

 INDIAN INSTITUTE OF TECHNOLOGY <b>PALAKKAD</b>	<b>Indian Institute of Technology Palakkad</b> भारतीय प्रौद्योगिकी संस्थान पालक्काड <b><u>STORES &amp; PURCHASE SECTION</u></b> <b>Email: <a href="mailto:purchase@iitpkd.ac.in">purchase@iitpkd.ac.in</a></b> Telephone: 04923-226586/87 GSTIN: 32AAAAI9910J1ZR
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**Tender No.: GTE/2022-23/PRJ\_077**  
**Date of Publication: 24-11-2022**  
**Date/Time of Closing: 15-12-2022, 1500 hours**

Indian Institute of Technology Palakkad Invites **Global** Tender under Two-bid system for the:

**SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF  
ION CHROMATOGRAPHY**

Conforming to the specifications as in BoQ Technical.

Tender Documents may be downloaded from the e-Wizard Portal <https://mhrd.euniwizarde.com/>. Aspiring Bidders who have not enrolled / registered in e-Wizard should enroll / register before participating through the website <https://mhrd.euniwizarde.com/>. Bidders are advised to go through instructions provided at “**Procedure for Submission of E-tender**”. [Special Instructions to the Contractors/Bidders for the e-submission of the bids online through this e-Wizard Portal”].

Bidders can access tender documents on the website. For searching in the site, kindly go to Live Tenders option, Click “Advance Search” and select Department as ‘IIT Palakkad’. Thereafter, Click on “Search” button to view all IIT Palakkad tenders. Select the appropriate tender and fill them with all relevant information and submit the completed tender document online on the website <https://mhrd.euniwizarde.com/> as per the timeline below.

**No manual bids will be accepted. All tender documents including Techno-Commercial, Technical and Financial bids should be submitted in the e-Wizard portal.**

S. No.	Events	Date and Time
<b>1</b>	<b>Publication of the Tender Document</b>	<b>24-11-2022</b>
<b>3</b>	<b>Last Date/Time for submission of ONLINE Bids</b>	<b>15-12-2022, 1500 hours</b>
<b>4</b>	<b>Opening of Technical Bids</b>	<b>15-12-2022, 1515 hours</b>

**TERMS AND CONDITIONS**

<b>1</b>	<b>GENERAL</b>	<p>(a) The responsibility of submission of the bids on or before the last date shall rest with the tenderer. The institute will hold no responsibility for the non-receipt of the bids or the bids received after the date/time specified. Any bid received by IITPKD after the bid submission deadline prescribed by IITPKD, shall be rejected and returned unopened to the Bidder.</p> <p>(b) Canvassing or offer of an advantage or any other inducement by any person with a view to influencing acceptance of a bid is an offence under the Laws of India. Such action will result in the rejection of bid, in addition to other punitive measures.</p> <p>(c) Each bidder shall submit only one bid, either by himself or as a partner in a joint venture or as a member of the consortium. If a bidder or if any of the partners in a joint venture or any one of the members of the consortium participate in more than one bid, the bids (of both the individual and the partnership/consortium/joint venture) are liable to be rejected.</p> <p>(d) The bidder shall bear all costs associated with the preparation and submission of his bid and IITPKD shall in no case be responsible or liable for those costs, regardless of the conduct or outcome of the tender process.</p> <p>(e) <b>IITPKD will respond to any request for clarification or modification of the Tender Document that are received up to TWO DAYS prior to the deadline for submission of bids prescribed by IITPKD. For this purpose, the prospective bidder(s) requiring clarification in the Tender Document shall notify IITPKD through the ONLINE Portal ONLY. Any such clarification, together with all the details on which the clarification had been sought, will be published in the ONLINE Portal ONLY. Deviations, if any, observed by the Institute in the submitted bids, from the Terms and Conditions of the Tender Document will not be accepted by the Institute.</b></p> <p>(f) Except for any such clarification by the Institute, which is expressly stated to be an addendum to the tender document issued by the Registrar, IIT Palakkad, no written or oral communication, presentation or explanation by any other employee of any of the Sections/Departments of the Institute, shall be taken to bind or fetter the Institute.</p> <p>(g) The bidder is expected to examine all instructions, forms, terms and conditions in the Tender Document. In the event of discovery of any missing pages, the bidder shall inform the same to the Section/Department concerned. Failure to furnish the information required by the Tender Document or submission of a tender not substantially responsive to the Tender Document in every respect will be at the bidder's risk and may result in rejection of the bid.</p> <p>(h) The bidder shall not make or cause to be made any alteration, erasure or obliteration to the text of the Tender Document.</p> <p>(i) The Supplier shall not, without the prior written consent of the IITPKD, assign to any third party, the Contract or any part thereof.</p>
<b>2</b>	<b>COMPOSITION OF THE TENDER DOCUMENT</b>	<p>(a) The Tender Document comprises of:</p> <ul style="list-style-type: none"><li>1. Instruction to the bidders including terms and conditions</li><li>1. Technical Specifications (Annexure-I)</li><li>2. Undertaking by the Bidder (Annexure-II)</li><li>3. Fall Clause Notice Certificate (Annexure-III)</li><li>4. Annexure regarding Blacklisting/Debarment (Annexure-IV)</li><li>5. Self Declaration – MII Order (Annexure-V)</li></ul>

