

## INVITATION FOR QUOTATION

TEQIP-II/2015/CH1G02/Shopping/103

23 -Dec-2015

To,

### Sub: Invitation for Quotations for supply of Goods

Dear Sir,

1. You are invited to submit your most competitive quotation for the following goods with item wise detailed specifications given at Annexure I,

Sr. No	Brief Description	Quantity	Delivery Period(In days)	Place of Delivery	Installation Requirement (if any)
1	Resistivity of Semiconductors by Four Probe Method at Different Temperatures and Determination of the Band-Gap.	2	40	DR. SS BHATNAGAR UNVIERSITY INSTITUTE IF CHEMICAL ENGINEERING & TECHNOLOGY, PANJAB UNIVERSITY, CHANDIGARH	WILL BE DONE AT THE SITE
2	Study of Dielectric Constant and Curie Temperature of Ferroelectric Ceramics by temperature	2	40	DR. SS BHATNAGAR UNIVERITY INSTITUTE OF CHEMICAL ENGINEERING & TECHNOLOGY, PANJAB UNIVERSITY, CHANDIGARH	WILL BE DONE AT THE SITE
3	Magnetic Hysteresis	2	40	DR. SS BHATNAGAR UNIVERITY INSTITUTE	WILL BE DONE

	Loop Tracer			OF CHEMICAL ENGINEERING & TECHNOLOGY, PANJAB UNIVERSITY, CHANDIGARH	AT THE SITE
4	To Determine the Variation of Magnetic Field Along the Axis of A Current Carrying Coil and Then to Estimate the Radius of the Coil	2	40	DR. SS BHATNAGAR UNIVERITY INSTITUTE OF CHEMICAL ENGINEERING & TECHNOLOGY, PANJAB UNIVERSITY, CHANDIGARH	WILL BE DONE AT THE SITE
5	Hall Effect in Semiconductors	2	40	DR. SS.BHATNAGAR UNIVERSITY INSTITUTE OF CHEMICAL ENGINEERING & TECHNOLOGY, PANJAB UNIVERSITY, CHANDIGARH	WILL BE DONE AT THE SITE

2. Government of India has received a credit from the International Development Association (IDA) towards the cost of the **Technical Education Quality Improvement Programme[TEQIP]-Phase II** Project and intends to apply part of the proceeds of this credit to eligible payments under the contract for which this invitation for quotations is issued.
3. Quotation,
  - 3.1 The contract shall be for the full quantity as described above.
  - 3.2 Corrections, if any, shall be made by crossing out, initialing, dating and re writing.
  - 3.3 All duties and other levies payable by the supplier under the contract shall be included in the unit price.
  - 3.4 Applicable taxes shall be quoted separately for all items.
  - 3.5 The prices quoted by the bidder shall be fixed for the duration of the contract and shall not be subject to adjustment on any account.
  - 3.6 The Prices should be quoted in Indian Rupees only.

4. Each bidder shall submit only one quotation.
5. Quotation shall remain valid for a period not less than **55** days after the last date of quotation submission.
6. Evaluation of Quotations,  
The Purchaser will evaluate and compare the quotations determined to be substantially responsive i.e. which
  - 6.1 are properly signed ; and
  - 6.2 confirm to the terms and conditions, and specifications.
7. The Quotations would be evaluated for all items together.
8. Award of contract:  
The Purchaser will award the contract to the bidder whose quotation has been determined to be substantially responsive and who has offered the lowest evaluated quotation price.
  - 8.1 Notwithstanding the above, the Purchaser reserves the right to accept or reject any quotations and to cancel the bidding process and reject all quotations at any time prior to the award of contract.
  - 8.2 The bidder whose bid is accepted will be notified of the award of contract by the Purchaser prior to expiration of the quotation validity period. The terms of the accepted offer shall be incorporated in the purchase order.
9. Payment shall be made in Indian Rupees as follows:  
**Delivery and Installation - 90% of total cost**  
**Satisfactory Acceptance - 10% of total cost**
10. All supplied items are under warranty of **36** months from the date of successful acceptance of items.
11. You are requested to provide your offer latest by **02:30** hours on **12-Jan-2016** .
12. Detailed specifications of the items are at Annexure I.
13. Training Clause (if any) **The company should provide training of the specified equipment at the time of installation without any additional cost.**

14. Testing/Installation Clause (if any) **Vendor has to install the equipment in the lab space provided at his own cost and test the equipment**
15. Information brochures/ Product catalogue, if any must be accompanied with the quotation clearly indicating the model quoted for.
16. Sealed quotation to be submitted/ delivered at the address mentioned below,  
**The chairperson,**  
**TEQIP-II,**  
**Dr. S.S. Bhatnagar University Institute of Chemical Engineering and Technology,**  
**Panjab University,**  
**Chandigarh – 160 014**
17. We look forward to receiving your quotation and thank you for your interest in this project.

