

 IIT PALAKKAD	भारतीय प्रौद्योगिकी संस्थान पालक्काड Indian Institute of Technology Palakkad अहलिआ एकीकृत कैम्पस, कोज़िहपारा Ahalia Integrated Campus, Kozhipara पालक्काड- 678557 Palakkad – 678 557	दूरभाषसंख्या/ Phone no: 04923 – 226300/ 590/ 586 ईमेल/ Email : purchase@iitpkd.ac.in
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Ref No: IITPKD/ELE/AA/106/2017

Date: 18.01.2018

Due Date of the tender: 02.02.2018 @ 3 PM

TENDER FOR INVITING QUOTATIONS

Dear Sirs,

On Behalf of Indian Institute of Technology Palakkad quotations are invited for **“Precision Measurement Equipment for EE Lab”** confirming to the specification in the Annexure.

- Preparation of Bids:** - The tenders should be submitted **under two-bid system** (i.e.) Technical bid and Financial bid. 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 cover and sealed. Both sealed covers should be put into a bigger cover.
- Compliance sheet for the specification & OEM Brochure has to be attached along with Technical bid. Vendor has to fill the compliance sheet and mention page number or reference number in OEM brochure. Unfilled / partial filled sheets lead to disqualification.**
- 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 him on or before the due date stipulated above. Fax and Email quotation are not acceptable.**
- The price should be quoted per unit and packing and delivery charges should be indicated separately. The offer/bids should be exclusive of Taxes and Duties, which will be paid by the purchaser as applicable. However the percentage and of taxes and duties as on date should be clearly indicated.
- The Quotations should be valid for **sixty days** from the due date and the period of delivery required should also be clearly indicated.
- Local Firms:** Quotations should be for free delivery to this Institute. If Quotations for Ex-Godown delivery charges should be indicated separately.
- Outside Palakkad:** Quotations should be for **F.O.R. at IIT Palakkad**. If F.O.R. consignor station, freight charges by passenger train / lorry transport must be indicated. If Ex-Godown, packing, forwarding and freight charges must be indicated.

8. Goods shall not be supplied without an official supply order.
9. **Custom Duty:** Custom Duty which will be paid at a concessional rate against duty exemption certificate.
10. **Concessional GST :** Concessional GST@ 5% will be paid extra as per GOI notification no. 47/2017, dated 14.11.2017.
11. **Payment:** Every attempt will be made to make payment within 30 days from the date of receipt of bill / acceptance of goods, whichever is later. No advance payment will be made. The Tenderer have to furnish the bank details along with tender like Account No, Account Name, IFSC Code, Bank address etc.
12. **Submission of Bids:** Quotation should be sent to the following address “**The Registrar, Indian Institute of Technology Palakkad, Ahalia Integrated Campus, Kozhipara, Palakkad -678 557, Kerala**”, Phone No: 04923 226 586/590, Email: purchase@iitpkd.ac.in.
13. **Delivery Period: Delivery Clause should be indicated clearly.**
14. **Warranty : Warranty condition should be indicated.**
15. **Delay in Supply or Liquidate damages:** If the supplier fails to deliver the stores within the time specified in the purchase order, the purchaser will recover from the supplier as liquidated damages a sum of one- half of one percent (0.5%) of the P.O value of the undelivered stores for each calendar week of delay. The total liquidated damages shall not exceed five percent (5%) of the P.O price of the unit or units so delayed. Stores will be deemed to have been delivered only when all their component parts are also delivered. If certain components are not delivered in time, the stores will be considered as delayed until such time as the missing parts are delivered.
16. **Late offer:** The quotation received after due date will not be considered. Please ensure that your offer is sent well in advance to reach the Institute by the due date.
17. **Loading and unloading charges will be borne by the supplier.**
18. **Acceptance and Rejection:** IIT Palakkad has the right to accept the whole or any parts of the Tender or portion of the quantity offered or reject it in full without assigning any reason.

Yours faithfully,

Encl: Specifications

Registrar, IIT Palakkad

Technical Specifications for Precision Measurement Equipment for EE Lab

Part A	Benchtop 6 ½ digit multimeter - 2 Numbers
Part B	Benchtop LCR meter - 1 Number

The bidder may quote for one or more parts (Part A, Part B). Technical and Financial bid for each part must be enclosed in separate envelopes. All the financial and technical bids must be put in one big envelope and delivered to the purchase section. The evaluation will be done for each part separately and purchase order will be given to the technically qualified bidder, who quotes the lowest price for the respective part. For each of the parts the technical evaluation will be done based on the mandatory requirements for that part mentioned in the specifications.

IIT Palakkad reserves the right to request for a demonstration, if required, of compliance w.r.t to technical specifications. Such a demonstration will be conducted in the Temporary Campus of IIT Palakkad, Ahalia Integrated Campus, Palakkad. The expenses for this demonstration will have to borne by the bidder.