3	DOCUMENTS COMPRISING THE BID	<p>(a) <b>The Technical, Techno-commercial and Commercial Bids (Cover One) and Commercial Bid (Cover Two) shall be submitted ONLINE through the e-Wizard Portal.</b></p> <p>(b) Bids submitted in any mode other than ONLINE will be rejected outright.</p> <p>(c) Documents establishing the conformity of the terms and conditions of the Tender Document shall be provided along with the bid. The offer/bids should be sent only for a system or 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.</p> <p>(d) 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.</p> <p>(e) Compliance or Confirmation report with reference to the specifications and other terms and conditions should also be obtained from the principal.</p> <p>(f) Information related to the agency/bidder such as photocopies of the Registration/PAN/GST/TIN shall be furnished.</p> <p>(g) The technical bid should consist of all technical details along with commercial terms and conditions. <b>No prices should be included in the technical bid. Mentioning of Prices in the Technical Bid shall lead to <u>DISQUALIFICATION.</u></b></p> <p>(h) Bidders who are bidding for this tender shall,</p> <ol style="list-style-type: none"> <li>1) Should have implemented <b>at least THREE orders of ION CHROMATOGRAPHY during the previous THREE financial years (2019-20, 2020-21, 2021-22)</b> from Centrally Funded Technical Institutes (IITs, NITs, IISc, IISER), DRDO, ISRO, CSIR labs or Government Firms in India. Copies of the most recent purchase orders and user certificates of successful implementation must be included. Copies of financial statements or evidence of turnover must be furnished.</li> <li>2) Have an <b>Average Annual Turnover of Rs. 85,00,000/- (RUPEES EIGHTY FIVE LAKHS ONLY) during the last THREE financial years (2019-20, 2020-21, 2021-22).</b> The bidder shall enclose the audited statements of the indicated financial years, which should have been certified by a Chartered Accountant or a Competent Authority.</li> <li>3) Digitally signed Tender Document should be submitted in Cover One.</li> </ol>
4	EARNEST MONEY DEPOSIT (EMD)	<p>(a) The bidder shall furnish EMD of <b>Rs. 84,000/- (Rupees Eighty Four Thousand Only)</b> through online payment gateway in the E-Wizard.</p> <p>(b) <b>Bids not accompanied by EMD shall be DISQUALIFIED.</b></p>
5	PERFORMANCE SECURITY	<p>(a) The performance security shall be submitted within <b>FIFTEEN DAYS</b> of receipt of the material by the IITPKD. The successful bidder shall furnish the Performance Security equal to <b>3%</b> of the order / contract value (excluding the value of annual maintenance charges). The Performance Security shall be valid all along the warranty period and shall extend up to <b>SIXTY DAYS</b> after the date of completion of warranty period. It shall be ensured by the successful bidder that the validity of the Performance Security submitted is extended depending on the date of commencement of the Warranty.</p> <p>(b) <b>The performance security shall be a bank guarantee (in the format as provided) issued by the Indian Scheduled bank acceptable to the IITPKD or a Demand Draft favoring, INDIAN INSTITUTE OF TECHNOLOGY PALAKKAD payable at PALAKKAD.</b></p> <p>(c) The performance security shall automatically become null and void once all the obligations of the Supplier under the Contract have been fulfilled, including, but not limited to, any obligations during the Warranty Period</p>