(Authorized Signatory)  
Name & Designation

## Annexure I

Sr. No	Item Name	Specifications
1	Resistivity of Semiconductors by Four Probe Method at Different Temperatures and Determination of the Band-Gap.	<p>The experiment consists of:</p> <ul style="list-style-type: none"> <li>(a) Four Probe Arrangement (Spring Type)</li> <li>(b) Oven : upto 200 °C</li> <li>(c) Sample : Ge Crystal N or P type</li> <li>(d) Thermometer : (0-200°C)</li> <li>(e) Digital Four Probe Set-up</li> </ul> <p>The set up consists of the following three units.</p> <ul style="list-style-type: none"> <li>(i) Multirange Electronic Millivoltmeter Range : X1 (0-200mV) and X10 (0-2V)</li> </ul> <p>Resolution : 100 <math>\mu</math>V at x 1 range            Input Impedance : 1 M ohm            Accuracy : <math>\pm 0.2\%</math> of the reading +1digit            Display : 3 ½ digit, 7 segments LED            Special Feature : with auto polarity and decimal indication.</p> <ul style="list-style-type: none"> <li>(ii) Constant Current Source Current : 0-20 mA or as required</li> </ul> <p>Open circuit voltage : 18 V            Load Regulation : 0.03% for no load to full load            Line Regulation : 0.05% for 10% main variation</p> <p>Accuracy : <math>\pm 0.25\%</math> of the reading + 1 digit            Power : 220 V <math>\pm 10\%</math> , 50 Hz</p> <ul style="list-style-type: none"> <li>(iii) Oven power Supply: To provide suitable voltage for the oven with provision for L &amp; H rates of heating.</li> </ul> <p><b>Complete in all respect with manual and test results</b></p>
2	Study of Dielectric Constant and Curie Temperature of Ferroelectric Ceramics by temperature	<p>The set-up consists of;</p> <ul style="list-style-type: none"> <li>(a) Probes : Two with Spring Type Contact</li> <li>(b) Sample : Barium Titanate (BaTiO<sub>3</sub>)</li> <li>(c) Oven : High quality temperature controlled oven.</li> <li>(d) Dielectric Constant Unit</li> </ul> <p>The set-up consists of two units</p> <ul style="list-style-type: none"> <li>(i) Oven Controller Range : Ambient to 473 K            Resolution : 1 K</li> </ul>

		<p>Stability : 0.5 K  Accuracy : 1 K  Oven : Specially designed for this apparatus  Sensor : RTD (A class)</p> <p>Display : 3½ digit, 7 segment LED auto polarity &amp; decimal indication</p> <p>Power: 220V ± 10% , 50Hz, 150 W</p> <p>(ii) Digital Capacitance Meter  Range : 18 - 6000pF  Resolution : 1 pF</p> <p>Display : 3½ digit, 7 segment LED auto polarity &amp; decimal indication</p> <p><b>Complete in all respect</b></p>
3	Magnetic Hysteresis Loop Tracer	<p><b>Magnetic Hysteresis Loop Tracer</b>  The following magnetic properties of ferromagnetic samples can be studied</p> <p>(a) Coercivity  (b) Saturation magnetization  (c) Retentivity  (d) The number of phases present</p> <p><b>Complete in all respect</b> including long solenoid (LXD) 175mmx 68mm wound with uniform layer of super enamelled copper wire. Power supply for Solenoid with 3½ digit digital panel meter directly calibrated in gauss. The solenoid produce a field from 0 to 360 gauss in 10 decade ranges. Non-magnetic sample holder with pick up coil suitable to fix inside the solenoid and set of samples, hard steel, soft steel and nickel (all in wire form) with CRO.</p>
4	To Determine the Variation of Magnetic Field Along the Axis of A Current Carrying Coil and Then to Estimate the Radius of the Coil	<p>The Experiment consists of the following</p> <p>(a) Stewart and Gee's Apparatus made of non-magnetic bench and frame fitted on a wooden stand and non-magnetic large radius coils with 50, 250 and 500 turn fitted in the center of 30 to 30 cm long bench</p> <p>(b) Sensitive permanent magnet compass  (c) Four way key</p> <p><u>Accessories Required:</u></p> <p>i. <b>Constant current Source Model</b> (used in place of 12 V Exide Battery)  Open Circuit Voltage : 20V  Current Range : 0-200 mA .  Resolution : 100 µA  Accuracy : ± 0.25% of the reading ± 1 digit  Display : 3 ½ digit, 7 segment LED with auto polarity and</p>

