



NATIONAL INSTITUTE OF TECHNOLOGY

ROURKELA-769008 (ODISHA)

An Institute of National Importance under Ministry of Education, GOI

NOTICE INVITING TENDER

Tender Notification No: NITR/PW/FP/2020/216

Dated: 22/12/2020

The National Institute of Technology, Rourkela invites bids from the eligible bidders for procurement of **HPLC (High Performance Liquid Chromatography) equipment with all Accessories** at NIT Rourkela.

Last date of Submission of Bid : **12/01/2021 by 11:00 AM**

Opening date of techno-commercial Bid : **13/01/2021 at 11:00 AM**

For Details: http://nitrkl.ac.in/OldWebsite/Jobs_Tenders/9Equipment/Default.aspx

Contact: Dr. Mohd Khalid Gul,
Department of Food Process Engineering,
Phone No.: +91-7006397480
Email ID: gulmk@nitrkl.ac.in

Bidding through: <https://eprocure.gov.in/eprocure/app>

**Sd/-
REGISTRAR**



**NATIONAL INSTITUTE OF TECHNOLOGY
ROURKELA-769008, ODISHA**

OPEN TENDER NOTICE NO.: NITR/PW/FP/2020/216

Dated: -22/12/2020

Procurement of HPLC (High Performance Liquid Chromatography) equipment with all Accessories at NIT Rourkela.

SL.NO	Description of Goods/Service	Quantity
1.	HPLC (High Performance Liquid Chromatography) equipment with all Accessories As per the specification of HPLC (High Performance Liquid Chromatography)	One

1. Quantity required : **As mentioned above (All information mentioned in technical specification of HPLC (High Performance Liquid Chromatography))**
2. Delivery : Within **90 days** from the date of purchase order
3. **Last Date of submission of Bid : 12/01/2021 by 11:00 AM**
4. **Date of opening of techno-commercial bid : 13/01/2021 at 11:00 AM**
5. The firm should not have been black listed at any time.
6. The submission of following bids by the tenderer should be through <https://eprocure.gov.in/eprocure/app>. Please follow the guidelines as per the portal.

**Procurement of HPLC (High Performance Liquid Chromatography) equipment with all Accessories
(Open Tender Notice No.: NITR/PW/FP/2020/216 Dated: 22/12/2020) Due on 12/01/2021 by 11:00 AM**

7. **Liquidated damage clause** will be charged for any delay in supply of goods.
8. The validity of the tender shall be **90 days** from the date of opening of the techno-commercial bid.
9. Detailed advertisement including all tender documents is also available in our website at http://nitrkl.ac.in/OldWebsite/Jobs_Tenders/9Equipment/Default.aspx .
10. NIT reserves the right to qualify or deny prequalification of any or all applicants without assigning any reasons.

**(REGISTRAR)
NIT, Rourkela
Fax No- 0661-2462022
Ph. No -0661-2462021**

DETAILED TECHNICAL SPECIFICATION

Specifications for HPLC (High Performance Liquid Chromatography) equipment with Accessories:

Sealed tender bids are invited from reputed/authorized vendors/companies for HPLC (High Performance Liquid Chromatography) equipment with following tender specifications.

SPECIFICATION FOR HPLC SYSTEM WITH PHOTO DIODE ARRAY, FLUORESCENCE & REFRACTIVE INDEX DETECTOR

ALL SHOULD BE FULLY SOFTWARE CONTROLLED

1. HPLC Pump (or delivery system) - 2 NO.'s

- 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.
- Programmable flow range/rate: 0.000 to 10.000 ml/min per pump with 0.01 ml/min increment or better.
- The system delay volume should be lesser than 200 µl for high sensitivity. It must be mentioned in the data sheet provided by the vendor.
- The system should be capable of delivering precise volumes of mobile phase with minimum 45 step/µl or better.
- Flow Precision: 0.1% RSD or better.
- Maximum Pressure: 6000 psi throughout entire Flow rate.
- Flow accuracy: + 1% or better
- The system should be capable to withstand the retention time variations of less than 0.1% for highly reproducible peak performance.
- Should have the capability to operate in at least 10 or more various gradient curve mode including Linear, Step, concave, convex. Exponential etc.

