

	<p>INDIAN INSTITUTE OF TECHNOLOGY MADRAS Chennai 600 036</p> <p>Telephone: (044) 2257 4772 E-mail: tssk@iitm.ac.in</p>	
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Prof. Sampathkumar T S
Project Coordinator

Ref: MET/2019/3200/SP
Dated: 30.12.2019

Limited Tender No: MET/2019/3200/SP

Due Date: 20.01.2020, 3:00pm

Pre-Bid meeting: - Not required.

Bid opening meeting on Due Date: 20.01.2020, 4:00pm

Dear Sir/Madam,

On behalf of the Indian Institute of Technology Madras, offers are invited for the supply of “**HPCL SYSTEMS**” conforming to the specifications given in (**Annexure-I**).

Terms and Conditions of Limited Tender

1. **Preparation of Bids:** - The Limited tenders should be submitted under **Two bid system** (i.e.) Technical- and -Financial bid.
2. **Delivery of the tender:** - The tender shall be sent to the below-mentioned addresses either by post or by courier (duly sealed and super scribed on the envelope with the reference No and due date) so as to reach the following address before the due date and time specified in our Schedule:

Prof. Sampathkumar T S,
Department of Metallurgical and Materials Engineering,
IIT Madras
Chennai - 600 036.
3. **Price:** - The price should be quoted in net per unit (after breakup) and must include all packing and delivery charges to **Department of Metallurgical and Materials Engineering.**
 - a. The offer/bid should be exclusive of taxes and duties. The percentage of tax & duties should be clearly indicated separately. IIT Madras is eligible for concessional GST and relevant certificate will be issued.
 - b. In case of import supply, the price should be quoted without custom duty. IIT Madras is exempted from levy of IGST on Imports and eligible for concessional custom duty (not exceeding 5%) and the price should be quoted on EX-WORKS and CIP (stating the Cost, Insurance, Freight separately) and indicating the mode of shipment.
4. **Terms of Delivery:** - The item should be supplied to our Departments as per Purchase Order. In case of import supply, the item should be delivered at the cost of the supplier to our Institution. The Installation/Commissioning should be completed as specified in our important conditions.
5. **Catalogue:** Original catalogue (not any photocopy) of the quoted model duly signed must accompany the quotation in the Technical-cum-financial bid
6. **Late offer:** - The offers received after the due date and time will not be considered

7. **Payment:** - No Advance payment will be made for Indigenous purchase. However, 90% Payment against Delivery and 10% after installation are agreed to wherever the installation is involved. In case of import supplies the payment will be made only through 100% Letter of Credit i.e. (90% payment will be released against shipping documents and 10% after successful installation wherever the installation is being done).
8. **Advance Payment:** - No advance payment is generally admissible. In case of specific percentage of advance payment is required, the Foreign Vendor has to submit a Bank Guarantee equal to the amount of advance payment and it should be routed through the Beneficiary Bank to the end user Bank. Otherwise, the Indian Agent of the foreign vendor has to submit a Bank Guarantee through a Nationalized Bank of India.
9. **On-site Installation:** - The equipment or machinery has to be installed or commissioned by the successful bidder within number of days (as prescribed by PI's) from the date of receipt of the item at site of IIT Madras.
10. **Warranty/Guarantee:** - The offer should clearly specify the warranty or guarantee period for the machinery/equipment.
11. **Validity:** Validity of Quotation not less than 60 days from the due date of tender
12. **Technical Bid Opening:** The technical bid will be opened on **20.01.2020, 4:00pm** at the **Department of Metallurgical and Materials Engineering.**
13. , IIT Madras and the **financial bids** of those tenders who are technically qualified will be opened at a **later date under intimation to them.**
14. **Performance Security:-**The successful bidder should submit Performance Security for an amount of 5% of the value of the contract/supply within 21 days from the issue of work/purchase order. The Performance Security should be furnished in the form of an Account Payee DD / FD Receipt from the commercial bank (or) Bank Guarantee from any nationalized bank in India.
15. **Accept /Reject:** IIT Madras reserves the full right to accept / reject any tender at stage without assigning any reason.
16. **Settlement of Disputes:** Any legal disputes arising out of any breach of contract pertaining to this tender shall be settled in the court of competent jurisdiction located within the city of Chennai in Tamil Nadu.
17. **Risk Purchase Clause:** - In the event of failure of supply of the item/equipment within the stipulated delivery schedule, the purchaser has all the right to purchase the item/equipment from other sources on the total risk of the supplier under risk purchase clause.
18. **Unsolicited offers:** "This notice is being published **for information only** and is not an open invitation to quote in this limited tender. Participation in this tender is by invitation only and is limited to the selected registered suppliers. Unsolicited offers are liable to be ignored. However, suppliers who desire to participate in such tenders in future may apply for registration as per procedure." The Website for Registration of vendors is <http://web.iitm.ac.in/supplier/> and the mail address for queries is "workflow@rt.iitm.ac.in".

Yours sincerely,

Prof. Sampathkumar T S,
Department of Metallurgical and Materials Engineering,
IIT Madras
Chennai - 600 036.

Technical Specifications of HPLC System- 1 No

Supply, Installation and Commissioning of High Performance Liquid Chromatography with UV-VIS Detector and Refractive Index Detector.

