NAGALAND UNIVERSITY

(A Central University Estd. By the Act of Parliament No.35 of 1989)

Headquarters : Lumami - 798627

NO. NU/ADM/Gen-84(A)/2013 (Pr-1) - Dated : 14th March, 2019.

TENDER NOTICE

Sealed tenders are invited from Manufactures / Authorized dealers of reputed brands for supply of Scientific equipments and furnishing of Lab room at Nagaland University, SASRD, Medziphema. Interested parties may download the tender documents and Terms and Conditions from the University website: nagalanduniversity.ac.in .

(Dr. Abemo)
Registrar

NO. NU/ADM/Gen-84(A)/2013 (Pr-1) - 7730 Dated : 14th March, 2019.

Copy to:-

1. The P.A to Registrar, for information of the Registrar.
2. The Finance Officer, Nagaland University, Lumami.
3. The Sr. P.S. to Pro VC for information of the Pro Vice Chancellor, SASRD, Medziphema.
4. The System Administrator, NU, Lumami, with a request to upload the TN in the University website.
6. The Editor, Nagaland Post, Dimapur, with a request to publish in the next daily issue (size 5 cm x 8 cm). Bills in triplicate should be submitted for payment. Its an one time publication.
7. The Editor, Arihant Advertising Agency, S.R.C.B. Road, Fancy Bazar, Guwahati – 781001 with a request to publish in the Times of India, North East Edition (size 5 cm x 8 cm). Bills in triplicate should be submitted for payment. Its an one time publication.
8. Office copy.

(Dr. Abemo) 14-03-19
Registrar

NAGALAND UNIVERSITY

(A Central University Estd. By the Act of Parliament No.35 of 1989)

Headquarters : Lumami - 798627

1,000/-

TENDER DOCUMENT FOR SUPPLY OF SCIENTIFIC EQUIPMENT AND FURNISHING OF LAB ROOM AT NAGALAND UNIVERSITY, SASRD, MEDZIPHEMA

Name of the Firm : _____

Address : _____

_____

Phone No : _____

Email ID : _____

Sign & Seal

NAGALAND UNIVERSITY

(A Central University Estd. By the Act of Parliament No.35 of 1989)

Headquarters : Lumami - 798627

Supply of Scientific equipments and furnishing of lab room at Nagaland University, SASRD, Medziphema

Sl. No	Items	Manufacture/ Make	Qnty	Total
1	Atomic Absorption Spectrophotometer		1 no	
2	HPLC System		1 no	
3	Water Purification System		1 no	
4	Portable Generator set 7 KV capacity		1 no	
5	Furnishing of Lab room		1 no	
6	GST rates			

TERMS AND CONDITIONS

1. Tender fees of Rs. 1,000/- (non-refundable) in the form of DD payable to Registrar, Nagaland University, Lumami should be enclosed.
2. Dealership certificate should be enclosed.
3. Authorization certificate from the Manufacturer to participate in the tender should be enclosed.
4. Tax should be clearly indicated.
5. The Rates are **FOR** Nagaland University, SASRD, Medziphema.
6. EMD of 2% of the total quoted price in the form of DD should be deposited in favour of the Registrar, Nagaland University, Lumami.
7. Tender document should be in sealed envelop superscript on the cover "Tender for Supply of Scientific equipments and furnishing of Lab room at Nagaland University, SASRD, Medziphema" and addressed to the Pro Vice-Chancellor, Nagaland University, SASRD, Medziphema on or before 22nd March, 2019 up to 4:00 P.M.. No tenders will be accepted beyond this date and time.
8. The University reserves the right to accept or reject the tenders without assigning any reasons thereof and no representation will be accepted.

TERM OF PAYMENT

100% Payment after the receipt, inspection, acceptance of materials and installation of the materials.

NOTE: Offers not agreeing with the above terms are liable for rejection.

