equipments Specifications:

I. SUSPENDED SEDIMENT SAMPLER

i. POINT SAMPLING

Single-stage or siphon sampler for suspended sediment measurements

ii. DEPTH INTEGRATING SAMPLING

Hand-line suspended-sediment/water-quality sampler with a flexible suspension line. Sampler should be for stream depths up to 15 ft and in stream velocities ranging from 1.7 to large velocity. Sample volume to be collected about 800 ml.

II. BED SEDIMENT SAMPLER

Grab Sampler:

Stainless steel and the electro polished surfaced.

Lids: 4 and 2 leads

III. AUGER

i. Solid-Stem Augers

Solid-stem auger. Lengths 5ft. Auger-whorl diameters ranging from about 2-4 inch. to as much as 12 in.), Drill head with replaceable bits, spring pins or similar means of connecting the auger sections, an auger holder or "catcher;" to drive connecting pins in or out, and an auger retriever

ii. Hollow-Stem Augers

IV. SEDIMENTATION TRAP

GENERAL TERMS & CONDITIONS:

1. No separate tender paper will be issued from the office; one should only download the specifications/List from the website.
2. **The rates should be preferably quoted in Indian Rupee and FOR Tezpur University, Napaam basis. Charges for clearing and transportation should be incurred by the supplier.**
3. *Quotations should be accompanied by i) An EMD (in the form of Demand Draft/Call Deposit/TDR) of ₹. 5000/- (Rupees Five Thousand) only drawn/pledged in favor of Registrar, Tezpur University, payable at Tezpur. No request for consideration of earlier deposited EMD will be considered. ii) A non refundable*



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application (quotation) fee of ₹.1000.00 (Rupees One Thousand) only have to be paid only by Demand Draft drawn in favour of Registrar, Tezpur University payable at Tezpur.

4. The rates should be exclusive of taxes and applicable tax % should be clearly indicated.
5. Quoted rates should be valid at least for a period of 01 year.
6. The rates should be quoted along with supporting documents of specifications and technical features and list of users.
7. All the quotations must be accompanied with supporting documents and / or literature.
8. Details of availability of after sales support will have to be furnished. After sales support directly from manufacturer and from Assam (Guwahati / Tezpur) will be preferred.
9. The University is exempted from paying Custom and Excise duty.
10. Proprietary items should be quoted with sole Manufacturer/Distributorship certificate.
11. Warranty/Guarantee period should be specifically mentioned in the quotation.
12. 10% Performance Bank Guarantee on the ordered value covering the warranty period is required for items of higher values for foreign equipment as well as Indian equipment.
13. No Advance payment will be made. However, for foreign supplier, advance payment may be considered by FDD/Wire Transfer/LC etc.. In such cases 10% Performance Bank Guarantee should be submitted before issuing FDD/Wire Transfer/LC, covering the warranty period.
14. The University reserves the right to accept or reject any or all the quotations without assigning any reason.
15. Quoted price should be inclusive of essential accessories and should be CIF Tezpur University, Tezpur
16. Applications for release of EMD should be submitted to the Registrar/ Joint Registrar.
17. Apart from the above terms and conditions the University has the right to include any other terms and conditions as and when felt necessary.
18. Authorization/Dealership Certificate of the Company(s) whose product has been quoted has to be provided.
19. **Quotation should be submitted in the DROP BOX placed in the reception of the Administrative Building of the University within 30 days from the issue of the notice. If posted/couriered, should be reached within 30 days from the issue of this notice addressed to "The Joint Registrar, Tezpur University". The Quotation Notice No. and date should be clearly superscribed in the the envelope/packet containing the quotation.**

Sd/- Joint Registrar
Tezpur University