2. Manual injector

- The manual injector should be fully integrated with the pump. No separate free-standing panel should be there for the injection. A sketch / drawing should also need to be provided along with the technical details which must show the same.
- Should come with 5, 20, 50 and 200µl sample loops along with 25µl syringe.
- Should have the construction for sample load without interruption of flow.
- Death volume-free syringe guidance must be present along with Built-in injector signal.

3. Photo Diode Array Detector

- Wavelength range: 190-800 nm or higher.
- Wavelength repeatability: ± 0.1 nm or better.
- Wavelength Accuracy: ± 1 nm or better.
- Optical resolution: 1.2 nm or better.
- Data Acquisition: Up to 80 Hz or higher.
- Light Source: Should be a Single Deuterium lamp covering entire range; Lamp should be of 2000 hrs warranty without drop in the energy level with appropriate backup from software and hardware. It should be associated with Lamp optimization software to ensure consistent high sensitivity applications & reproducibility.
- Flow cell Design: Should be a Taper / Tapered Slit in the flow cell to avoid total internal reflection with a Cell Volume lesser than 8.5ul.
- Spectral Resolution/Optical Band pass: 1.2nm per photodiode with a total of 512

photodiodes, digital and optical.

- Digital Resolution: 1.2nm or better.
- Sensitivity Setting Range: 0.0001 – 2.0000 AUFS or better.

4. Fluorescence Detector

- Wavelength Range: 200 to 890 nm
- Emission Wavelength Range: 210 to 900 nm
- Bandwidth: 20 nm
- Wavelength Accuracy: ± 3 nm
- Wavelength Repeatability: ± 0.25 nm
- Sensitivity: S/N, Raman peak of Water ≥ 1000
- Measurement Range: 0.001 to 100,000.000 emission units.
- Data Channels: Up to Four 2D channels or One 3D channels.
- Sampling Rate: Upto 20 points / s.
- Light Source: Xenon Lamp, should have 2000 hrs warranty.
- Flow cell design: Axially Illuminated.
- Flow Cell Volume: 13 μ l
- Flow Cell must be added for doing Mycotoxins/Aflatoxins along with Methods to perform.

5. Refractive Index Detector:

- RI Units: 1.00 to 1.75 with measuring range of 5×10^{-4} to 7.0×10^{-9} RIU.
- Flow cell should be temperature controlled with heat exchangers to have minimum noise of 1.5×10^{-9} RIU with 2s time constant.
- Cell should have minimum volume of 10 microliter or less to be compatible with flow rates upto 10ml/min.
- Flow Cell: Fused Quartz with Flow cell volume: 10 μ l.
- Light source: LED having lifetime warranty.

6. Column Oven

- Should have provision for housing at least three or more columns
- Temperature setting range: Ambient to 150 °C or better.
- Operating temperature: Ambient to 150 °C or better.
- Peltier heating facility should be available for maximum temperature accuracy and quick heating.

7. Original Manufacturer Chromatography Software

- Chromatography software with integrated Oracle & secured database must be present.
- Oracle database must be present for easy tracking and trending: *Instrument Method, Processing Method, Report Method, etc.
- The software must come with System Suitability facility for Method validation, System performance, Reproducibility, Tracking and plotting trends & Processing and reporting.
- The Software also must come with 2 numbers of Base Licenses & 5 numbers of named user's licenses for the creation of separate user names & passwords. The software must control 2 numbers of HPLC systems simultaneously without any further upgradation in future.
- Custom field / Custom calculations must be present.
- Pre-made templates, customizable data reports, online help and answer Wizards must be included to help maximize your lab's productivity.
- Each injection is time and date stamped for easy archiving, retrieval of data with Drag and Drop, look and feel of Windows.
- Report publisher facility for customized reports along with Custom reporting with view filters for easy retrieval.
- Software should offer multiple levels of password, security to ensure the integrity of all

your raw data and results.

- The Software must be associated with Audit Trail.
- The Software must have the capability to operate in at least 10 or more various gradient curve mode including Linear, Step, concave, convex. Exponential etc.
- Security of data, custom reporting with view filters for easy retrieval must be present.