Technical specifications and operational features of different components of HPLC System as follows-

1.Solvent delivery system (Pump)

- Number of solvent: 04 or higher
- Flow rate range: 0.001 to 10 mL/min or better
- Flow Accuracy: less than $\pm 1\%$
- Elution type: low pressure quaternary gradient pump to blend at a time 1 to 4 solvents
- Gradient formation: 10 (Inbuilt or user defined)
- Gradient composition precision: $\pm 0.10\%$ or better
- Maximum operating pressure: greater or equal to 6000 psi at 1ml/min
- Online Vacuum Degasser: Flow lines- 05 or more
- Safety Feature: Leak Sensors & safe leak handling.
- Mixer and all other necessary should be quoted
- The pump should have GLP/FDA features compliance like maintenance feedback for continuous tracking of instrument usage with user settable limits and feedback messages.

2.Auto Sampler with Sample Cooler

- Injection procedure: Needle-in-flow path
- Injection volume range: 0.1 to 100 μL as standard
- Linearity: > 0.9999
- Injection accuracy: $\pm 1.0\%$
- Carry over: 0.0025%
- Injection reproducibility: RSD $< 0.20\%$ (5-20 μL)
- No. of Sample plates & vials: minimum 04 plate to hold upto 200 or more samples vials of 1.0/1.5mL which can support the injection from volume of minimum 5 μL
- Sample Capacity: 1.5mL & 216 Nos.
- Number of injections: 1- 99 per samples
- Inbuilt facility of sample auto-dilution and reagent/internal standard addition
- Sample delivery precision: 0.5% RSD or better
- Sample Thermostat: 4°C to 35°C, or more
- Needle Wash: auto cleaning after each injection
- Safety Feature: auto leak sensors to prevent sample
- Minimum sample required in vial: 5 μL residual,
- Standard accessories such as samples holding platform/tray, vials, inserts (if applicable) and cap/septa etc. should be provided.

3.HPLC Column Oven/Compartment

- Column Temp Control: Setting Range 4°C to 90°C
- Heating and Cooling Method: Forced Air Circulation Method
- Column Temp Stability: $\pm 0.8^\circ\text{C}$
- Column holding Capacity: minimum 03 columns (250mm)/06 columns (100mm) to be accommodated with temperature control (heating and cooling) facility and software

4. Dual Wavelength UV-VIS Detector

- Wavelength range: 190-700nm
- Wavelength Accuracy: ± 1 nm
- Spectrum Slit width: 8 nm
- Linearity: upto 2.5AU
- Baseline noise: $\pm 3.0 \times 10^{-6}$ AU or low
- Drift: 1×10^{-3} AU/Hour or less
- Flow cell path length: 10mm,
- Flow cell volume: 12 μ L (Analytical- standard)
- Light source: Deuterium lamp
- Detector should be able to perform Simultaneous Monitoring of any 2 wavelengths
- Other feature: Leak sensor, auto-calibration, and full diagnostic data capturing Software

5. Refractive Index Detector

- Refractive Index Range: 1 to 1.75 RIU
- Noise level: 2.5×10^{-9} RIU max.
- Drift: 1×10^{-7} RIU/h max.
- Response: 0.05 to 10 sec, 10 steps
- Should Support Polarity Switching
- Temperature Control of Flow cell unit Should be between: 30 to 60°C
- Cell Volume :9 μ L Should With Stand Pressure: 2 MPa (cell unit)
- Suitable column for the analysis of sugars, carbohydrates to be included

7. Software

- Feature: Unified GUI (Graphical User Interface) between hardware component and Workstation for smooth chromatographic operation and control feature to facilitate the users can visually confirm the system status and operate the system, regardless of skill/experience level.
- Suitable software to control complete HPLC system in various format viz. MS-Word/Excel file format/Adobe acrobat file format etc. Original & licenced software for opening and editing of exported file formats should also be quoted with the system.
- Premade templates, customizable data reports, online help and answer wizard embedded advanced, structured and relational database, report publisher, versatility for multitasking without multiple software package.
- The software should have required regulatory compliance such as GLP, GMP and 21CFR Part 11 etc.
- Software should be capable to compute the method validation parameters and can produce system suitability report as per current international guidelines such as USP, ICH etc.
- Automated analysis including automatic system suitability test determination with reporting of results
- Feature of power saving should enable the instrument power can be turned off upon shutdown, to save standby electricity, solvent and sample consumption.
- Should provide real-time monitoring, automatic notification of instrument performance and diagnostic instructions for problem resolution
- Facility of auto-validation function, facility to examine solvent delivery stability, wavelength accuracy, absorbance accuracy, gradient accuracy, any possible drift/noise etc.
- Auto system check function should perform instrument usage, system self-diagnostic and a record of system like as the total solvent volume delivered by the delivery pump, the number of autosampler injections, and the number of hours the lamp usage

8.Columns and other Consumable Accessories

- RP-HPLC column- C18, 5 μ m (25cm-01)
- Sample vials-100 (appropriate size & type)
- Other required accessory like auto-sampler racks and reservoir tray and bottles (min. 2.0L capacity) for keeping Mobile Phase bottles should be supplied with system.

INSTALLATION, SERVICE & GENERAL CONDITIONS

- Warranty: 3 years.
- User list: Should provide minimum 5 no's of installation reports of quoted HPLC system from IITs, IISERs, State/Central Universities, CSIR Labs and ICMR Institutions only to be enclosed.
- The specifications claimed above must be available on the website of the manufacturer and official specification sheet of the principal company.
- On-site Training & Demonstration: Operational training & demonstration programme should be provided onsite by the vendor as and when required by the user scientists
- The Bidder should have Service staff and Service Centre preferably in Chennai or Bangalore.
- The offer should clearly mention the Part No and Model Quoted along with the technical specifications. Original brochures and specification sheets should be enclosed in the technical bid of the offer.
- Compliance report to be submitted in a tabulated and point wise manner clearly mentioning the page number of Original catalogue / data sheet.
- Bidder should provide all pre-installation requirements of the system