Part A : Benchtop 6 ½ digit multimeter - 2 Numbers			
Sl. No.	Parameter	Specification	
1.	Number of Digits	At least 6 ½ digits	
2.	DC Voltage measurement	(a) Range	100 mV (or lower) to 1000 V (or higher)
		(b) Resolution	100 nV (or better)
		(c) Accuracy	At least 40 ppm
3.	AC True RMS voltage measurement	(a) Range	100 mV (or lower) to 750 V(Or higher)
		(b) Resolution	100 nV or better
		(c) Accuracy	At least 1000 ppm
		(d) Frequency	At least upto 300 kHz
4.	DC Current measurement	(a) Range	At least upto 10 A
		(b) Resolution	100 pA or better
		(c) Accuracy	At least 60 ppm
5.	AC True RMS Current measurement	(a) Range	At least upto 10 A
		(b) Resolution	10 nA or better
		(c) Accuracy	At least 1500 ppm
		(d) Frequency	At least upto 10 kHz
6.	Resistance Measurement	(a) Type	2 and 4 wire
		(b) Range	At least upto 100 Mohm
		(c) Resolution	At least 100 ohm
		(d) Accuracy	At least 40 ppm
7.	Capacitance Measurement	(a) Range	At least upto 100 uF
		(b) Resolution	At least 1pF
		(c) Accuracy	1% or better
	Temperature Measurement	(a) Type	Platinum RTD
		(b) Range	-200 C to +600 C

		(c) Resolution	0.01 deg C
		(d) Accuracy	0.06 deg C
8.	Frequency & Period Measurement	(a) Range	At least upto 300 kHz
		(b) Resolution	1 uHz
		(c) Accuracy	0.01 %
9.	Continuity / diode test	Yes	
10.	Nulling capability	Yes	
11.	System Control	USB, IEE-488.2, Ethernet	
12.	Calibration	(a) Bidder must provide proof of NABL certification of technical specifications for the product being quoted.	
		(b) Manufacturer should have NABL Accredited Lab and Service/Calibration facility in India. Appropriate proof must be provided.	
13.	Warranty	At least 3 years.	
14.	Safety	Must support CAT I operation.	

Part B : Benchtop LCR meter - 1 Number

Sl. No.	Parameter	Specification		
1.	Frequency	<p>(a) 25 Hz (or lower) to 1 MHz (or higher); continuously variable</p> <p>(b) Frequency Accuracy at least 0.01 %</p> <table border="1"> <tr> <td>(c) Frequency resolution</td> <td> <p>i. At least 10 mHz in the lowest frequency range of operation.</p> <p>ii. For other frequency ranges [L, H], resolution must be at least 0.001 L</p> </td> </tr> </table>	(c) Frequency resolution	<p>i. At least 10 mHz in the lowest frequency range of operation.</p> <p>ii. For other frequency ranges [L, H], resolution must be at least 0.001 L</p>
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2.	Parameters that can be measured	<p>L : Inductance C : Capacitance R : Resistance G : Conductance Q : Quality Factor D : Dissipation factor X : Reactance B : Susceptance Z , θ : Impedance magnitude and phase Y , θ : Admittance magnitude and phase Rdc : DC resistance</p>		
3.	Measurement Modes	<p>(a) Parallel Equivalent Circuit Model : <i>Capacitor</i> : C-D, C-Q, C-R, C-G <i>Inductor</i> : L-D, L-Q, L-G, L-R</p> <p>(b) Series Equivalent Circuit Model : <i>Capacitor</i> : C-D, C-Q, C-R <i>Inductor</i> : L-D, L-Q, L-R</p> <p>(c) Impedance Measurement : R-X, Z - θ(degree), Z - θ(radian)</p>		

		G-B, $ Y - \theta(\text{degree})$, $ Y - \theta(\text{radian})$ Rdc Clear instructions to extract any of the mandatory parameters that do not have direct measurement support, from the measured parameters, must be provided.
4.	Basic Accuracy	Impedance At least 0.05 %
5.	Test Characteristics	Signal (a) AC : At least [10 mV to 1 Vrms] variable test signal (b) AC current : At least [100 uA to 10 mA] variable test signal (c) DC bias : At least upto +/- 20 V (d) Source Impedance : Not more than 100 ohm
6.	Compensation Capabilities	Open/ Short/Load compensation
7.	Programmable list sweep	At least 100 points
8.	System Interface	USB, GPIB, LAN
9.	Calibration	(a) Bidder must provide proof of NABL certification of technical specifications for the product being quoted. (b) Manufacturer should have NABL Accredited Lab and Service/Calibration facility in India. Appropriate proof must be provided.
10.	Warranty	At least 3 years.
11.	Accessories	(a) Mandatory : i. Fixture for Impedance evaluation of lead type devices upto 1MHz. A guard terminal must be available for three terminal devices and a shorting plate must be available. ii. Fixture for Impedance evaluations of SMD components (1.6 mm x 0.8mm or greater) upto 1MHz. The fixture must come with tweezers. (b) Optional (Price must be quoted as a separate item) : i. Transformer parameter extraction setup

Who Can Participate?

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

1. The bidder should be either an Original Equipment Manufacturer (OEM) of Precision Measurement Equipment or should be an authorized representative (provide documentary proof) of an OEM that manufactures Precision Measurement Equipment.
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 preferably have a service center in Karnataka/Tamil Nadu/ Telangana/Andhra Pradesh or Kerala. Certificate of registration for the centers to be provided. For service centers located in any other location, in case of service and repairs, the bidder has to perform all the procedures of shipping and bear all the cost for the same. Details about scope of service activities provided by the service centers must be provided.
5. The bidder must be in existence in the business of Precision Measurement Equipment for a minimum period of 3 previous financial years (before or since 01 April 2012). Documentary evidences of experience must be provided.
6. The bidder should have documentary evidence of having supplied Precision Measurement Equipment to a Centrally Funded Technical Institution (IIT, NIT, IISc, IISER) in the last three years (01 April 2014 – 31 Oct 2017). 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.
7. **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.**
8. **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 the page number or reference number in OEM brochure for each item in the compliance sheet. Unfilled / partially filled sheets lead to disqualification.**
9. Service and warranty for a minimum period of three years for the equipment must be provided.