		<p>and any extensions to the period. The performance security shall be returned to the Supplier not later than fifteen (15) days after its expiration.</p> <p>(d) Failure of the successful Bidder to comply with the requirements shall constitute enough grounds for the annulment of the award and forfeiture of the EMD, in which event the IITPKD may make the award to the next lowest evaluated bid submitted by a qualified Bidder or call for new bids.</p>
6	<b>BID PRICES AND CURRENCY</b>	<p>(a) Prices must be quoted separately for each equipment/item identified.</p> <p>(b) <b>Price quoted for equipment/items shall include all the costs associated with packing, local transportation from the point of clearance to IITPKD, insurance, loading, unloading and associated delivery charges. The delivery shall be on DOOR DELIVERY basis to the institute including its installation, commissioning, integration and validation. It is the sole responsibility of the supplier to ensure that the equipment is delivered on DDP mode to IIT Palakkad. An undertaking to this effect as in Annexure-II.</b></p> <p>(c) Prices quoted by the bidder shall be fixed during the validity of the bid.</p> <p>(d) <b>Prices of the equipment/items shall be quoted in Indian Rupees (INR) / Foreign Currency.</b></p>
7	<b>LETTER OF CREDIT</b>	<p>(a) Upon the successful Bidder's furnishing of the copy of the Purchase Order duly signed on each page and the Performance Security, for the equipment ordered in foreign currency, IITPKD will open a letter of credit (LC) in a convenient Nationalized Bank in India. For opening of LC necessary information shall be provided by the supplier or its authorized agents.</p> <p>(b) 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 shall submit a Bank Guarantee from a Nationalized Bank of India. The following documents shall be submitted in case of an Indian agent submitting the Performance Security on behalf of his principal:</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• Copy of the agency agreement with the foreign principal and the precise relationship between them and their mutual interest in the business.</li> </ul> <p>(c) For imported equipment, a Letter of Credit (LC) shall be opened for 100% CIP price on receipt of the acknowledgment of the purchase order. However, 80% of the LC amount only shall be released on proof of the shipment of the consignment with necessary documents to be provided in detail at the time of placing of the purchase order. Balance 20% of the LC amount shall be released upon the receipt of a performance security of 5% of the total value of the purchase order and installation, commissioning, integration, validation and installation report/certification jointly given by the end user and the supplier.</p> <p><b>Any costs associated with the amendments made in the LC as per the request made by the Supplier s should be borne by the supplier.</b></p> <p><b>Any fluctuation in rates / rate conversions arising due to the amendment requests made by the supplier shall be on the supplier and not on the institute.</b></p>
8	<b>PERIOD OF VALIDITY OF BIDS</b>	<p>a) Bids shall remain valid for a period of <b>180 DAYS</b> after the date of the deadline for submission of bids prescribed by IITPKD.</p> <p>b) If the deadline is extended due to unforeseen circumstances, the bid validity shall be deemed to have extended accordingly.</p>

9	<b>TIME FOR SUPPLY, INSTALLATION, COMMISSIONING AND VALIDATION OF THE EQUIPMENTS/ITEMS</b>	<p>(a) The Supplier shall supply the equipment/items within the period specified in the tender document i.e. within <b>THREE MONTHS</b> of signing the purchase order or within the period mutually agreed between IITPKD and supplier. All the equipment and accessories should be delivered at <b>IIT Palakkad (Nila Campus), Kanjikode- Malampuzha Road, Pudukkottai West, Kanjikode, Kerala 678623.</b></p> <p>(b) The Supplier shall thereafter proceed with the installation, commissioning, integration and validation and demonstrate operational acceptance of the equipment/items within the period specified. The equipment/items shall be installed and commissioned by the successful bidder within 20 to 25 days from the date of its receipt.</p> <p>(c) 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.</p> <p>(d) In the event of failure of supply of the item/equipment/items within the stipulated delivery schedule, IITPKD has all the right to purchase the item/equipment/items from other sources on the total risk of the Supplier under the risk purchase clause.</p>
10	<b>PRODUCT UPGRADES</b>	The Supplier shall continue to support and maintain the version/model of the Equipment supplied by upgrading the software and the hardware as and when amendments are carried out in the existing version or the product is upgraded. Whereas upgrades to the software shall be supplied free of cost, the Supplier may charge for upgrade in hardware provided it is of major nature. An upgraded higher version of the instrument and software related with the instrument shall be supplied.
11	<b>PENALTIES</b>	If the Supplier fails to complete any of the activities in accordance with the time specified for it, or any extension of time granted by IITPKD, Liquidated Damages Clause shall be invoked.
12	<b>UP-TIME GUARANTEE/ DOWNTIME PENALTY CLAUSE</b>	<p>(a) The Supplier should provide up-time guarantee of 95% [24 (hours) X 7 (days) X 365 (days)] basis during the warranty period.</p> <p>(b) The Supplier should provide up-time guarantee of 95% (24 hours/day basis) both during warranty. If downtime exceeds the 5% limit, extension of the warranty period will be twice the excess down time period.</p>
13	<b>LIQUIDATED DAMAGES</b>	If a firm accepts an order and fails to execute the order, in full or part, as per the terms and conditions stipulated therein, it will be open to the Institute to recover liquidated damages from the firm at the rate of 1% of the value of the undelivered goods per month or part thereof, subject to a maximum of 5% of the value of the undelivered goods. It will also be open to the Institute alternatively, to arrange procurement of the required stores from any source, at the risk and expense of the firm, accepted and failed to execute the order according to stipulations agreed upon. This will also entail the removal of the defaulters' name from the approved/registered list of Suppliers.
14	<b>EFFECT OF FORCE MAJEURE</b>	<p>(a) If the Supplier is prevented, hindered, or delayed from or in performing any of its obligations under the Contract by an event of Force Majeure, then it shall notify the IITPKD in writing of the occurrence of such event and the circumstances of the event of Force Majeure within <b>FIFTEEN DAYS</b> after the occurrence of such event.</p> <p>(b) The Supplier, when affected by the event of Force Majeure shall use reasonable efforts to mitigate the effect of the event of Force Majeure upon its performance of the Contract and to fulfill its obligations under the Contract, but without prejudice to IITPKD's right to terminate the Contract.</p> <p>(c) No delay or non-performance by the Supplier caused by the occurrence of any event of Force Majeure shall:</p> <ol style="list-style-type: none"> <li>i. Constitute a default or breach of the Contract;</li> </ol>

