

 IIT PALAKKAD	भारतीयप्रौद्योगिकीसंस्थानपालक्काड Indian Institute of Technology Palakkad अहलिआ एकीकृत कैम्पस, कोज़िपारा Ahalia Integrated Campus, Kozhipara पालक्काड- 678557 Palakkad – 678 557	दूरभाषसंख्या/ Phone no: 04923 – 226 586/561 ईमेल/ Email : purchase@iitpkd.ac.in
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Tender for Inviting Quotations

Ref No: IITPKD/CIE/MK/08/2018

Date: 08.05.2018

Due date for the tender: 23.05.2018 at 3.00 PM

Dear Sirs,

On Behalf of Indian Institute of Technology Palakkad quotations are invited for supply of “**Equipment for Testing Thin- Thick Cylinders and Shafts**” confirming to the specification in the Annexure.

- 1. 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 bid and the Financial should be put in separate cover and sealed. Both sealed covers should be put into a bigger cover. If it is single bid cover, the quotation will be rejected automatically.
- 2. Opening of the Bids:** The offer/ Bids will be opened by the committee duly constituted for this purpose. The Technical bids will be opened and will be examined by the Technical Committee, Which will decide the suitability of the bid as per the specification and requirements. The financial offers/ bids will be opened only for the bidders **who meet all the Technical requirements.**
- 3. 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.**
- 4. The price should be quoted per unit inclusive of and packing and delivery charges should be indicated. The offer/bids should be exclusive of Taxes However the percentage of taxes as on date should be clearly indicated.**
- 5. The Quotations should be valid for sixty days from the due date and the period of delivery required should also be clearly indicated.**
- 6. Goods shall not be supplied without an official supply order.**

7. **Custom Duty:** Custom Duty which will be paid at a concessional rate against duty exemption certificate.
8. Quotations should be for **F.O.R. at IIT Palakkad, Transit Campus, West Pudussery, Kanjikode, Palakkad, Kerala**
9. **Concessional GST: Concessional GST@ 5% will be paid extra against GOI Notification 47/2017, Dated 14.11.2017**
10. **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 such as Account No, Account Name, IFSC Code etc.,
11. **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 226 586/561** , Email : **purchase@iitpkd.ac.in**
12. **Delivery Period:** The quotation should indicate clearly when delivery and installation will be made.
13. **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.
14. **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.
15. **Warranty:** Warranty clause should be indicated clearly.
16. Loading and Unloading charges will be borne by the supplier.
17. **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

Registrar, IIT Palakkad

**EQUIPMENT FOR TESTING THIN-THICK CYLINDERS AND
SHAFTS**

VENDOR QUALIFICATION REQUIREMENTS

1. The equipment should be supplied by the original equipment manufacturer or their authorised dealer. In case of authorised dealer, the authorization letter/document from the original equipment manufacturer should be submitted along with the technical bid.
2. The vendor should submit the catalogue showing the full technical specifications of the equipment along with the technical bid, and this will be used for verification of the technical bid.
3. The technical bid shall be evaluated for acceptability by the technical committee. Before issuing the purchase order, the eligible vendor should be prepared to make a technical presentation within 15 days from the date of notification, if required.
4. The vendor should have supplied similar equipment to IITs, NITs, DRDO, ISRO, or CSIR labs within the past five financial years (2014-15 to 2018-19) and currently operational. The equipment supplied should be relevant to the structures laboratory with technical specifications similar to IIT Palakkad's specifications. Copy of purchase order, with the net value of a single purchase order exceeding 10 lakhs should be enclosed. The vendor should provide the details of such customers (complete address, email ID, telephone no., contact person etc.) along with the technical bid.
5. IIT Palakkad may seek a feedback about the performance of the equipment and after sales service of the vendor from such users, before shortlisting the technical bid. Feedback about the vendor and after sales support may also be sought from users having similar equipment, who are not listed by the vendor.
6. If required by IIT Palakkad, the vendor should arrange for demonstration and performance test of the operational equipment already installed in another facility.
7. The vendor should have competent and reliable service personnel in India. The details of the service provider should be provided along with the technical bid. In case of breakdown of the equipment, the vendor/authorized service provider should have the capability to arrange for the required service within 48 hours.
8. The installation and demonstration of the system should be done within one week from the date of delivery of the equipment to IIT Palakkad, by trained and experienced service engineers from the manufacturer/vendor. The performance of the system should be demonstrated to the satisfaction of the faculty/staff of IIT Palakkad.

