

 <p>IIT PALAKKAD</p>	<p>भारतीय प्रौद्योगिकी संस्थान पालक्काड Indian Institute of Technology Palakkad अहलिआ एकीकृत कैम्पस, कोज़िहपारा Ahalia Integrated Campus, Kozhipara पालक्काड- 678557 Palakkad – 678 557</p>	<p>दूरभाषसंख्या/ Phone no: 04923 – 226300/590/586 ईमेल/ Email : purchase@iitpkd.ac.in</p>
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Prof. Job Kurian
Registrar i/c

Ref : **Liquid Chromatography Mass Spectroscopy System**
Date : **23.11.2017**

Open Tender No: IITPKD/CIF/MP/070/2017

Due Date: 14.12.2017 @ 3.00 PM

Dear Sir/Madam,

On behalf of the **Indian Institute of Technology, Temporary campus, Palakkad, Quotations are invited for “Liquid Chromatography Mass Spectroscopy System”**. The Specifications are given in the Annexure.

Pre-bid meeting – The pre-bid meeting is scheduled to be held on 28.11.2017 at 11 AM at Conference Room, Academic Block, IIT Palakkad.

Technical bid Opening: The Technical bid will be opened on 26.12.2017 at 11 AM at Conference Room, Academic Block, IIT Palakkad.

Instructions to the Bidder

- (i) **Preparation of Bids:** - The tenders should be submitted **under two-bid system (i.e.) Technical bid and Financial bid in separate envelopes**. The technical bid should consist of all technical details along with commercial terms and conditions. No prices should be included in technical bid. Financial Bid should indicate item – wise prices for the items mentioned in the technical bid. The technical and the financial bids should be put in separate covers and sealed. Both sealed covers should be put into a bigger cover. **Bids must either be spiral bound / stapled together. No loose sheets will be accepted. All pages must be numbered.**
- (ii) **The Quotations duly sealed and superscribed on the envelope with the reference No. and due date, should be addressed to the undersigned so as to reach on or before the due date stipulated above.**
- (iii) **Delivery of the tender:** - The tender shall be sent to the below-mentioned address either by post or by courier so as to reach this office before the due date and time specified in

- the Schedule. The offer/bid can also be dropped in the tender box on or before the due date and time specified in the schedule. **The tender box is kept in the office of the Academic Block, IIT Palakkad, Ahalia Integrated Campus, Kozhipara, Palakkad-678 557.**
- (iv) **Opening of the tender:** - The offer/Bids will be opened by a committee duly constituted for this purpose. The technical bids will be opened first and will be examined by a technical committee which will decide the suitability of the bid as per our specifications and requirements. The bidders will be invited for opening of Technical bids. **The Bidder's representative should carry authorization letter from their company empowering them to participate in the Pre-bid and tender opening meetings.** In respect of opening of financial bid, those bidders who are technically qualified only will be called.
- (v) **Prices:** - The price should be quoted in nett per unit (after breakup) and must include all packing and delivery charges indicated separately for each item. **The price indicated should be CIF/CIP Kochi.** The offer/bid should be exclusive of taxes and duties, which will be paid by the purchaser as applicable. The price should be quoted without custom duty. **The custom duty will be paid at concessional rate against duty exemption certificate.**
- (vi) **Agency Commission:** - Agency commission, if any, will be paid to the Indian agents in Rupees on receipt of the equipment and after satisfactory installation. Agency Commission will not be paid in foreign currency under any circumstances. The details should be explicitly shown in Tender even in the case of 'Nil' commission. The tenderer should indicate the percentage of agency commission to be paid to the Indian agent. **Terms of Delivery:** - The item should be supplied to our Institute as per Purchase order. The installation and commissioning should be completed as specified **by us in the attached schedule.**
- (vii) **Acceptance & Rejection:** IIT Palakkad reserves the full right to accept / reject any tender at **any** stage without assigning any reason.