		<p>ii. Give rise to any claim for damages or additional cost or expense occasioned by the delay or non-performance.</p> <p>(d) If the performance of the Contract is substantially prevented, hindered, or delayed for a single period of more than <b>THIRTY DAYS</b> or an aggregate period of more than <b>SIXTY DAYS</b> on account of one or more events of Force Majeure, the IITPKD shall have the right to terminate the Contract by giving a notice to the Supplier.</p>
15	<b>EXTENSION OF TIME LIMITS FOR SUPPLY AND MAKING OPERATIONAL, THE EQUIPMENT</b>	<p>(a) The time limit for supply, installation &amp; commissioning, integration &amp; validation shall be extended if the supply is delayed or impeded in the performance of any of its obligations under the Contract by reason of any of the following:</p> <p>i. Any occurrence of Force Majeure;</p> <p>ii. Any other matter specifically mentioned in the Contract;</p> <p>(b) By such period as shall be fair and reasonable in all the circumstances and as shall fairly reflect the delay or impediment sustained by the Supplier.</p>
16	<b>GOVERNING LAW AND SETTLEMENT OF DISPUTES</b>	<p>(a) The Contract shall be governed by and interpreted in accordance with the laws of India.</p> <p>(b) Any dispute or claim arising out of/relating to this Contract of the breach, termination or the invalidity thereof, shall be settled by the Hon'ble Courts of Justice at Palakkad.</p> <p>(c) The page number should be marked in all pages serially (including all supporting documents enclosed with the tender document) and the declaration for the same shall be submitted by the bidder as in <b>Annexure-II</b>.</p> <p>(d) IITPKD reserves the right to accept or reject any or all the tenders in part or whole or may cancel the tender at its sole discretion without assigning any reason whatsoever. No further correspondence in this regard will be entertained.</p>

**AWARD OF CONTRACT**

<b>1</b>	<b>AWARD CRITERIA</b>	<ol style="list-style-type: none"><li>1. IITPKD will award the Contract to the Bidder whose bid has been determined to be substantially responsive and <b>as per the Order No. P-45021/2/2017-PP(BE-II) dated 16-09-2020 from Department for Promotion of Industry and Internal Trade (Public Procurement Section), Ministry of Commerce and Industry, Govt. of India.</b></li><li>2. The Institute reserves the right to buy different items/quantities from different bidders considering price of individual/group of equipment/items or any other factors as decided by the Committee.</li></ol>
<b>2</b>	<b>AWARD OF PURCHASE ORDER</b>	<ol style="list-style-type: none"><li>1. Prior to the expiration of the period of bid validity, IITPKD will issue the Letter of Intent / Purchase Order to the successful Bidder in writing.</li><li>2. Any amendment(s) in the Purchase Order will be permitted within <b>SEVEN DAYS</b> of its issuance. No amendments will be permitted beyond this period.</li><li>3. The Purchase Order will constitute the foundation of the Contract.</li></ol>
<b>3</b>	<b>CONTRACT AGREEMENT</b>	<ol style="list-style-type: none"><li>1. Within <b>SEVEN DAYS</b> of receipt of the Purchase Order, the successful Bidder shall sign and date its copy on each page and return it to the Purchaser.</li><li>2. Copy of Purchase Order duly signed and dated by the successful Bidder on each page shall constitute the Contract Agreement.</li></ol>
<b>4</b>	<b>CONTRACT DOCUMENTS / AMENDMENT TO CONTRACT</b>	<ol style="list-style-type: none"><li>1. All documents forming part of the Contract (and all parts of these documents) are intended to be correlative, complementary and mutually explanatory. The Contract shall be read as a whole.</li><li>2. The order of precedence of the Contract documents shall be as follows:<ol style="list-style-type: none"><li>(i) Contract Agreement/Purchase Order</li><li>(ii) All Forms/Annexures</li><li>(iii) equipment/items and their requirement</li><li>(iv) Supplier's Bid</li><li>(v) Tender Document</li></ol></li><li>3. No amendment or other variation of the Contract shall be effective unless it is in writing, is dated, expressly refers to the Contract and is signed by a duly authorized representative of each party to the Contract.</li></ol>

**REGISTRAR**

Name of the Item :	<b>Ion Chromatography (IC)</b>
Quantity:	01
Warranty Period:	03(Three-year)

