



Mahatma Gandhi University, Kerala

No. MGU/BIOSCIENCE/1/2018/P&D1

Dated 11/7/18

**NOTICE INVITING TENDER**

(Tender No: MGU/BIOSCIENCE/1/2018/P&D1)

The Registrar, Mahatma Gandhi University, Kottayam invites online bid (technical and financial bid) for **SUPPLY & INSTALLATION OF PREPARATIVE cum ANALYTICAL HIGH PERFORMANCE LIQUID CHROMATOGRAPHY SYSTEM WITH ACCESORIES** of the University from reputed firms.

1	Name of the equipment	<b>SUPPLY &amp; INSTALLATION OF PREPARATIVE cum ANALYTICAL HIGH PERFORMANCE LIQUID CHROMATOGRAPHY SYSTEM WITH ACCESORIES</b>
2	Earnest money deposit (EMD)	<b>53000 /-</b>
3	Tender submission fee	<b>Rs.7950/- + GST</b> <u>Rule as per SPM</u> [ Above `10.00 lakh :- 0.15% of the cost of tender rounded to the nearest multiple of 100, subject to a maximum of ` 25000/- + VAT as applicable, 50% of the cost of the original copy, upper rounded to the nearest multiple of 100 + VAT as applicable ]
4	Period of supply and installation	Within 90 days from the L/C opening date
5	Mode of submission of Bid	Online
6	Tender Documents	Can be downloaded from the website <a href="http://www.etenders.kerala.gov.in">www.etenders.kerala.gov.in</a>
7	Last date and Time of submission of tender by online	<b>26.7.18 2pm</b>
8	Last date and Time of submission of relevant documents by speed post	<b>27.7.18 4 pm</b>
9	Date and time of opening of bid opening	<b>28.7.18 2 pm</b>

General tender documents and tender schedule can be downloaded in A<sub>4</sub> plain size paper free of cost from the website [www.etenders.kerala.gov.in](http://www.etenders.kerala.gov.in). **Duly filled up and signed tender schedule along with relevant documents should also be sent to The Registrar, M.G. University, Kottayam, Kerala Pin-686560**, by speed post so as to reach before the date and time specified. The cover containing the documents should super scribe the name of the tender, number, and last date of submission of tender.

Documents to be submitted along with bid through online/speed post.

Sl.No	Through online	Through speed post
1	Scanned copy of valid dealership certificate.	Copy of valid dealership certificate
2	Scanned copy of duly filled e-payment form	Duly filled e-payment requisition.
3	Scanned copy of other certificates required, if any, for tender acceptance	Copy of other certificates required, if any, for tender acceptance.
4	Scanned Copy of duly filled preliminary Agreement in stamp paper of Rs.200/-	Preliminary Agreement in original
5	BOQ	Not Required

#### **Special Conditions**

1. The quoted Price should be inclusive of all taxes/freight/Installation etc. Customs / Excise Duty Exempted price should also be quoted
2. Scanned copy of brochure of different models quoted should be enclosed
3. **Warranty, AMC conditions**, nearest servicing centers details, user reference and supporting catalogues should be provided (hard and soft copies).
4. If the product has a Valid DGS & D rate contract , it may be quoted
5. The Delivery Schedule, Payment Terms & Warranty/Guarantee etc must be clearly indicated in the technical bid.

The bids will be opened at the date and time specified. Further details can be had from the *Administration B4 Section* on all working days during working hours. The bidders are advised to submit their bid well in advance to avoid any kind of network issues. If relevant documents through speed post are not submitted with in time, the tenders will not be considered.

The undersigned reserves the right to reject any or all the tender without assigning any reason whatsoever.

Sd/-

REGISTRAR

## SPECIFICATIONS

### Preparative cum Analytical High Performance Liquid Chromatography System with Accessories

The Preparative cum Analytical HPLC shall include the following individual stackable self-contained HPLC modules to support for both analytical to Preparative scalability as well as simultaneous analysis at a time. They must be capable of standalone operation and have internal diagnostics to monitor the instrument's performance and record in a logbook. Modules must be connected via fibre optic noise resistant high-speed transmission technology to enhance the reliability and sensitivity of the Preparative cum Analytical HPLC. Warranty for the complete system is 3 years.

