



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/2016-17/2795-A Date: 13.10.2016

Sealed quotations are invited from reputed manufacturers/authorized dealers/vendors for supply & installation of following equipment required under the UGC-SAP, Department of Food Engineering Technology, Tezpur University.

Equipment with Specification:

1. Rheometer

- The Rheometer should have the Capability to perform Rheological Studies with the following features
 - Measuring method: Rotational and Oscillatory
 - Minimum Torque: 200 micro-Nm or better
 - Maximum Torque: 100 milli-Nm or better
 - Torque Resolution: 110 nano-Nm or better.
 - Peltier Temperature Control for Cone / Plate & Parallel Plates in the temperature range of -5 to 200 deg C.
 - Viscosity range: 0.001 Pa S – 600000 Pa S
 - Frequency/ Angular Velocity range: Min. 0.001 rad/s, Max. 600 rad/s
 - Measuring Geometries: Parallel plate, concentric cylindrical and Cone.
 - Safeguard against slurry and highly viscous sample
 - The Rheology software should have basic test templates for all rheological variables
 - **3 years unconditional warranty** should be provided free of cost
 - Installation followed by application training at site
- Indigenous Accessories to be quoted separately:**
- Suitable branded PC with laser printer
 - Suitable online UPS (5 KVA)

2. UV-VIS Spectrophotometer

Optical design Double-beam with sample and reference cuvette positions with Czerny Turner Monochromator

- Spectral Bandwidth: 0.20 – 4.00 nm, 0.1 nm steps, motor-driven
- Detector: Dual Silicon Photomultiplier
- Wavelength range: 190–900 nm
- Wavelength Accuracy: ± 0.02 nm at 656.1 nm and ± 0.04 nm at 486.0 nm
- Wavelength reproducibility : < 0.01 nm
- Photometric accuracy (NIST 930D filters at 1 Abs) : ± 0.003 Abs or better
- Scanning Speed: Min. 3000 nm/min
- Photometric Range: >4 Abs or better
- Photometric Display: ± 9.9999 Abs or better
- Photometric stability (After 2 h warm up @ 500 nm): < 0.0003 Abs/h
- Photometric Noise (at 500 nm, 0 Abs) : ≤ 0.000030 Abs
- Baseline Flatness (200 to 850 nm): ± 0.00022 Abs or better
- Peltier Temperature Control system, Stirring bar, stirring multicell transport + Suitable cells+ cell holders with magnetic stirring
- Cuvette Holder - 10 mm Path length



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- Rectangular UV Quartz cuvette: 2 pairs with PTFE lid.
- Rectangular Standard quartz cuvette: 2 pairs PTFE lid.
- Suitable software for molecular and Chemical analysis
- **3 years unconditional warranty** should be provided free of cost
- Hardware support period minimum five (5) years from date of supply/installation.

Indigenous Accessories to be quoted separately:

- Suitable branded PC with laser printer
- Suitable online UPS (5 KVA)

3. Lyophilizer/ Freeze drier

- Trap cooling temp : -50°C
- Sample/ food temperature : -45 to -50 °C
- Drying Temperature (Max.) : 60 °C
- Dehumidification Amount : 4L/time
- Ultimate vacuum : 6.7×10^{-2} Pa (5×10^{-4} Torr)
- Vacuum pump required throughout : Option 135 L/min
- Reverse flow prevention mechanism
- Suitable vacuum pump of foreign origin same manufacture
- Drying manifold: **Min. 4 port T-Shape Manifold and Min. 4 Shelves for bulk drying with stoppering device.**
- Freezing, sublimation and final drying should occur within the same unit
- Provision to monitor product temperature and end point.
- The unit is to be controlled through user defined program.
- Non-carcinogenic inert cooling fluid/ permissible refrigerant
- **3 years unconditional warranty** should be provided free of cost

Accessories to be quoted separately:

- Provision for monitoring progress of drying based on mass measurement.
- Suitable online UPS (6 KVA)

4. Super Critical Fluid Extraction (SFE) System

SFE system should have following Features.

A) High Pressure CO₂ Pump:

- Flow rate - Up to 50 g/min
- Pressure - Up to 600 bar with $\pm 1\%$ full scale pressure
- Temperature - Ambient to 80°C
- Cooling - Circulating coolant

B) Cooling Heat Exchanger

C) Electrical Heat Exchanger

- Temperature - Up to 150°C

D) High Pressure Extraction Vessel

- Extraction Vessel Volume – 500 ml
- Pressure - 600 bar

E) Automatic Back pressure regulator

- Pressure - Up to 600 bar
- Flow rate - 50 mL/min
- Fluid temperature - Up to 100°C



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- F) High Pressure Fraction Collection Vessel:
 - Volume - 500 ml
 - Design Pressure - 400 bar
 - G) Temperature controller for monitoring and controlling up to six zones independently.
 - H) Particle Collector
 - I) Manual back pressure regulator.
 - J) High pressure Co-Solvent pump
 - Flow rate – 10g/min
 - Operating pressure - 380 bar
 - K) System should be fully control by Software.
 - L) **3 years unconditional warranty** should be provided free of cost
 - M) Installation followed by application training should be provided at site

System should be supplied with latest suitable software and branded PC and laserjet printer. Circulating cooling bath (should be of same manufacturer/reputed brand), two (2) CO₂ cylinder, double stage gas regulator and all necessary tubing and valves should be supplied along with the system.

Indigenous Accessories to be quoted separately:

- Suitable online UPS (6 KVA)

5. Thermo cycler/ PCR

- Dual Block Gradient PCR capable to run two totally independent protocols at the same time.
- Steady slope Gradient Technology ensures ramp rates are identical in both gradient and normal operation.
- Heating and Cooling via Peltier Technology.
- Temperature Control Range : from 4° C to 99° C
- Lid Temperature range : 37° C to 110° C
- Block Temperature Accuracy : ± 0.2° C
- Gradient Temperature Range : 30°C to 99°C
- Lid temperature Range : 37°C to 110°C
- Block Homogeneity : 20°C to 72°C : < + 0.3°C, 95°C : < + 0.4°C
- Temperature control speed approx. 3 °C/s (heating)
- Temperature control speed approx. 2 °C/s (cooling)
- Intuitive Graphic programming with larger display
- **3 years unconditional warranty** should be provided free of cost

Accessories:

- Electrophoresis unit (horizontal) with gel casting tray, power supply and UV-transilluminator

6. Probes and Fixtures for Texture Analyser

Following probes and fixture are needed for Texture Analyser (Model: TA-HD Plus; Make: Stable Microsystems). The probes should be compatible with 5 kg or 50 kg load cell.

- Cylindrical Probe (P/0.5)
- Mini Ottawa-Kramer Shear Cell
- Tensile Grips
- TTC Spreadability Rig

One time full servicing of Texture Analyser and software update should be done free of cost.



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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 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/Gurantee period should be specifically mentioned in the quotation.
12. No Advance payment will be made. However, for foreign supplier, advance payment will be made either by FDD/Wire Transfer/LC. In such cases 10% Performance Bank Guarantee should be submitted before issuing FDD/Wire Transfer/LC, covering the warranty period.
13. The University reserves the right to accept or reject any or all the quotations without assigning any reason.
14. Quoted price should be inclusive of essential accessories and should be CIF Tezpur University, Tezpur
15. Applications for release of EMD should be submitted to the Registrar/ Joint Registrar.
16. Apart from the above terms and conditions the University has the right to include any other terms and conditions as and when felt necessary.
17. Authorization/Dealership Certificate of the Company(s) whose product has been quoted has to be provided.
18. **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 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