**TECHNICAL SPECIFICATIONS**

Sl. No.	Items	IIT PKD required Specification
1	<b>General</b>	<p>A PC based Ion Chromatography (IC) with multiple flexibility of detection of complex sample matrix. Ion Chromatography System should analyze various Anions like <math>\text{Cl}^-</math>, <math>\text{F}^-</math>, <math>\text{Br}^-</math>, <math>\text{PO}_4^{3-}</math>, <math>\text{SO}_4^{2-}</math>, <math>\text{BrO}_3^-</math>, Nitrate, Nitrite, Oxalate, Glycolate, Benzoate, Molybdate, Organic acids, perchlorate, oxyhalides, organic anions like formate, acetate, Arsenic/Arsenate, selenium, chromium/chromate etc., Cations like <math>\text{Na}^+</math>, <math>\text{K}^+</math>, <math>\text{Li}^+</math>, <math>\text{NH}_4^+</math>, <math>\text{Ca}^{2+}</math>, <math>\text{Mg}^{2+}</math>, nickel, cobalt, zinc, iron, manganese, barium, strontium, Amines like propylamine, alkanolamines and cyclohexylamine etc., by conductivity detection. Transition metals with iron and chromium speciation should be determined by using UV-Vis detector and post column reagent assembly. Should have an Amperometry detector to do Sulfide, cyanide, and carbohydrate analysis.</p> <ul style="list-style-type: none"> <li>• The Ion Chromatography system should have inert, nonmetallic PEEK (polyether ether ketone) fluidic components throughout the system to ensure solvent compatibility and metal contamination-free chromatography.</li> <li>• The System should have capability of future upgradation of online eluent generator for reagent free Ion Chromatography</li> </ul>
2	<b>Solvent Delivery Pump</b>	<ul style="list-style-type: none"> <li>• Type : Dual-piston (in series), microprocessor controlled, constant 10 mm primary stroke length, variable speed Isokinetic with Eluent Precompression. The pump must be of a serial dual-piston design to reduce maintenance cost and ensure precision.</li> <li>• Construction : Chemically inert, metal-free PEEK pump heads and flow path; compatible with aqueous eluents from pH 0–14 and reversed-phase solvents such as methanol and acetonitrile</li> <li>• Pressure Range : 0–41 MPa (0–6000 psi)</li> <li>• Flow Rate Range : 0.001–10 mL/min with alternative pump heads</li> <li>• Flow Rate Precision : <math>&lt; \pm 0.1\%</math></li> <li>• Flow Rate Accuracy : <math>&lt; \pm 0.1\%</math></li> <li>• Pressure Ripple : <math>&lt; 1\%</math> at 1.0 mL/min, typical</li> <li>• Vacuum Degasser : Integrated (Should have inbuilt)</li> <li>• Piston Seal Wash : automatic operation(which can be continuously operated when connected to rinse solution supply)</li> <li>• Eluent On/Off Valve : Electrically actuated, standard</li> <li>• Leak Sensor : Optical, standard</li> </ul>
3	<b>Column Compartment</b>	<ul style="list-style-type: none"> <li>• Injection Valves : Up to two high-pressure valves, either 6 or 10-port</li> <li>• Columns Supported : Up to two 1-9 mm i.d., maximum length 250 mm analytical column with 50 mm guard column</li> </ul>



4	<b>Conductivity detector</b>	<p>One number of conductivity detector for analysis of anions and cations</p> <ul style="list-style-type: none"> <li>● Electronics Type : Microprocessor Controlled digital signal processing, autoranging</li> <li>● Cell temperature stability/accuracy : &lt;math&gt; &lt; 0.001^{\circ} \text{C}&lt;/math&gt;</li> <li>● Cell Drive : 8 kHz square wave</li> <li>● Linearity : 1%</li> <li>● Digital Signal Range : 0-15,000 <math>\mu\text{S}/\text{cm}</math></li> <li>● Analog Signal Range : 0-15,000 <math>\mu\text{S}/\text{cm}</math></li> <li>● Noise, Wet : <math>\leq 0.2 \text{ nS}</math> at 23 <math>\mu\text{S}/\text{cm}</math> background <math>\leq 0.1 \text{ nS}</math> at 1 <math>\mu\text{S}/\text{cm}</math> background</li> <li>● Filter Rise times : 0 to 10 s, programmable</li> <li>● Sample Rate : 1 to 100 Hz, user settable or automatic</li> <li>● Flow Cell Maximum Pressure : 10 MPa (1500 psi)</li> <li>● Flow Cell volume : 0.7 <math>\mu\text{L}</math></li> <li>● Cell Electrodes : Passivated 316 stainless steel, Compatible with MSA</li> <li>● Cell Body : Chemically inert polymeric material</li> <li>● Heat Exchanger : Inert, tortuous-path for low longitudinal dispersion</li> <li>● Resolution : 0.00238 nS/cm.</li> </ul>
5	<b>Electrochemical Detector</b>	<p>The electrochemical detector must be capable of operating in an integrated amperometry, pulsed amperometry, or DC Amperometry mode.</p> <ul style="list-style-type: none"> <li>● Electronics Type : Microprocessor controlled digital signal processing</li> <li>● Electronic Noise, Wet : IPAD (Au electrode) &lt;math&gt; &lt; 50 \text{ pC}&lt;/math&gt; at 10 mM KOH, DC Amperometry (GC) &lt;math&gt; &lt; 10 \text{ pA}&lt;/math&gt;</li> <li>● Potential Range : -2.0 to 2.0 V in 0.001 V increments</li> <li>● Signal range (Digital and Analog) : Integrated Amperometry: 50 pC to 200 <math>\mu\text{C}</math> DC Amperometry: 5 pA to 74 <math>\mu\text{A}</math></li> <li>● Filter : 0–10 s response time, user settable</li> <li>● Control Mode : Local or remote control using relay closures or TTL, or control using software via DC module</li> <li>● Cell Body : Titanium body. Compatible with 2–7 mm i.d. Columns</li> <li>● Working Electrodes : 1)Conventional : gold, glassy carbon, platinum, and silver 2)Disposable: gold, platinum, carbon, and silver</li> <li>● Reference Electrode : pH-Ag/AgCl combination, one piece design PdH, one piece design</li> <li>● Autoranging : Yes</li> <li>● Analog Output : User selectable full scale of 10, 100, or 1000 mV</li> <li>● Cell Volume at Working Electrode: &lt;math&gt; &lt; 0.2 \mu\text{L}&lt;/math&gt;</li> <li>● Maximum Cell Operating Pressure : 0.7 MPa(100 psi)</li> </ul>
6	<b>UV- Vis Detector and Post column Reagent assembly for Transition metals along with iron and chromium speciation</b>	<ul style="list-style-type: none"> <li>● Light Source : Deuterium lamp for UV range; tungsten lamp for visible range</li> <li>● Wavelength Range : 190 to 900 nm in 1 nm increments or higher</li> <li>● Cell : PEEK Cell</li> <li>● Path Length : 10 mm (Standard and Capillary), 7 mm (Micro)</li> <li>● Cell Volume : 11 <math>\mu\text{L}</math> (Standard) 2.5 <math>\mu\text{L}</math> (Micro) 0.18 <math>\mu\text{L}</math> (Capillary)</li> <li>● Heat Exchanger Volume : 8.8 <math>\mu\text{L}</math> Maximum</li> <li>● Flow Cell Maximum Operating Pressure : 725 psi (5 MPa)</li> </ul>