14-03-19

TECHNICAL SPECIFICATION

Sl. No	Particulars of Items
1	**Atomic Absorption Spectrophotometer** **Supply, installation and commissioning of an Atomic Absorption Spectrophotometer system with the following specifications:** **Optical True Double-Beam system with Facility of AUTOMATED changeover from Flame to Graphite Furnace (for future upgradation) to avoid any mechanical movement of the set up while changing from flame to furnace mode (Including Auto sampler of GF)** • **Wavelength range : 185 to 900nm** • Variable band width with automatic switching Nominal 0.1 (available below 400 nm),0.2, 0.5, and 1.0 nm spectral bandwidths • **Monochromator:**Echelle monochromator and prism **or** Grating with 1800lines/mm blazed at 240nm or so with **Reciprocal linear dispersion: 0.8 nm/mm at 200 nm or better.** • Sensitivity: Minimum absorbance of >0.95 Abs for 5ppm Cu (Copper) to be demonstrated & available in literature/document. • **No. Of lamps mount**: Minimum 6 with simultaneous illumination of two (user selected lamps) • **Background**: Quad line (continuum source D_2)BGC for flame as well as Zeeman BGC with Graphite Furnace (for future upgradation) • Burner height: Automatic optimization of burner height • Fuel Flow: Automatic optimization of fuel flow • **Detector:** PMT [Photomultiplier tube] OR Solid State Detector (CMOS) • **Titanium Burner head with 10 cm slot for Air-Acetylene flame and 5 cm for Nitrous Oxide-Acetylene flame** • The burner height is to be automatically optimized • **Flame ignition** –Automatic. • **Nebulizer chamber**- An inert fluoroplastic spray chamber • Automatic gas control system.

- **Data Coded Single Elements for**: Ca, Mg, Mn,Fe,B,Mo,Zn,Pb,Cr,Cd& Cu & all hollow cathode lamps to carry a 5000 mA/hr life period guarantee.

A variety of safety functions should be incorporated as below

Safety measures:

- Software controlled, automatic oxidant changeover
- Software controlled, automatic fuel gas boost on oxidant changeover
- Automatic flame shut down
- Fuel line flashback arrestor
- Fuel line pressure regulator
- Fuel and oxidant line pressure sensors
- Flame present sensor
- Burner type sensor
- Power failure protection
- Empty drain protection
- Spray chamber over pressure protection
- Safe ignition/extinction sequence, auto extinction on power failure, Gas pressure monitoring to prevent flashback

PREREQUISITES should be incorporated as below

- Suitable Branded Desktop Computer (HP/DELL or Equivalent)
- HP Laser Jet Mono (A-4 size) Printer
- Acetylene Filled Cylinder For AAS analysis (UHP Grade) filled with gases, with necessary Tubing & Connectors -2 Nos
- Nitrous Oxide Filled Gas Cylinder for AAS application filled with gases, with necessary Tubing & Connectors. -2 Nos
- Double Stage Gas Regulators for Acetylene Gas Cylinder -1 No
- Double Stage Gas Regulators for Nitrous Oxide with heater -1 No
- Stainless Steel Double Hood with Exhaust Fan including necessary fitting and Ducting Facility -1 set
- Gas Distribution Line for Argon
- 3 KVA UPS with isolation transformer for 30 minutes back up
- Certified Standard solution for AAS (1000 PPM) (each bottle of 125 ml.) for elements corresponding top lamps -1 Set