1. **Binary Gradient Preparative Solvent Delivery System**
2. **Binary Gradient Analytical Solvent Delivery System**
3. **Manual Injectors**
4. **Photo Diode Array (PDA) Detector**
5. **Dual Wavelength UV-VIS Detector**
6. **Columns**
7. **Fraction Collector**
8. **Chromatography Software**
9. **Accessories**

### **1. Binary Gradient Preparative Solvent Delivery System**

- Two individual solvent delivering units suitable for both preparative and analytical analysis.
- The flow rate should be set between 0.01 to 150 ml/min or better
- Flow rate accuracy setting should be less than  $\pm 1\%$  or better
- Flow rate precision should be less than 0.1% RSD or better
- The maximum discharge pressure should be more than 40MPa or better
- Concentration adjustment : 0 ~ 100%, 0.1% steps
- It should have safety features like leak sensor and pressure limit sensor

### **2. Binary Gradient Analytical Solvent Delivery System**

- Two individual solvent delivering units suitable for analytical analysis.
- The flow rate should be set between 0.001 to 10 ml/min or better
- Flow rate accuracy setting should be less than  $\pm 1\%$  or better
- Flow rate precision should be less than 0.06% RSD or better
- The maximum discharge pressure should be more than 40MPa or better
- Concentration adjustment : 0 ~ 100%, 0.1% steps
- It should have safety features like leak sensor and pressure limit sensor

### **3. Manual Injectors**

- Two manual injectors with necessary set of sample loops (20 $\mu$ l, 100 $\mu$ l, 500 $\mu$ l, 1ml, 5ml) for both preparative and analytical applications should be supplied along with suitable syringes

### **4. Photo Diode Array Detector**

- Light Source –Deuterium (D<sub>2</sub>) and Tungsten (W)
- Wavelength range must be from 190 nm to 800 nm
- It should be with Programmable slit width to get better Sensitivity and Resolution.
- Wavelength accuracy must be  $\pm 1$  nm maximum
- Wavelength reproducibility must be  $\pm 0.1$  nm
- Drift should be less than  $1 \times 10^{-4}$  AU/Hour, Noise level must be  $\pm 0.6 \times 10^{-5}$  AU
- Suitable flow cells for both Preparative and Analytical should be provided

### **5. Dual Wavelength UV-VIS Detector**

- Light Source –Deuterium (D<sub>2</sub>) Lamp
- Wavelength range must be from 190 nm to 700 nm with 8 nm slit width.

- Wavelength accuracy must be  $\pm 1$  nm maximum
- Wavelength reproducibility must be  $\pm 0.1$  nm
- Drift should be less than  $1 \times 10^{-4}$  AU/Hour, Noise level must be  $\pm 0.5 \times 10^{-5}$  AU

## 6. Column

- C18- Preparative 20x250 mm column with 5 micron with guard column.
- C18-Preparative 10x250 mm column with 5 micron with guard column
- C18-Analytical 4.6x250 mm column with 5 micron with guard column
- Additional analytical column (1 No.)
- Additional guard column (4 No.s)

## 7. Fraction Collector

- Flexible approach to manual and automated fraction collection.
- Should have facility to collect small and large scale preparative fractions.
- Necessary Vials and Rack should be offered
- It should have method to collect high purity & high recovery rate

## 8. Chromatography Software

- Chromatography software should cover full one-point digital instrument for both Preparative and Analytical modules control, qualitative and quantitative processing, report creation and self-diagnosis
- It should have seamless control of all the modules including the PDA and UV-VIS Detector
- There should be an on-line help function context sensitive
- The reporting format should be flexible and easy to use in any desired format

## 9. Accessories

- Suitable sonicator and accessories for sample processing
- Sample solvent filtration kit including all accessories for the complete warranty period.
- Water purification system for HPLC grade water with additional cartridges for the complete warranty period.

Water purification System should be capable of producing 18.2 Megaohm resistivity or better with pretreatment cartridge, Reverse Osmosis and mixed bed ion exchange resins and activated carbon in a single pack, mixed bed ion exchange resin and organex for removal of organic contaminants, with feed water acceptance of upto 2000micro Siemens conductivity or better, Fouling Index (SDI) < 12 or better, Total Chlorine < 1 ppm or better. ultrapure water from Tap water directly. Should include all the cartridges for the warranty

period. Other particulars Conductivity : < 0.055uS/cm or better, Bacteria  
: < 1 cfu/mL, Pyrogen : <0.001Eu/mL , RNase : <0.01 ng /mL,  
Flow Rate : 0.5 L /min Particulates > 0.22u : <1 P/mL

- Column holding module to stack both Preparative and Analytical Columns
- Analytical to Preparative switching facility
- Analysis recycling facility.
- Solvent bottles reservoir trays.
- 2 Nos of Suitable Computer should come with Original operating system to support the chromatography software with i3 or higher processor with 4GB RAM on board or higher, 250 GB hard disk or higher, DVD-RW drive, 19 " LED colour monitor, 101 keys key board and mouse, Pre-installed Original Windows 7/Windows 10 [32/64bits only], Branded Laser printer – 2nos
- 5 KVA Branded on-line UPS with 1Hr back up.
- All the necessary pairs for covering the warranty period.