Yours sincerely,

Registrar, IIT Palakkad

SCHEDULE

Important Conditions:

- 1) The due date for the submission of the tender is **14.12.2017 @ 3.00 PM**
- 2) The offers / bids should be submitted in two-bids systems (i.e.) Technical bid and financial bid. The Technical bid should consist of all technical details / specifications only. The Financial bid should indicate item-wise price for each item and it should contain all Commercial Terms and Conditions including Taxes (separately), transportation, packing & forwarding charges, installation, guarantee, payment terms, pricing terms etc. The Technical bid and financial bid should be put in separate covers **superscribed clearly as "Technical Bid" and "Financial bid"** and sealed. Both the sealed covers should be put in a bigger cover. Open Tender for **"Liquid Chromatography Mass Spectroscopy System"** should be written on the left side of the Outer bigger cover and sealed.
- 3) **EMD: -EMD should be at 2% (two percent) of the tender value quoted by the bidder.** The EMD should be enclosed with the financial bid which will not be opened for Technical evaluation. Enclosing the EMD in the Technical bid will automatically **DISQUALIFY** the tenderer. EMD should be in the form of DD in favour of **"Indian Institute of Technology Palakkad" and payable at Palakkad"**. The tender without EMD would be considered as UNSOLICITED and will be REJECTED. Photo/FAX copies of the Demand Draft/Banker's pay orders will not be accepted. No interest will be paid for the EMD and the EMD will be refunded to the successful bidder on receipt of Performance Security.
- 4) **Performance Security:-** The successful bidder will be asked to submit Performance Security for an amount of 5% of the value of the contract/supply. The Performance Security may be furnished in the form of an Account Payee DD or FD Receipt from the commercial bank or Bank Guarantee from any nationalized bank of India. **Only after submission of Performance Security, Purchase Order/Work Order will be released / L.C will be opened.**
- 5) **Performance Security in the form of Bank Guarantee:-** In case the successful bidder is a foreign company and wishes to submit Performance Security in the form of Bank Guarantee, the Bank Guarantee 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 from a Nationalized Bank of India.
- 6) The Bank Guarantee should remain valid for a period of sixty days beyond the date of completion of all contractual obligations of the supplier including the warranty obligations.

If an Indian agent is involved, the following documents must be enclosed:

- Foreign principal's proforma invoice indicating the commission payable to the Indian Agent and nature of after-sales service to be rendered by the Indian Agent.
 - Copy of the agency agreement with the foreign principal and the precise relationship between them and their mutual interest in the business.
- 7) The offer/bids should be sent only for **a system or equipment** that is available in the market and supplied to a number of customers. A list of customers in India and abroad with details must accompany the quotations. Quotations for a prototype machine will not be accepted.
 - 8) Original catalogue (not any photocopy) of the quoted model duly signed by the principals must accompany the quotation in the Technical bid. No prices should ever be included in the Technical bid.
 - 9) Compliance or Confirmation report with reference to the specifications and other terms & conditions should also be obtained from the principal.
- 10) Validity:** Validity of Quotation not less than 90 days from the due date of tender.
- 11) Delivery Schedule:-** The tenderer should indicate clearly the time required for delivery of the item. In case there is any deviation in the delivery schedule, liquidated damages clause will be enforced or penalty for the delayed supply period will be levied.
- 12) 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.
- 13) Payment:-** No Advance payment will be made for Indigenous purchase. 100% Payment after supply and successful installation and commissioning and certification by the end user. In case of import supplies the payment will be made only through **100% Letter of Credit i.e. (50% payment will be released against shipping documents and 50% after successful installation and meeting acceptance criteria wherever the installation is being done).** **Advance payment may be considered on submission of Bank Guarantee equal to the amount of advance payment.**
- 14) On-site Installation:** - The equipment or machinery has to be installed and commissioned by the successful bidder within 15 to 20 days from the date of receipt of the **item at site of IIT Palakkad.**