		<ul style="list-style-type: none"> <li>● Wavelength Accuracy : <math>\pm 1</math> nm</li> <li>● Linearity : <math>&gt; 2</math> AU</li> <li>● Bandwidth : 6 nm at 254 nm</li> <li>● Noise : Typically - <math>&lt; \pm 2.5 \times \mu\text{AU}</math> at 254 nm</li> <li>● Drift : <math>&lt; 0.1</math> m <math>\mu\text{AU/h}</math> at 254 nm</li> <li>● Data Collection rate up to 100 Hz Digital Output : Full dynamic autoranging digital absorbance signal output to software</li> <li>● Control Modes : Software remote control</li> <li>● Post Column Derivatization Unit to convert UV-Absorbance of TM &amp; Lanthanide</li> <li>● The suitable and separate pneumatic base or peristaltic base post column reagent assembly in 4mm ID with accessories like Knitted Reaction Coil; Mixing Tee must be the part of the system</li> </ul>
7	<b>Suppressor</b>	<p>Suppression is a technique that utilizes a device to reduce the background conductivity, enhance the conductance of the analyte of interest, and remove the counter ion resulting in increased signal. It must have the ability to perform gradients or isocratic runs without changing the device.</p> <ul style="list-style-type: none"> <li>● The suppressors must be operated continuously for anion as well as Cation applications.</li> <li>● Suppressor regeneration must be carried out in Electrolytic Suppression Recycle Mode or chemical suppression mode.</li> <li>● All the separate accessories should be available for operation of cation as well as anion suppressors.</li> </ul>
8	<b>Columns</b>	<ul style="list-style-type: none"> <li>● Non Metallic PEEK based Anion and Cation with high capacity Ion exchange column and its guard column compatible and suitable of 0-14 pH , for anions (01 no.), cations (01 no.) , columns for sulfide and Cyanide estimations and for Transition metal with iron speciation's analysis should be quoted.</li> <li>● The columns should have electronic chip( RFID or chip) to store data and history of column use</li> <li>● It should also be possible to record the number of injections and the working hours</li> </ul>
9	<b>Autosampler</b>	<ul style="list-style-type: none"> <li>● Autosampler for injection and analysis of anions &amp; cations from same samples &amp;/OR different samples without wasting time for changeover and equilibration for simultaneous or sequential analysis.</li> <li>● Must utilize non-metallic fluid path components to reduce potential sources of contamination, eliminate corrosion, and be acid and base resistant.</li> <li>● Autosampler should have capacity of 50 Poly vials of 5ml or 0.5 ml vial size, With caps of 20 um filter pore size, with simultaneous injection facility.</li> <li>● Minimum 250 vials with cap should be provided with the autosampler</li> <li>● Injection Volume : 0.1–5.0 mL in 0.1 mL increments</li> <li>● Dispense Speed : 0.1–5.0 mL/min in 0.1 mL/min increments</li> <li>● Concentrator : Delivers sample against backpressure of up to 690 kPa (100 psi). Recommended flow rates are 0.4 mL/min (0.5 mL vials) or 1 mL/min (5 mL vials)</li> </ul>