Sl. No	Particulars of Items
2	**HPLC SYSTEM** **Supply, installation and commissioning of a high performance liquid chromatography (HPLC) system with the following minimum specification (better & higher specification will be given preference) which can be upgraded to LC-MS/MS** The HPLC system should include the following individual stackable self-contained modules with control software 1. Organizer 2. Solvent delivery system 3. PDA detector **4. 4-channel degasser** 5. Column oven 6. Chromatographic software 7. Suitable analytical and its guard column. 8. Computer with Printer, UPS , Sample & solvent filtration unit. **Solvent Delivery System** **Operating principle: Serial dual-piston in series.** • Gradient Formation: Low-pressure gradient proportioning • Recommended flow rate range: 0.001–10 mL/min • Flow rate accuracy: ±0.1% • Flow precision: < 0.05% RSD or < 0.01 min SD, whichever is greater • Pressure range: 620 bar (290–9,000 psi) OR more for the entire flow range. • Pulsation Typically: < 0.2 MPa or < 1% whichever is greater • Solvent Delivery: 1-60 Step/ul (Programmable by Digital Pumping)

- Proportioning accuracy: ±0.5% (of full scale)
- Proportioning/composition precision: <0.15% SD at constant room temperature for stable RT
- Compressibility Compensation: Pulse Dampner free system with SMART FLOWTM
- No. of eluent lines: 4 (Four)
- Gradient delay volume: 690 µL
- Solvent degassing: Built-in, 4-channels Internal Volumn

Column oven

Column Compartment

Key Specifications:

- Compartment Temperature Range: 4-90°C or 18°C below ambient temperature
- Compartment Temperature Accuracy: ±0.5 °C
- Compartment Temperature Stability and Precision: ±0.1 °C
- Compartment Heat-up and Cool-down Time: typically, 12 min
- from 20 °C to 50 °C, typically 15 min from 50 °C to 20 °C
- Switching Valves (optional): one or two switching valves: 2-position 6-port, 2-position 10-port, or 6-position 7-port valves
- Column Capacity: up to 12 columns
- Heating Cooling Type: Forced air circulations and peltier based.
- Large-area Peltier elements and a fan-based forced-air design to provide efficient and homogenous cooling and heating.
- PC Connection: all functions controlled via USB
- I/O Interfaces: two digital inputs, two relay outputs

User Input/Display: LCD indicating system parameters, standby button, three LEDs for status monitoring, four function keys for initial operation and maintenance

Diode Array (PDA) detector

- Key Specifications:
- Detection Type: Reverse optics design with concave holographic grating
- **Data Collection Rate: 100 Hz,**
- **Wavelength Range: 190–800 nm**
- Noise: Wide slit: <+/-8 µAU at 254 nm, Narrow slit: <+/-10 µAU at 254 nm; Response time: 2s (according to ASTM rime constant app. 1 s.) 4 nm bandwidth (water at 1.0 mL/min)
- Drift: <1 mAU/h (typically <0.5 mAU/h) at 254 nm, de-ionized water at 1.0mL/min
- Linearity: <3% RSD and corr. coeff. >0.9995 up to 1.5 AU,

typically <2.5% RSD and corr. coeff. >0.999 up to 1 .8 AU

- Light Source: deuterium lamp, tungsten lamp, temperature control for both lamps
- Wavelength Accuracy: ±1.0 nm, self-calibration with D-alpha line, verification with holmium oxide filter
- **Pixel Resolution: <1 nm number of diodes 1024.**
- Slit Width: Narrow or wide slit
- PC Connection: All functions controllable by USB 2.0; integrated USB hub with three USB 2.0 ports
- GLP Features: Automatic Equipment Qualification (AutoQ), System Wellness Monitoring with Chromeleon software, lamp and cell ID chips
- User Input Display: LCD indicating system parameters, standby button LEDs for status monitoring four function keys for initial operation and maintenance

Analytical flow cell SST, 13 µL volume, 10 mm path length

Software

Chromatographic data system with FDA compliance of CFR21 part 11 should be provided for the fully control of HPLC system.

Controls all the modules such as pump, column oven, DAD & for accessories to be added in future e.g Fluorescence Detector, RI Detector, Autosampler , Fraction collector etc.