		<p>decimal indication  Load Regulation : 0.05% for 0 to full load  Line regulation : 0.1 % for 10% change in mains voltage  Power : 220V <math>\pm</math> 10% , 50 Hz  <b>Complete in all respect</b>  <i>Accessories Required:</i>  ii. Constant current Source (used in place of 12 V Exide Battery) with digital display  Complete in all respect</p>
5	Hall Effect in Semiconductors	<p>The experiment consists of  (a) (i) Hall Probe (Ge crystal)  Material : Ge single crystal (N-type)  Zero-Field Potential : &lt; 1 mV.  Resistivity : 10-12 <math>\Omega</math>-Cm.  Contacts : Spring type contact  Hall Voltage : 25-40 mV/10mA/KG.  (ii) Hall Probe (Ge crystal)  Material : Ge single crystal ( P-type)  Zero-Field Potential : &lt; 1 mV.  Resistivity : 10-12 <math>\Omega</math>-Cm.  Contacts : Spring type contact  Hall Voltage: 25-40 mV/10mA/KG.  <b>(b) Digital Hall Effect Set-up,</b>  Consisting of the following.  <b>(i) Digital Millivoltmeter Range : 0 -200 mV</b>  Resolution : 100 <math>\mu</math>V.  Input Impedance : 1 Mohm.  Accuracy : <math>\pm</math> 0.1% of the reading+1 digit.  Special Feature : Auto zero and polarity indicator.  <b>(ii) Constant Current Source</b>  Current Range : 0-20 mA or as required  Display : 3 ½ digit, 7-segment LED display.  Accuracy : <math>\pm</math> 0.5% of the reading+1 digit.  Load Regulation : <math>\pm</math> 0.05% for no to full load.  Line Regulation : <math>\pm</math> 0.05% for 10% mains variation.  Power : 220V + 10% , 50 Hz  <b>(c) Electromagnet,</b>  Pole pieces : 50-mm dia flat.  Field : 7 K. gauss at 10 mm air-gap. The air gap is continuously variable upto 50 mm with two way knobbed wheel screw adjusting system.  Coils : Two, each coil wound on nonmagnetic Al. former</p>

		<p>Power : 0-36 volt, 4.0 Amp. (max)</p> <p>(d) <b>Constant Current Source,</b> Current : 0-3.5 Amp. Or as required. Line Regulation : <math>\pm 0.2\%</math> for no to full load Load Regulation : <math>\pm 0.2\%</math> for 10% mains variation. Display : 3 ½ digit, 7-segment LED display. Power : 220V <math>\pm 10\%</math>, 50 Hz. Protection : Protected against over load and short circuits.</p> <p>(e) <b>Digital Gaussmeter,</b> Range : 0-2 K gauss and 0-20 K gauss Accuracy : <math>\pm 1\%</math> of the reading +1 digit. Metering : 3 ½ digit, 7-segment LED display. Sensing Element: Hall Probe In-As (Transverse type) in pen type case Power : 220 V <math>\pm 10\%</math>, 50 Hz. Special Feature : Indicates direction of the magnetic field.</p> <p>(f) <b>Wooden stand</b> for probe twin</p> <p><b>Complete in all respect</b></p>
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**FORMAT FOR QUOTATION SUBMISSION**

(In letterhead of the supplier with seal)

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

To:

\_\_\_\_\_  
\_\_\_\_\_

Sl. No.	Description of goods (with full Specifications)	Qty.	Unit	Quoted Unit rate in Rs. (Including Ex Factory price, excise duty, packing and forwarding, transportation, insurance, other local costs incidental to delivery and warranty/ guaranty commitments)	Total Price (A)	Sales tax and other taxes payable	
						In %	In figures (B)
<b>Total Cost</b>							

Gross Total Cost (A+B): Rs. \_\_\_\_\_

We agree to supply the above goods in accordance with the technical specifications for a total contract price of Rs. \_\_\_\_\_ (Amount in figures) (Rupees \_\_\_\_\_ amount in words) within the period specified in the Invitation for Quotations.

We confirm that the normal commercial warranty/ guarantee of ————— months shall apply to the offered items and we also confirm to agree with terms and conditions as mentioned in the Invitation Letter.

We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf will engage in bribery.

Signature of Supplier

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Contact No: \_\_\_\_\_