10	<b>IC Software</b>	<ul style="list-style-type: none"> <li>● The Ion Chromatography system should be supplied with the latest version of the software and operating system with the features of software supported data system, data acquisition, processing &amp; reporting. The software should be fully Windows based, user friendly, and able to provide fully automatic control of the process of analyzing samples.</li> <li>● The software must be able to provide full automatic control of the process of analyzing samples.</li> <li>● The software must be able to automate integration updates without time consuming batch reprocessing of changes to an integration in a data set.</li> <li>● The software must have the ability to customize the report format and content.</li> <li>● The instrument software must include self-diagnostic functions.</li> <li>● Software should be licensed and Windows based software.</li> <li>● The Software must allow real time integration monitoring in order for an instrument operator to monitor real time progress.</li> <li>● The vendor must provide commitment to upgrade their software to the next version without cost, in scenarios including but not limited to upgradation of OS system, better compliant work-flow through server based data handling etc.</li> <li>● The software should be a strictly validated/original licensed copy software with specific part number mentioned in the offer (no pirated version of the software will be allowed and if found the offer will be strictly rejected.)</li> </ul>
11	<b>PC &amp; Printer</b>	<ol style="list-style-type: none"> <li>1. Desktop Computer (Leading Brands)- Intel Core i5 10500, Processor Base Frequency (GHz) 3.1, DDR4 8 GB, Type of Drives used to populate the Internal Bays: HDD,SSD, Capacity of each HDD (GB): 1000 @7200 rpm, Capacity of each SSD (GB): 512, Number of Internal Bays populated with SSD: 1, NVIDIA 2GB or Higher graphics, Cabinet Form Factor: Tower (13.1 to 26 Liters), Monitor Resolution (PIXELS): IPS, 1920x1080, LED Backlit Monitor Size (INCHES) 24 or 23.8, Standard keyboard and mouse, Windows 11 Professional, Microsoft Office Genuine, On Site OEM Warranty (Year): 3</li> <li>2. Multifunction Machines (Laser mono printer) - Laser, Multifunction Machine, Mono, A4, RAM size (MB) 512, Minimum Speed per Minute as per ISO/IEC 24734 in A4 Size-Mono - 27, Scanning Feature Availability - Yes, Duplexing Feature Availability - Yes, Type of Network Interface - Ethernet 10/100, Wi-Fi Type Wifi 802.11 b/g/n &amp; Wi Fi Direct, Feeder Capacity (Number) 35, Number of Main Paper Tray, Bypass Facility Yes, Duty Cycle (No of Prints/ month) 15000, On Site OEM Warranty (Year): 3</li> </ol>
12	<b>Accessories and Standards</b>	<p><b>Accessories and Standards to be included with the package</b></p> <ul style="list-style-type: none"> <li>● Standards for all Cation, Anions and organic components listed in this specification.</li> <li>● All necessary accessories required for instrument installation, regular operations and maintenance, like, tubing, nuts, ferrules, filters, connector, operational and maintenance kits, Reagent bottles, Mobile phase bottles, ultra-pure gases and gas cylinders (if any), etc.</li> <li>● All spares and consumables for three years of operations should be</li> </ul>

		<p>quoted.</p> <ul style="list-style-type: none"> <li>● Application notes for anions and cations analysis in environmental, biological, and industrial samples.</li> <li>● Sample Filtration System/Assembly with suitable filter papers (500 Nos.)</li> <li>● Threonine OQ Standards (For ED-based Systems)</li> <li>● Quality Installation HNO<sub>3</sub>Solution Kit</li> </ul>
13	<b>Safety Features</b>	Power failure memory protection. Built in diagnostics for self-testing, Optical Leakage detector. Built in safety system in the event of a fault or solvent leaks are detected.
14	<b>Service Support</b>	<p>The vendor must have a dedicated set of engineers who can attend to the call within 48 hours</p> <ul style="list-style-type: none"> <li>● The engineers must reside in the states of South India (Kerala, Karnataka or Tamil Nadu)</li> <li>● The contact details of service engineers must be mentioned</li> <li>● The supplier should provide their willingness to deliver adequate support to relocate the instrument at free of cost, whenever the situation arises, in the next two years post-installation</li> </ul>
15	<b>Annual Maintenance contract (AMC)</b>	Annual Maintenance Contract quotation for 2 years after the warranty period should be attached separately
16	<b>Warranty</b>	Minimum of three-year warranty on the equipment, accessories and spares from the date of installation
17	<b>Training</b>	Vendor should provide training on operation and application for each of the equipment mentioned in the tender at IIT Palakkad after installation

**UNDERTAKING BY THE BIDDER**  
**(TO BE SUBMITTED ONLY THROUGH ONLINE MODE IN APPROPRIATE FORMAT)**

We here by accept all the Terms and Conditions of the Tender Document and strictly adhere to the same in the event of getting Purchase order. We also declare that the Technical and Financial Bids submitted by us has NO DEIVATION from the Tender Terms and Conditions.

