

**OFFICE OF THE REGISTRAR :: DIBRUGARH UNIVERSITY  
DIBRUGARH :: ASSAM  
PIN: 786 004**



**BID DOCUMENT**

**FOR**

**NAME OF THE WORK:** Supply, installation and commissioning of Major Equipments (Inductively Coupled Plasma Emission Spectrometer & Fluorescent Spectrophotometer) under FIST Programme – 2020 at Department of Chemistry, Dibrugarh University.

**RE-TENDER No: DU/NIT-2022/File-V/108 dated 12/04/2022**

# CUT-OUT SLIP

**NAME OF THE WORK:** Supply, installation and commissioning of Major Equipments (Inductively Coupled Plasma Emission Spectrometer & Fluorescent Spectrophotometer) at Department of Chemistry, Dibrugarh University.

**RE-TENDER No: DU/NIT-2022/File-V/108 dated 12/04/2022**

**SUBMISSION DUE DATE & TIME** : 22/04/2022 up-to 11.00 A.M.

**FROM:**

NAME:  
ADDRESS

**TO:**

THE REGISTRAR  
DIBRUGARH UNIVERSIITY  
DIBRUGARH, ASSAM

(To be pasted on the outer envelope containing "Technical"& "Commercial" bids



## **OFFICE OF THE REGISTRAR :: DIBRUGARH UNIVERSITY :: DIBRUGARH**

No. DU/ NIT-2022/File-V/108

Date: 12/04/2022

### **Re-Tender Notice**

Sealed Tenders are invited from reputed manufactures/authorized dealers/suppliers for **Supply, installation and commissioning of Major Equipments (Inductively Coupled Plasma Emission Spectrometer & Fluorescent Spectrophotometer) at Department of Chemistry, Dibrugarh University**. Detailed specification of the items, terms & conditions etc are given at Part-B. Last date of submission of Tender with all relevant papers is **22/04/2022 up-to 11:00 A.M.** to be submitted at the Office of the Registrar, Dibrugarh University, Dibrugarh, Assam.

Availability of Bid papers	From 12/04/2022
Last date for receipt of Bid	22/04/2022 upto 11:00 A.M.
Time & Date of opening of Bid	22/04/2022 at 02:30 P.M.
Place of opening of Bid	Office of the Registrar, DU
Cost of Tender Document	1000/- Non refundable
EMD	2.5 % of the Tender value

The tender should be submitted in two separate sealed envelopes *i.e.* **Part - I TECHNICAL BID** and **Part – II FINANCIAL BID**. The technical bid shall be opened on above mentioned date and time and the financial bid of only those bidders who qualify in technical bid shall be opened on the same date or at a later date which shall be intimated to the tenderer whose technical bid are found to be valid. Dibrugarh University reserves all the rights to reject any or all the tenders without assigning any reason thereof.

Sd/-  
**Registrar**  
Dibrugarh University

#### **Copy to:**

1. The Deputy Registrar (F&A) i/c, D.U. for information.
2. The Programmer, D.U., with a request to upload the NIT at D.U. website.
3. Office File

Sd/-  
**Registrar**  
Dibrugarh University

## **PART A - TERMS AND CONDITIONS**

### **GENERAL INFORMATION**

The tender bids duly complete in all respects, along with the necessary documents should be submitted to the Registrar, Dibrugarh University, Assam. The Technical Bids so received, shall be opened on **22/04/2022 at 02:30 P.M.** in the Office of the Registrar, Dibrugarh University in the presence of the representatives of the bidders. The Financial Bids of the Tenderers shall be opened on the same date or at a later date to be intimated to the Tenderers whose Technical Bids are found to be valid. Right to reject any or all Tenders, without assigning any reason thereof is reserved by Dibrugarh University.