Necessary LC software of same make of HPLC in original & all automated LC calculations facility should be available. Free up gradation of software during the warranty period & the **software should support gradient Programming of 1-9 different gradient curves for optimizing gradients**

Column

- Suitable C18 analytical column-250x 4.6mm x 5 micron -01
- Guard column and holder for the above

Rheodyne Manual Injector with position sensor and 20 µl Sample Loop, & syringe

Prerequisites required for the installation of the instrument

Desktop Computer Configuration:

- 18.5" TFT Colour Monitor
- Processor Intel Core i3 6TH Generation Chipset OEM
- Memory 4GB DDR3 SDRAM (Upgradable to 8GB)
- Hard Disk Drive 500 GB SATA HDD; Optical Drive DVD Writer
- Ports I/O - (6) USB 2.0 ports, (1) serial port, (1) PS/2, (1) RJ-45, (1) VGA,

	(1) DVI-D, (1) line in, (1) line out, (1) MIC; Slots (2) full-height PCI slot, (1) full-height PCI-e x1 slots, (1) full-height PCI-e x16 Slot; Serial Port Card • Graphics On-board; Sound On-board; • LAN 1 x 10/100/1000; RS 232 Port; KBD & Mouse HP • **OS Win 7 Professional (License Version) – 64 Bit** • **Note: The latest version supplied at the time of delivery.** • **LaserJet Mono Printer Model 1020 Plus or Equivalent** • **3KVA true online UPS System with 12V, SMF Battery with Battery rack & Intercell connector to provide 30min. backup** **Sample & Solvent filtration unit.**	

Sl. No	Particulars of Items
3	**Water Purification System** Water purification system providing Ultra Pure Water from a potable water feed supply. Recirculation of purified water through wrap-around reservoir – to maintain consistent peak water purity • Front-entry service doors for easy access to consumables• Data collection capabilities through RS232 interface – for compliance with GLP guidelines • Biofilter pre-fitted- Option-Q produces water which is free from biologically active impurities. This makes it suitable for use with applicationswhich require endotoxin free ultra-pure water, bacteria free water, and nuclease free ultra-pure water. The Option-Q15 is designed to deliver 15 litres of water per hour with a dispense flow rate of 1 litre per minute. Output rated for a feedwater supply at15^{o}C and 4 bar pressure. The system comprises pre-treatment, RO module, UV and deionisation. The purified water is re-circulated through the reservoir maintaining high quality water at all times. An installation kit, operator's manual and initial set of consumables are included with the system. System Performance: Inorganics: Up to 18.2MOhm/cm TOC (typical): 1-3 ppb (subject to suitable feedwater) Bacteria: <1CFU/ml (with 0.2mm POU filter)

	pH: effectively neutral *Use of optional Biofilter will provide Endotoxin Specification and improved Bacterial Specification System Feedwater Requirements: Source: Potable water Maximum Fouling Index: 10 Maximum Conductivity: 1400mS-cm Free Chlorine: <0.5ppm Pressure (max): 6 bar (90psi) Pressure (min): 4 bar (60psi) Recirculation of product water throughout the reservoir. Full user microprocessor controls and alarms on water quality. Complete sanitisation. RS232 interface for GLP compliance. Consumables change reminder. Point of use Bio-filter=== One No 50 Ltr Storage tank==== One No Pre filter Cartridge with boost pump=== One no

Particulars of Furnishing Works (Room Size 20X25)
Construction of Lab working table with fittings made with Bhutan Board with Black/Green Granite top *2 Table with 3 ft depth with 1 drawer & 1 shutter *3 table with 2 ft depth with 1 drawer & 1 shutter *Main door of 1st class teak wood with half glass panel and half wooden panel *False ceiling with paint & 6 Nos white ceiling light *Installation of dish washer with sanitary fitting *installation of window blinds *Lab sitting stool – 5 nos
Supply & installation of 1.5 Ton Split AC 5 star with stabilizer
Painting of Lab
Electrical works- Wiring, electrical sockets & fittings for works Tables