**We hereby accept that the PRICES OF THE EQUIPMENTS/ITEMS QUOTED ARE AS PER THE INCOTERMS 2022 - DDP MODE, IIT PALAKKAD AND CLAUSE NO.6 OF THE TENDER DOCUMENT.**

We hereby undertake that there are \_\_\_\_\_ pages, serially numbered, in the submitted tender including the supporting documents. (Please serially number all the pages including blank page, if any).

We have submitted our principal's exclusive authorization letter which is specific for this tender No. \_\_\_\_\_ dated \_\_\_\_\_.

**Note: This letter should be on the letterhead of the quoting firm and should be signed by a Competent Authority.**

## ANNEXURE-III

**FALL CLAUSE NOTICE CERTIFICATE**  
**(TO BE SUBMITTED ONLY THROUGH ONLINE MODE IN APPROPRIATE FORMAT)**

This is to certify that we have offered the maximum possible discount to you in our Quotation No. \_\_\_\_\_ dated \_\_\_\_\_ **(Please do not reveal the prices here, which will lead to outright rejection of your bid).**

The prices charged for the Stores supplied under tender should under no event be higher than the lowest prices at which the party sells the items of identical description to any other Govt. organization/PSU's/Central Govt., /State Govt. Autonomous bodies/Central/state Universities/Central/State Educational Institutions, failing which the "FALL CLAUSE" will be applicable. The institute will look into a reasonable past period to ensure this.

In case, if the price charged by our firm is found to be more, **IIT Palakkad** will have the right to recover the excess charged amount from the subsequent/unpaid bill of the supplier.

**Note: This letter of authority should be on the letterhead of the quoting firm and should be signed by a Competent Authority and having the power of attorney.**

## ANNEXURE-IV

**UNDERTAKING REGARDING BLACKLISTING / NON – DEBARMENT**

Tender No. \_\_\_\_\_

To,  
M/s. Indian Institute of Technology Palakkad  
Ahalia Integrated Campus, Kozhipara,  
Palakkad, Kerala 678623

We hereby confirm and declare that we, M/s \_\_\_\_\_ are not blacklisted/ De-registered / debarred by any Government department/ Public Sector Undertaking/ Private Sector/ or any other agency for which we have Executed/ Undertaken the works/ Services.

For  
Company Name and Seal  
Authorised Signatory

**Note: This letter should be on the letterhead of the quoting firm and should be signed by a Competent Authority.**

**FORMAT FOR SELF-CERTIFICATION UNDER PREFERENCE TO MAKE IN INDIA**  
**(TO BE SUBMITTED ONLY THROUGH ONLINE MODE IN APPROPRIATE FORMAT)**

Format for Affidavit of Self-Certification regarding Minimum Local Content in line with “Make in India” Policy vide GoI Order no. P-45021/2/2017-PP (B.E.-II) dated 15.06.2017 (subsequently revised vide orders dated 28.05.2018, 29.05.2019 and 04.06.2020)

Date: \_\_\_\_\_

I/We \_\_\_\_\_ S/o, D/o, W/o, \_\_\_\_\_

Resident of \_\_\_\_\_

Hereby solemnly affirm and declare as under:

That I will agree to abide by the terms and conditions of the Public Procurement (Preference to Make in India) Order, 2017 (hereinafter PPP-MII order) of Government of India issued vide Notification No:P-45021/2/2017 - BE-II dated 15/06/2017, its revision dated 28/05/2018 and any subsequent modifications/Amendments, if any and

That the local content for all inputs which constitute the said goods/services/works has been verified by me and I am responsible for the correctness of the claims made therein.

<b>Tick ( ✓ ) and Fill the Appropriate Category</b>	
<input type="checkbox"/>	I/We _____ [name of the manufacturer] hereby confirm in respect of quoted items(s) that Local Content is equal to or more than 50% and come under “ <b>Class-I Local Supplier</b> ” category.
<input type="checkbox"/>	I/We _____ [name of the manufacturer] hereby confirm in respect of quoted items(s) that Local Content is more than 20% but less than 50% and come under “ <b>Class-II Local Supplier</b> ” category.
<input type="checkbox"/>	I/We _____ [name of the manufacturer] hereby confirm in respect of quoted items(s) that Local Content is less than or equal to 20% come under “ <b>Non-Local Supplier</b> ” category.

For and on behalf of..... (Name of firm/entity)

Authorized signatory (To be duly authorized by the Board of Directors)

<Insert Name, Designation and Contact No.>

[Note: In case of procurement for a value in excess of Rs. 10 Crores, the bidders shall provide this certificate from statutory auditor or cost auditor of the company (in the case of companies) or from a practicing cost accountant or practicing chartered accountant (in respect of suppliers other than companies) giving the percentage of local content.]