- 15) Warranty/Guarantee:** - The offer should clearly specify the warranty or guarantee period for the machinery/equipment. Any extended warranty offered for the same has to be mentioned separately. (For more details please refer our Technical Specifications).
- 16) Late offer:** - The offers received after the due date and time will not be considered. The Institute shall not be responsible for the late receipt of Tender on account of Postal, Courier or any other delay.
- 17) Loading and unloading charges will be borne by the bidder/Supplier.**
- 18) Acceptance and Rejection:** - I.I.T. Palakkad has the right to accept the whole or any part of the Tender or portion of the quantity offered or reject it in full without assigning any reason.
- 19) Do not quote the optional items or additional items unless otherwise mentioned in the Tender documents / Specifications.**
- 20) Disputes and Jurisdiction:** - 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 Palakkad in Kerala.
- 21) All Amendments, time extension, clarifications etc., will be uploaded on the institute website only and will not be published in newspapers. Bidders should regularly visit the above website to keep themselves updated. No extension in the bid due date/ time shall be considered on account of delay in receipt of any document by mail.**

Acknowledgement:- It is hereby acknowledged that the tenderer has gone through all the conditions mentioned above and agrees to abide by them.

**SIGNATURE OF TENDERER
ALONG WITH SEAL OF THE
COMPANY WITH DATE**

Specification for Liquid Chromatography Mass Spectroscopy (LCMS)

Name of the instrument	Liquid Chromatography Mass Spectroscopy system
Mass Range	5 -2000 atomic mass unit (amu)
Sensitivity	Electrospray ionization (ESI) Positive mode: 1pg/uL on column should give S /N greater than 75,000:1 based on 1uL injection volume
Scan speed	<ul style="list-style-type: none"> • Should have the scan speed of 15,000 amu per sec or above
Source Interface	<ul style="list-style-type: none"> • Two different ionization sources: Electrospray ionization source (ESI) and Atmospheric-pressure chemical ionization (APCI) source should be offered • Orthogonal off-axis spray (Electrospray) or any other equally efficient technology capable of avoiding interference from solvents and other extraneous matter should be available. • Capable of handling large batches of samples for long period of time (16 hour or more) without performance degradation • Cleaning of source should be done without venting the system and facility to vacuum interlock • Interface capable of ambient temperature operation and without complex apertures to maintain structural integrity of thermally labile and fragile molecules.
Polarity switching time	<ul style="list-style-type: none"> • +ve / -ve polarity switching time between alternate scans should be less than 20 msec
Vacuum System	<ul style="list-style-type: none"> • Turbo molecular vacuum system should be offered. • Vacuum reading must be digitally monitored and controlled through software to ensure fail-safe operation in the event of power failure. • All accessories (Vacuum Oil, Pirani Gauge and Ion gauge) required for the proper functioning of the vacuum system should be included.
Quadrupoles	<ul style="list-style-type: none"> • High quality mechanical tolerance (molybdenum material or better) and minimum coefficient of thermal expansion for high standard of mass stability in varying lab temperature conditions (upto 25 deg C). • Pre-aligned filters to ensure excellent focusing of ions into Quadrupoles for high sensitivity and better resolution. • Support to minimize the ion losses for better sensitivity in ion optics. • Neutrals and gas load are passively removed for enhanced transmission with the ions actively transferred into the mass analyser and improving sensitivity
Collision Cell	<ul style="list-style-type: none"> • Low dwell time to allow inter channel delays (1 milliseconds or less) without sacrificing sensitivity • Fast data collection of at least 500 multiple reaction monitoring (MRM) data points per sec or better without compromising performance • MS and MS/MS along with matrix monitoring to be performed in single run
Gas Control	Nitrogen and Zero Air for nebulization and drying and argon gas for CID

