

	<p>भारतीय प्रौद्योगिकी संस्थान पालक्काड Indian Institute of Technology Palakkad अहलिआ एकीकृत कैम्पस, कोज़िपारा Ahalia Integrated Campus, Kozhipara पालक्काड- 678557 Palakkad – 678 557</p>	<p>दूरभाषसंख्या/ Phone no: 04923 – 226300/590/586</p> <p>ईमेल/ Email : purchase@iitpkd.ac.in</p>
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Ref No: IITPKD/MECH/ICE LAB/ 033/ 2017

Date: 26.09.2017

Due Date of the tender: 11.10.2017 @ 3.30 PM

TENDER FOR INVITING QUOTATIONS

Dear Sirs,

On Behalf of Indian Institute of Technology Palakkad quotations are invited for “IC Engine Lab Equipments” 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 and the Financial bids should be put in separate cover and sealed. Both sealed covers should be put into a bigger cover
2. 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.**
3. 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.
4. The Quotations should be valid for **sixty days** from the due date and the period of delivery required should also be clearly indicated.
5. If the item is under DGS&D Rate contract No. and the price must be mentioned. It may also please be indicated whether the supply can be made direct to us at the Rate contract price (Please note that we are not Direct Demanding Officers). If so please send copy of the RC.
6. **Local Firms:** Quotations should be for free delivery to this Institute. If Quotations for Ex-Godown delivery charges should be indicated separately.

7. 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. **Excise Duty & Custom Duty:** Custom Duty which will be paid at a concessional rate against duty exemption certificate.
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 like Account No, Account Name, IFSC Code, Bank address 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 226 586/590, Email: purchase@iitpkd.ac.in.
12. **Delivery Period:** The quotation should indicate clearly when delivery and installation to 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. **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

Encl: Specifications

Specifications of

Engine Test Set up of Single Cylinder Automotive Diesel Engine with Open ECU

<p>Engine System with Open ECU</p>	<p><u>Engine:</u> Type: Single cylinder Mahindra Automotive CRDI Diesel Engine, Torque: 35 Nm@1600-1800 or better, Power: 7.5 kW@3000 rpm or better, CR: 18:1 or better with EGR with Cooler</p> <p><u>Fuel System:</u> CRDi System, PCV, P&H Injector, Company fitted high pressure fuel pump (Min.1200 bar with adjustment for higher pressures appro 2000 bars), Low Pressure Fuel Pump Sensors: Crank, Cam, Engine Temp, Driver Demand, Fuel Pressure Sensor</p> <p><u>Open ECU:</u> Open ECU having following functions: 1. Injection Quantity, Injection Pressure (Closed Loop), Injection Timing, Multiple Injections (Min.3 with provision for 5 or more pulses), Torque Control Mode & Speed Control Mode 3. EGR Control – Solenoid with position feedback 4. Option for upgrade to Secondary Fuel Control (Injection Timing & Pulse width control), 5. PC Based Software with CAN Communication having features like online data monitoring, online change of parameters, recording for offline analysis. 6. Research Grade ECU, usable for vehicle level testing. 7. Provision for Lambda Sensor</p>
<p>Dynamometer + Instrumentation</p>	<p>Type: Eddy Current, water cooled, Cardon Shaft, Integration with Engine Sensors with Displays: Temperature : 1.Inlet Air, 2.Fuel, 3.Exhaust, 4.Water Inlet, 5.Water Outlet,6.EGR,7.Lube Oil Others: Air Flow, Fuel Flow , Load, RPM , Lambda Sensor - LSU4.9 Additional provision for NOx Measurement, Secondary Fuel Control, Noise / Accelerometer Dynamometer with 3 Mode Control (Constant RPM, Torque & Current) option to be quoted separately</p>
<p>Combustion Pressure Measurement</p>	<p>Pressure Sensor: Piezo-electric Kistler make (150-200 bar, water cooled) with Charge Amplifier, Crank Angle Sensor and 2-3 m connector cables and PC Based Software</p>
<p>Warranty, Others</p>	<p>1. 2 years Warranty after successful installation 2. Supplier should have supplied similar equipment to at least five reputed organizations. Installation / Performance report to be attached along with contact details of a user faculty.</p>