



ਆਈ. ਕੇ. ਗੁਜਰਾਲ ਪੰਜਾਬ ਟੈਕਨੀਕਲ ਯੂਨੀਵਰਸਿਟੀ ਜਲੰਧਰ, ਕਪੂਰਥਲਾ  
I.K. GUJRAL PUNJAB TECHNICAL UNIVERSITY JALANDHAR, KAPURTHALA  
Department of Physics

For Website

Ref. No. IGKPTU/PH/216 By Registered /Speed Post/Email

Dated 18/7/2024

M/S .....  
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**Subject: Quotations for Statistical Mechanics Physics Lab equipment/setup at IKGPTU, Main Campus**

Dear Sir/Madam,

University intends to purchase the equipment/setup for the Statistical Mechanics Physics Lab for B.Sc. (Hons.) in Department of Physics by inviting sealed quotations. The supply order will be placed to the firm offering the lowest rates equipment/setup wise. Therefore, you are requested to send the sealed quotation of the equipment/setup by quoting lowest rates (inclusive of all taxes, govt levied duties, etc.) through registered/speed post or by hand. Please subscribe on envelope "Quotation for procurement of setups for Statistical Mechanics Physics Lab in Department of Physics" and to be opened by committee only. Quotation must reach in the office of Head of Department, Department of Physics, CB-III, I.K. Gujral Punjab Technical University, Jalandhar - Kapurthala Highway, VPO-Ibbaan, Kapurthala-144603, up to 3:00 P.M. on July 23, 2024. Quotation will be opened in the office of Head of Department, Department of Physics at 4.00 P.M. on the same day. The vendors or their representatives may be present at the time of opening of the quotations. If Government of Punjab/IKGPTU declares holiday on July 23, 2024, quotations will be opened on the next working day. Technical Specification of the scientific items/equipments are as per attached herewith.

**Terms and Conditions:**

1. Bidder is at liberty to quote rates of one or more setup(s)/item(s)/make(s) etc. There is no compulsion to quote the rates of all setup(s)/item(s)/make(s), etc.
2. The firm having GST number need only apply.
3. Any quotations other than the specifications mentioned will not be considered.
4. Bidder should quote the rates inclusive of two years comprehensive warranty.
5. University reserves the right to buy/not to buy/increase/decrease any of the setup(s) quantity.
6. The items are to be delivered at Department of Physics, AB-III, I.K. Gujral Punjab Technical University, Jalandhar - Kapurthala Highway, VPO - Ibbaan, Kapurthala, within 28 days of issuance of the supply order.
7. No advance payment will be made.
8. University will not be paying anything extra as the quotations invited are inclusive of all taxes/Govt. levied duties/transportation charges etc.
9. The payment will be released only after the receipt of satisfactory report from the Department of Physics in terms of successful installation and demonstration of supplied equipment from the vendors.

  
Head

Department of Physics

Mail id: [physicalsciences@ptu.ac.in](mailto:physicalsciences@ptu.ac.in)