### **Terms and Conditions of Supply:**

1. All the manufacturers/ authorized dealers should also give a brief profile about their company and the facilities available with them of the quoted items. Their turnover and important firms/ Government Institutes/ P.S.U.s *etc.* to which they are supplying quoted items, should also be mentioned.
2. The last date and time for the submission of the bids is **22/04/2022 up-to 11:00 A.M.**
3. Suppliers shall submit the following documents along with their quotations:
  - i) VAT/TIN/GST Registration No.
  - ii) Technical specifications offered by the Supplier.
  - iii) Technical compliance table
  - iv) Technical literature regarding the offered products including pictures/sketch/diagrams *etc.*
4. The rates should be mentioned in the **FINANCIAL BID** attached with the Tender Document as **ANNEXURE-II**. Each page of the tender shall be signed in full and stamped with the seal by the supplier. The supplier must clearly state in what capacity he/she is signing the Tender.
5. The supplier shall submit the tender in 02 (two) envelopes. The first envelope (Technical Bid) shall contain all the following documents and be sealed.
  - Filled in Format Technical Specifications/Literature
  - Valid copy of Trade License,
  - PAN Card,
  - Registration certificate of GST,
  - Dealership/Manufacturing/Small Scale Industry (SSI) Certificate (if any)
  - The cost of tender of Rs. 1000/- (Rupees One thousand) only which is non-refundable, along with the Earnest Money of 2.5 % of the Tender value in the form of Demand Draft/Bankers Cheque in favour of the Registrar, Dibrugarh University, Assam payable at Dibrugarh University.
6. Supplier should read carefully all the instructions and terms and conditions, *etc.* before registering rates in prescribed schedule of the tender. Taxes and duties *etc.* should be shown separately.
7. The Technical Documents shall be opened, at **02:30 P.M. on 22/04/2022** or on the next working day if the offices of the University remain closed due to any reason
8. Technical specifications of the instruments/equipments are given in **Annexure** to these papers (Part B).
9. The delivery and installation should be completed within 1 month or as specified from placing of the order. No extension shall be granted to the contractors/suppliers for the period of delivery, under any circumstances.

10. If the supplier fails to deliver the article as per the delivery schedule, the University shall be free to procure the balance/undelivered supply, at the risk and cost of the supplier, from other such suppliers.
11. The goods, articles, materials supplied by the supplier shall be accepted after inspection by an officer authorized by the competent authority. No articles/materials which do not conform to the specifications laid down in the terms and conditions or damaged in transit shall be accepted.
12. The bills of the suppliers shall be paid by the University after all the materials/articles/equipments have been received and installed, inspected as above.
13. Vendor must submit Compliance statement in tabular form comparing each specification of the quoted item with that given in the Tender Document **Part - B**.
14. The warranty period shall be for 3 years for the main instrument and all other accessories.
15. Vendor must provide an undertaking that any service request will be addressed within seven working days. Any delay beyond seven days must be compensated by extending the warranty period with equivalent number of days.
16. The tendering firm must provide proof of documents for executing similar works earlier.
17. In the event of any breach of the terms and conditions of the supply, the University may terminate the contract placed with the supplier and forfeit the security deposit of the supplier.
18. Whether OEM or Authorized Distributor/ Dealer a letter or a valid certificate of authorization of manufacturer shall be enclosed.
19. Copy of product literature and catalogue, testing report, BEE rating, ISO etc.
20. The quantity as mentioned at Part-B (Specifications) may be increased or decreased at the time of placing Order as per requirement.
21. Tenderers are advised to study all technical and commercial aspects, instructions, forms, terms and specifications carefully in the tender document. Failure to furnish all information required in the Tender Document or submission of a bid not substantially responsive to the Tender document in every respect will be at the tenderer's risk and may result in the rejection of the bid.
22. This tender document is not transferable.

**Note:**

(a) Tenderers are advised to read carefully the Terms and Conditions of supply before recording the rates in this Schedule.

(b) No erasures or overwriting shall be allowed, unless they are authenticated under the full signature and the seal of the tenderer.

(c) The University reserves the right to:

- (i) Accept/reject any/all tenders without assigning any reason thereof.
- (ii) Revise the quantities at the time of placing the order without change in the rate quoted by the bidder.
- (iii) Add/modify/relax or waive any of the conditions stipulated in the tender document whenever deemed necessary
- (iv) Award the contract to one or more tenderers for the items covered by the tender.