	<p>– collision induced dissociation are commonly used. Nitrogen and Zero air should be supplied by Nitrogen Generator with built-in air compressor. Argon gas should be supplied by cylinder. All gases should be controlled by the software.</p>
Operating modes	<p>Mass spectrometer should have the following scan options:</p> <ul style="list-style-type: none"> • Full scan • Selected Ion monitoring/ recording (SIM/SIR) • Product ion scan • Precursor ion scan • Neutral loss scan • Multiple Reaction Monitoring (MRM) • MS and MS/MS in a single injection with matrix background • Simultaneous full scan and MRM
Photon Multiplier / Electron Multiplier Detector	<ul style="list-style-type: none"> • An off-axis dynolite photomultiplier/Electron Multiplier detector • Detector must operate in both positive and negative ion modes. • Capable of switching polarity rapidly (< 20 msec) • A high sensitivity, high throughput detector with zero dead time, low noise and high accuracy at low level detections
Nitrogen Generator	<ul style="list-style-type: none"> • Should be supplied with the system along with the inbuilt compressor and appropriate capacity reservoir
Computer and Operating system	<ul style="list-style-type: none"> • Core i7 Processor, 4 GB (DDR3) Ram, 2GB Cache memory, 500 GB Hard disk, DVD Writer, 24" full HD LED/HDMI wide screen display, Window 7 Operating System with Laserjet Printer
Electrical power and the other details	<ul style="list-style-type: none"> • 230V/50 Hz
Software and workstation	<ul style="list-style-type: none"> • Software should acquire and process the data simultaneously • Workstation should be able to control LC, MS, Detector and auto sampler. • Should be able to regulate the gas pressure and flow during the data acquisition and append to the relevant data file. • Software should have automated calibration and quantitative optimization. • Automated MS to MS/MS switching during a single run with user selectable criteria • Technology for the system optimization and status monitoring, performing the following parameters: <ul style="list-style-type: none"> (i) System parameters checks and alerts (ii) Automated mass calibration (iii) Automated Sample tuning (iv) MS and MS/MS in a single run

Pump	<ul style="list-style-type: none"> • Binary pump, two individual high-performance solvent delivery units, capable of operation 18000 psi or better • Online membrane Vacuum Degasser – 3 channels • Operating flow range: 0.010-2.0ml/min with 1µl increments • Programmable plunger seal wash should be provided • Flow Accuracy: ± 1.0 % or better • Flow precision: 0.075 % RSD or better
Auto Sampler with Sample Cooler	<ul style="list-style-type: none"> • Number of samples: 100 Nos. of 1.5mL vials or equivalent • Injection volume range: 0.1-50µl in 0.1 µL increments • Sample delivery precision: < 0.3% RSD or better • Sample temperature: 4 – 40 deg C
UV Vis Detector	<ul style="list-style-type: none"> • The wavelength range should be 190 nm - 700 nm with D2 Lamp as light source. • Wavelength accuracy should be ±1 nm. • The Drift must be 2×10^{-4} AU/Hour. • The Noise Level must be 1.2×10^{-5} AU. • Dual-wavelength detection • A Semi micro flow cell (2.5 µL volume, 5 mm cell path length, 12 MPa pressure max) with temperature control should be supplied as standard. • The flow cells must be temperature controlled from ambient + 5°C to 50°C.
Column Oven & Column	<ul style="list-style-type: none"> • Column oven to accommodate at least three columns of 25 cm length each. • C18 Column 150mm x 2.1mm, 1.9micron column with guard column should be offered
Flow Divert Valve	<ul style="list-style-type: none"> • Flow Divert Valve to be installed after the detector for automatic switching the flow between the MS and drain should be included.
Accessories	<ul style="list-style-type: none"> • All required standards for Mass calibration and tuning, HPLC calibration should be provided
Warranty	<ul style="list-style-type: none"> • Warranty for 3 years for the complete LC-MS/MS System and Nitrogen Generator should be offered.
Annual Maintenance contract (AMC)	<ul style="list-style-type: none"> • 3 years AMC after the warranty period should be offered
Acceptance Criteria	<ul style="list-style-type: none"> • Installation should be done with necessary traceable standards along with necessary performance kit standard solutions. • Demonstration and Training on system should be done by the supplier at installation site. • Basic training for a period of at least two weeks after installation of the equipment to technical personnel should be provided. An extended