**"Propelling Punjab to a prosperous Knowledge Society"**

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Annexure - I

**I. K. GUJRAL PUNJAB TECHNICAL UNIVERSITY JALANDHAR, KAPURTHALA**  
**Department of Physics (Main Campus)**

**Subject:** - Requirement of Equipments in B.Sc. (Hons) labs in the Department of Physics Main Campus.

S. No	Name of setup	Technical Specifications	Approx. price	Qty	Total Price
1	<p><b>POLARIZATION OF LIGHT AND VERIFICATION OF MALUS LAW</b></p> <p>Experiments:            Exp-1 To measure the light intensity of plane polarized light as a function of the analyzer position.            Exp-2 To verify Malus law.            Exp-3 To verify inverse square law.</p>	<p>OPTICAL BENCH            Material : Aluminium alloy            Type : Hexagonal section            Scale : 0-100cm            Least count : 1mm            He-Ne LASER            Wavelength : 632.8 nm            Working current : 4mA ~ 6mA            Output power : &gt; 2mW            Contour dimension            (Outer diameter x length) : f 40 mm x 250 mm            Continuous working time : &gt; 8 hrs.            Working voltage : AC 220 V <math>\pm</math> 22 V            Input Power Rating : &lt;2 W            Need no ground connection            Contour Dimension(lxbxh) : 300x62x82 mm            Weight : 1.5 kg (approx.)            PHOTO DETECTOR            Detector : Silicon photocell            Terminals : 4mm safety socket            Aperture : 1 mm            Rod : 10 mm diameter            POLARIZER / ANALYZER            Angle : Adjustable (0° - + 90°)            List count : 1°            Aperture : 21mm dia.            Frame : 130mm dia., to avoids scattering of lights            Rod : 10 mm dia.            TRANSVERSE SADDLE            Material : Aluminium            Locking : Spring loaded            Motion : X-Y axis            Holder : 10mm dia.</p>	63,000	01	63,000
2	<p><b>ADVANCE POLARI METER</b></p> <p>Experiment:            Exp-1 To measure the rotation of the polarization plane through optically active liquids and determine the concentration of</p>	<p>Compact Quartz Polari meter            Measuring range of optical rotation : +/- 180            Division Value : 1°            Least count : 0.05°            Magnifying factor of the magnifying</p>	89,000	01	89,000

Annexure - I

	sugar solution. Exp-1 To observe the rotation of the plane of polarization of monochromatic light by sugar solution for determining the concentration of solution of optically active substance	glass : 4 times Monochromatic light source : 5893A° Power line voltage : 220V, 50 Hz Working current : 1.3A Discharging power : 20W Stabilization time(approx.) : 5 minutes			
3	<b>BABINET COMPENSATOR</b> Exp:- To analyze elliptically polarized light by means of Babinet's compensator.	Contents : White light source (Lamp) Quarter wave plate Polarizer Analyzer Eye piece Sodium lamp (optional)	35,000	01	35,000
4	<b>velocity of ultrasonic</b> To determine the wavelength and velocity of ultrasonic waves in a liquid (Kerosene Oil, Xylene, etc.) by studying the diffraction through ultrasonic grating.	Ultrasonic Interferometer: Quartz Crystal: Diameter : 20mm Thickness : 1.4mm Frequency : 2MHz Liquid Cell: Optimum Quantity of Liquid : 12cc Max. Displacement of the Reflector : 25mm Least Count of Micrometer : 0.01mm Display : Digital & Analog Distance Measurement: Ultrasonic Transducer : 28cm to 1.0m (approximately) Clock Generator: 40 kHz Amplifier : 60dB Threshold Detector : 0 to 9V DC Buzzer Indicator : 1.5 - 15V DC Power Supply : 230V +10%, 50 Hz Fuse : 500mA	15,000	01	15,000
5	<b>DETERMINE STEFAN'S CONSTANT</b> Exp:- To determine the value of Stefan's constant	Scope of Supply Stefan's apparatus Thermometers Sensitive galvanometer Silver-constantan thermocouple Beaker 600ml Steam generator	37,000	01	37,000
6	<b>BOLTZMANN CONSTANT USING VI CHARACTERISTICS</b> Experiments: Exp:-1 To determine Boltzmann constant by the V-I	Plug in board Diode module IN 4007 Resistance module 100 Ohm, 2W Variable resistance module 1KQ (0-36000) Connecting leads Red & Black L=50cm 5 pair	13,000	01	13,000

Annexure - I

	characteristics of P-N junction diode	Digital Voltmeter 19.99 V DC Digital Ammeter 19.99 mV DC Power supply 5V DC Acrylic sheet with clip			
7	<b>WOLLASTON AIR FILM</b> Exp. To determine the refractive index of liquid by total internal reflection using Wollaston's air-film.	Specially designed spectrometer with attachment to hold air film, Air film attachment with stand, Experiment liquid, Container for air film (Rectangular glass container)	12,000	01	12,000
8	Exp. To study dependence of radiation on angle for a simple Dipole antenna.	Dipole antenna (with stand) receiving antenna RF generator, current receiver	41,000	01	41,000

Total Amount:- Approx. 3.05 Lakhs