8. Columns & Accessories: (*Applications: Mycotoxins, Aflatoxins, Bleaching agents, Vitamins, Sugar, Antioxidants, Peptides, Phenolics etc*)

- An end-capped C18 HPLC Column for retaining both Polar & Non-Polar Compounds in a reverse Phase environment with dimension 4.6 mm X 250 mm, 5 um - 1 No. (Details must be submitted)
- An end-capped C18 HPLC Column (for Non-Polar Compounds) which can work in extreme pH (1-12) & other operating condition with dimension 4.6 mm X 250 mm, 5 um - 1 No. (Details must be submitted)
- Sugar - Pak column of 6.5 mm X 300 mm for the analysis of Arabinose, Fructose, Galactose, Glucose, Glucose-6-phosphate, Maltose, Mannitol, Raffinose & Stachyose. Detailed Retention times of each compound should also be mentioned in the technical details: 1 No.
- Sample Filtration / Preparation cartridges required for the above-mentioned applications must be supplied along with the instrument & categorically must be mentioned along with available methods.
- Branded Desktop Computer with minimum 16 GB RAM, Original Windows 10, 64 BIT, 500 GB Hard-disk must be supplied.
- UPS 2KVA with 30 mins backup must be supplied.

9. Instrument & Software Qualification Service & Certification & Validation: The instrument must be Qualified along with the Software. Necessary reagents along with Documents must be provided for valid Instrument Qualification, Operational & Performance Qualification of the instrument along with Specification check during the installation. The vendors must quote the Qualification kits with defined list of items along with valid Cat. No./Cas No/Product ID etc.

10. Warranty: 12 months comprehensive on the entire instrument.

11. The Quoted model must have a reference / PO Copies of at least 10 numbers in the eastern India, the detailed list must be submitted along with PO copies / Official Users Certificate.

12. Detailed hardware & application training must be provided by the vendor.

13. The pre-installation guide for the details on electrical power, space and other for all components and essential accessories must be submitted along with the Bid.

Other Requirements

Demonstration of instrument performance.

The supplier should demonstrate the working of the equipment by detecting some compounds of interest at the time of installation of the equipment. The acceptance would be subject to meeting the required criterion.

Manuals

1 set of detailed operation, servicing and other manuals should be provided in both soft form as well as Hard copy. Language should be English only.

Installation

The satisfactory installation to the full specifications of the machine with all accessories at NIT Rourkela campus. Any additional equipment/accessory for the installation of the system should be quoted invariably.
NIT Rourkela will provide only space and electrical connection along with necessary solvents for running the equipment.

Training	Supplier should provide a comprehensive and free training to NIT Rourkela personnel for at least 3 working days.
Warranty	01 Year Standard Warranty (Front line service to be done at customer place & if any cards/modules are to be replaced can be taken to service center & back to bench service charges to be borne by Bidder). The Original End Manufacturer (OEM) should have Calibration and other maintenance support facility located in India.

Guarantee / Warranty and after sales technical support	
The tender must be quoted with one year on-site comprehensive Warranty/Guarantee commencing from the date of complete and satisfactory installation of the equipment against the defect of any manufacturing, workmanship and poor quality of the components. The bidder also must agree and issue a certificate stating that technical query will be responded within 7 working days and the support will be provided within 21 working days from the date of reporting of the technical failure for down time free operation of the instrument.	
Operation and service manual in English (electronic and hard copy) should be provided with all the equipment and components.	
In the technical details, specify clearly about the kind of service/maintenance required for the system. Also mention that whether the service has to be carried out by a company engineer or it can be carried by trained service personnel within India.	
The complete training of all measurement options should be free for NIT Rourkela user staff/students members, onsite.	
Enclose pre-installation guide for the details on electrical power, space and other for all components and essential accessories.	
A list of institutes (with details) in India where the similar equipment & model (with all options in this tender) has been sold or is under operation should be provided. Prospective vendor should clearly mention the type of measurement options (along with the main system) supplied to these institutes.	
The manufacturer has to stand guarantee for the relocation of the system from the present campus of NIT Rourkela to any other place if any in future.	