ITEM No	DESCRIPTION OF GOODS WITH DETAILS OF SPECIFICATIONS	Unit Price	Taxes	Qty.	Total Amount
1					
2					
3					

**Signature of the Tenderer**

**Seal of the Firm**

**Specifications**

**Supply, installation and commissioning of Major Equipments (Inductively Coupled Plasma Emission Spectrometer & Fluorescent Spectrophotometer) at Department of Chemistry, Dibrugarh University.**

**1. SPECIFICATIONS FOR INDUCTIVELY COUPLED PLASMA EMISSION SPECTROMETER**

**A. SYSTEM SPECIFICATIONS**

1. RF Generator must be solid state Free Running with 40/27 MHz frequency with fast impedance matching for various matrices.
2. The power output stability within 750 - 1500 Watts in 1-watt increments. The power efficiency is greater than 81% with < 0.1% variation in output power stability. Power output shall be from 1350 to 1500 Watts both for Radial, Axial and dual view analysis. System should be capable of doing Radial, Axial and dual view mode analysis in single run. System should analyze all the elements in a sample simultaneously.
3. Plasma ignition and switch off shall be totally automatic and PC controlled. Plasma shall be turned off through PC control.
4. Horizontal Torch design for analysis of most difficult, high-matrix samples without dilution
5. Shear gas or similar approach using either Air or Nitrogen for removal of cool Tail Plasma.
6. The Torch Assembly shall be demountable type with Alumina Injector for corrosion resistant to all acids.
7. Nebulizer shall be as cross flow design for corrosion resistance for aqueous applications.
8. All Safety interlocks for water flow, Argon pressure, shear gas flow, Plasma door, Plasma stability, etc. built-in
9. Peristaltic Pump: Integrated four-channel, computer-controlled pump with variable speeds from 0.2 to 7 mL/min in 0.1 mL/min increments or better
10. Chiller for RF Generator shall be supplied alongwith basic system.
11. Standard solution for calibration to be quoted.
12. Hydride generation kit to be quoted.
13. Organic sample analysis kit to be quoted

**B. ARGON FLOW CONTROL**

1. There should be three independent gas flow control for Plasma, Auxiliary, and Nebulizer using system software. Plasma flow gas consumption to operate ICP-OES instrument to be 10L/min or less preferred for aqueous sample.
2. Nebulizer argon gas flow should be variable between 0 and 2.0 L/min in 0.01 L/min increments using a built in Mass Flow Controller.
3. ICP-OES instrument should have capability to view/measure Plasma Radically, Axially and both in single method.

**C. OPTICS**

1. The system shall be high speed, high light through put based on double monochromator / polychromator based Spectrometer with Echelle Grating and Optical Resolution of minimum 0.009 nm or better.
2. The Echelle Grating should be with ruling density should be more than 76 lines/mm.
3. The UV-sensitive, dual backside-illuminated Charge-Coupled Device (CCD) array detector having cooling facility.
4. Wavelength Range - 170 - 900nm
5. The instrument shall get stabilized in less than 10 minutes from cold start and ready for analysis.

#### **D. SOFTWARE**

1. The software should be based on Industry Standard MS- Windows Environment (Windows 10).
2. The software shall be multi-tasking and multi-user and shall have the capability to report, analytical results, spectra on CRT and perform other functions.
3. All standard conditions of various elements shall be built-in and one can select these conditions by entering elements involved.
4. Various modes of analysis like Method, Element, Analyze Format, Text, Data Reprocessing, Report, Spectrum, Results, Analyst, Optimize etc. to be built-in.
5. Measurements shall be made both in radial & axial directions for all the elements.