	<p>training after 2-3 months should be offered to clarify any hardware, software and application queries.</p> <ul style="list-style-type: none"> • At least one periodical training per year should be conducted during the warranty period at installation site in order to clarify on interpretation of data, method development and application support. • Satisfactory inspection of receipt of equipment with all the accessories as per the Purchase order • Demonstration of the functionality of the equipment such as measurement of a sample with well-defined error value/deviation from expected value, demonstration of feature in software, data collection, data analysis, calibration procedure, maintenance, changing an accessory, using an accessory etc. • Standard calibration solution, a mixture of highly purified ionizable molecules specifically designed for positive and negative mode calibration will be used to check the accuracy of mass and signal to noise ratio • Mixture of two ionizable molecules with different hydrophobicity will be used to check the separation of the molecules by LC and then detection of mass by MS • A standard ionizable peptide will be used to check the fragmentation at MS/MS, the data should show the sequence of amino acids. • The experimental results have to be matched (deviation up to ± 0.5 amu) with the theoretical values to accept the instrument
Service back-up	<ul style="list-style-type: none"> • Technical support should be available at short notice at the places where LC-MS/MS will be installed • Troubleshooting training (instrumentation/application) as and when required free of cost.
Service manuals	<ul style="list-style-type: none"> • Complete operation and service manuals should be provided

Who can participate in the bid?

Only those bidders fulfilling the following criteria should respond to the tender.

1. The bidder should be either an Original Equipment Manufacturer (OEM) of Liquid Chromatography Mass Spectroscopy system or should be an authorized representative (provide documentary proof) of an OEM.
2. The bidder should be a company registered under the Companies Act, 1956/2013 OR a Limited Liability Partnership /a registered partnership firm OR a sole-proprietorship entity. Appropriate Registration incorporation certificate must be submitted.
3. The bidder must have a registered office in Karnataka/Tamil Nadu/Telangana/Andhra Pradesh/Maharashtra or Kerala. Certificate of registration for the offices to be provided.
4. The bidder must also have a service center in Karnataka/Tamil Nadu/ Telangana/Andhra Pradesh or Kerala. Certificate of registration for the centers to be provided. Details about scope of service activities provided by the service centres must be provided. The contact details of the service engineers must be provided.
5. The bidder must be in existence in the business of Liquid Chromatography Mass Spectroscopy system or allied fields for a minimum period of 5 previous financial years (before or since 01 April 2012). Documentary evidences of experience must be provided.
6. The bidder should have implemented orders of Liquid Chromatography Mass Spectroscopy system worth exceeding INR 50 lakhs during previous three financial years (01 April 2014 – 31 March 2017). Copies of the most recent purchase orders and certificates of successful implementation must be included. Copies of financial statements or evidence of turnover must be furnished.
7. The bidder should have documentary evidence of having supplied at least 1 No. of Liquid Chromatography Mass Spectroscopy system to a Centrally Funded Technical Institution (e.g., IIT, NIT, IISc, IISER, etc.) in the recent past. The bidder must provide a certificate of satisfactory performance of the supplied equipment from the institute to which they have recently supplied. Contact details of the faculty-in-charge of the installed setup must also be provided.
8. The bidder must provide detailed specification of each equipment/item. Model numbers, data sheets and brochures must be included for each quoted equipment/accessories/item. Specifications corresponding to quoted model number must be available publicly via OEM's website for scrutiny. If not, bid can be disqualified on technical grounds.
- 9. Compliance sheet for the technical specification and OEM Brochure have to be attached along with the Technical bid. Vendor has to fill the compliance sheet and mention page number or reference number in OEM brochure. Unfilled / partially filled sheets lead to disqualification.**
- 10. Service and warranty for a minimum period of three years for the equipment must be provided. AMC for additional three years must be quoted separately.**