9. The bid should include a declaration for one year warranty, followed by the terms of extended warranty for another two years. The cost of extended warranty should be quoted separately in the financial bid.
10. The vendor is responsible for all cost related to insurance, freight and transport of the equipment to IIT Palakkad's facility.

TECHNICAL SPECIFICATIONS

The vendor should fill the last two columns of this document, sign each page and submit along with the technical bid.

† In this column, the vendor should provide confirmation whether they will be able to supply the below items by stating 'YES' or 'NO'.

* While major deviations are not allowed, minor deviations may be justified in this column.

‡ In this column, the vendor should provide the page number and item number or serial number from their technical catalogue, which shows the specification of the item. Incomplete forms may be rejected.

Experiment Name	Specifications / Requirements	Confirmation by vendor (Yes/No) †	Justify deviations (if any)*	Page no. and Item / Sl. no. ‡
General	All apparatuses and data acquisition systems should be compatible with 220 V 50Hz - single phase AC			
	All equipment should be setup on a table top.			
Torsion test of rods	The setup should be restrained against torsional movements during testing			
	Apparatus should be able to load specimens until failure			
	Torque measured with strain gauge load cell or any alternate mechanism.			
	Twisting angle measured with an encoder with an angle indicator from at least -90° to +90°.			
	System for applying torque using mass disc and multiple weights or hand driven gear.			
	Maximum sample size to be tested is 300 - 750 mm			
	Clamping mechanism to firmly hold the specimen with one end fixed and other end movable.			
	Measuring range: Twisting moment of 0-30 Nm, twisting angle 0 to ±90°			

Experiment Name	Specifications / Requirements	Confirmation by vendor (Yes/No) †	Justify deviations (if any)*	Page no. and Item / Sl. no. ‡
	<p>Samples: At least three different material and same diameter- 15 numbers each.</p>			
	Thin walled cylinder made of aluminium or any other alloy firmly fixed on a base plate.			
	Ends of the cylinder should have suitable arrangements to achieve:			
	Uniaxial state of stress (eg: pipe)			
	Biaxial state of stress (eg: closed vessel)			
	At least 5 strain gauges installed at angles 0°, 30°, 45°, 60° and 90° to measure strain at surface of the cylinder			
Stress Analysis in Thin walled cylinder	A hand operated hydraulic pump or any alternate mechanism to pressurize the cylinder using suitable oil to generate circumferential and longitudinal stresses.			
	A pressure indicator or sensor to measure the applied pressure.			
	Length of cylinder: 350-400 mm, outer diameter 70-80 mm, wall thickness $\leq 1/10^{\text{th}}$ of outer diameter.			
	Maximum internal pressure: 3.5 N/mm ² or any suitable value compatible with the supplied equipment.			
	Thick walled cylinder of aluminium or any other alloy firmly fixed on a base plate.			
	The cylinder should be made from two halves joined with a cementing material.			
Stress Analysis of thick walled Cylinder	At least 5 strain gauges should be installed in an eccentric groove between the two halves, at precise radii and orientation.			
	Additional strain gauges should be installed on the inside and outside surface of the cylinder to measure longitudinal and circumferential strains.			

Experiment Name	Specifications / Requirements	Confirmation by vendor (Yes/No) †	Justify deviations (if any)*	Page no. and Item / Sl. no. ‡
	<p>A hand operated hydraulic pump or any alternate mechanism to pressurize the cylinder using suitable oil to generate radial, circumferential, and longitudinal strains.</p> <p>A pressure indicator and sensor to measure the applied pressure.</p>			
	<p>Length of cylinder: 200-300 mm, outer diameter 140-150 mm, thickness 50-60 mm</p>			
	<p>Maximum internal pressure: 7 N/mm² or any suitable value compatible with the supplied equipment.</p>			
	<p>Number of strain gauges installed ≥ 10.</p>			