#### **E: Accessories to be included with the main instrument:**

1. ICP-OES wavelength calibration solution (tuning solution)
2. Multi-element calibration stock solution
3. Torch compartment chimney/ duct/ fume hood.
4. Air compressor/ Vacuum pump.
5. Multisample introduction system
6. 20 sets of Peristaltic Tubing for aqueous samples.
7. 20 sets of Peristaltic Tubing for HF samples.
8. Fume Hood Exhaust system,
9. Suitable 10KVA online UPS with at least 30 min backup
10. Suitable table for placing the instrument should be provided
11. Periodic mix standard / Multi-Element standards containing all elements of the
12. Periodic table, SRM and CRM of soil & sediment samples should be provided for at least 1000 runs.
13. Sufficient number of 0.2  $\mu\text{m}$  membrane syringe filters for filtration of at least 1000 Samples
14. AMC for 5 years (after completion of original warranty).

**F: Training** – to operate the instrument, maintenance and troubleshooting problems at the place of installation should be imparted to the users of the institute.

#### **G: Indigenous Items:**

Branded i5 PC, Printer, Exhaust Hood, UHP grade Argon Gas Cylinder (5 nos) with double stage SS regulators (1 no), Nitrogen gas cylinder (2 nos) with regulator and gas purifications & control panel, 10 KVA online UPS must be quoted.

#### **2. TECHNICAL SPECIFICATION FOR FLUORESCENT SPECTROPHOTOMETER:**

Research spectrofluorometer with ozone free xenon lamp and power supply. Capable of automatic acquisition of corrected emission and excitation spectra, synchronous luminescence spectra, and kinetic studies.

##### **Excitation Sources**

- 150W or higher ozone free Xenon Arc lamp (continuous source)
- Pulsed Xenon lamp for phosphorescence measurement

##### **Spectrometer**

###### *Excitation*

Czerny-Turner monochromator, resolution 0.2 nm or better, accuracy  $\pm 0.5$  nm or better, range 200-900 nm (preferred), with software controlled continuously variable spectral band pass 0 to 20 nm or better.

###### *Emission*

Czerny-Turner monochromator with provision of software controlled double grating turret, resolution 0.2 nm or better, accuracy  $\pm 0.5$  nm or better, range 200-950 nm (preferred) / 900-1600 nm (future upgrade provision), with software controlled continuously variable spectral band pass 0 to 20 nm or better



**Detector**

Photon counting detection technique

Emission detector: Red sensitive PMT, 200 - 950 nm or better.

Silicon photodiode reference detector (to monitor excitation source fluctuations)

**Sample Compartment**

Liquid Sample Holder

**Sensitivity**

Signal-to-Noise ratio for Raman band of water: 10,000:1 FSD or better (Ex: 350nm, Slit: 5nm, Integration time: 1sec)

Water Raman signal: Minimum 500,000 cps

**Lifetime Measurement**

- TCSPC technique capable for lifetime measurement, 30ps to microseconds or better.
- Longer lifetime measurement, lifetime down from 10 μs to seconds
- TCSPC Repetition rate: 100 MHz or better
- Excitation sources: 290nm, 635nm (pulse width: 80ps, repetition rate: 100 MHz)

**Computer hardware and software**

Suitable computer workstation and all interfacing hardware and software (software should have validity up to 10 years and should be easily up-gradable) for instrument control, data control, data acquisition, data storage and data processing for steady-state and time resolved multi-user licence for data analysis software.

**Essential Accessories:**

1. Microplate Reader, 384- well plate
2. Water thermostatted Cell Holder
3. Front face solid sample holder
4. Quartz Cuvette open top with lid, 10mm pathlength, volume 3 ml (3 nos.), 1 mL (2 nos.)

**Warranty: 3 Years comprehensive standard warranty**

- (i) Instrument must be customs cleared by vendor and deliver it to Dibrugarh University. All the necessary cost will be borne by vendor. All the statutory documents will be provided by us.
- (ii) An undertaking by the vendors mentioning that any service request will be addressed within seven working days. Any delay beyond seven days must be compensated by excluding the warranty period with equivalent number of days.

Signature: .....

Date.....

Name :.....

Address :.....

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Mobile No.....