



Ref. No: SVSU/2023/SFASH/17

Dated: 24.02.2023

Notice Inviting Quotation

1. Sealed quotations are invited on or before 13.03.2023 up to 05:00pm from the reputed firms/organizations for the **Thermal Physics Lab**. The bid criterion, technical specification and compliance sheet is attached as Annexure-A.
2. Interested firms are requested to quote minimum price along with complete terms and conditions regarding validity of rates, delivery period, item as per specification, taxes etc.
3. The sealed quotations, complete in all respect, must reach by post in the office of **“Skill Faculty of Applied Sciences and Humanities, Shri Vishwakarma Skill University, Plot No. 147, Sec 44, Gurugram-122003 latest by 13.03.2023 up to 05:00pm.**
4. **“Quotations invited for Thermal Physics Lab of Applied Physics Lab Package-4”** must be clearly written on the sealed envelope.
5. The quotation received after due date and time or incomplete shall be out rightly rejected.
6. TDS and GST as amended from time to time by the Government will be deducted by the university from every bill of the agency.
7. Charges not mentioned in the quotation shall not be paid.
8. FOR shall be Shri Vishwakarma Skill University, Dudhola, Palwal, Haryana.
9. Rates should be quoted for FOR destination.
10. The quotation offer must be valid for a period of not less than 90 days from the date of submission of quotation.
11. The firm must have GST number printed on their quotation.
12. SVSU reserves the right to accept or reject any or all the bids received without assigning any reason.

Technical Specification and Compliance Sheet

Bid Criterion: The purpose of buying the lab/equipment is for the proper education of students & make them employable in Industry. Hence the equipment availability & reliability should be in high order with the latest version. To ensure flawless service back up and 100% equipment availability without any downtime is necessary.

1. The offered Model of OEM must be working in India, without any Problems.
2. The bidder should have Experience in installation, Service and Training of such lab/equipment in Indian Environment.
3. OEM should have service branch in the nearest possible locations to the University; and the OEM should also have spares etc. stored in India (nearest possible location).
4. The Bidder should provide relevant literature of the equipment in both hard and soft copy.
5. Warranty period of the product is required to be minimum of 3 years.
6. In case of dispute of difference arising between the parties, the dispute shall be referred to The Registrar, Shri Vishwakarma Skill University, whose decision shall be final and binding on both the parties.
7. The systems should be complete in all respect including spares, Consumables and accessories but not limitation to following.

**Specification and Requirements: -
Equipments and Instruments for Applied Physics Lab (Package-4)**

S. No.	Name of Items	Specifications
1	Thermal Expansion Trainer	<p>It should have following features:</p> <ul style="list-style-type: none"> • Precise measurement by Spherometer • For heating Electric Oven is provided • Buzzer indicator • Samples for study– Copper, Brass, Aluminium • Online product tutorials and manual should be available to perform lab experiments by following step-by-step experimental procedure <p>The trainer should have following Technical Specifications:</p> <p>Steam jacket Type : Brass Length : 50 cm Diameter : Inner 2.5 cm Outer 3 cm</p> <p>Sample Type : Copper, Steel, Aluminium Length : 52 cm Diameter : 10 mm</p> <p>Spherometer Main Scale : 10 - 0 - 10 mm Circular Scale : 100 divisions Least Count : 0.01 mm</p> <p>Buzzer indicator : 1.5 - 15 VDC Power Supply : 230 V, 50 Hz Adaptor Output : 5 V, 500 mA</p> <p>The trainer should performed following experiment:</p> <ul style="list-style-type: none"> • To determine the co-efficient of Linear Expansion of a given Sample.
2	Lee's Disc Setup	<p>It should have following Technical Specifications Adaptor Output: 5V, 500mA Temperature Sensors Range: Up to 150°C Max. Resolution: 0.5°C Disc Sample type: Cardboard, Glass, Plywood Disc Diameter: 111mm Disc Thickness: 2.8mm</p> <p>Online product tutorials and manual should be available to perform lab experiments by following step-by-step experimental procedure</p> <p>It should be able to perform following experiments:</p> <ul style="list-style-type: none"> • To determine the Coefficient of Thermal Conductivity of Bad Conductors by Lee's Disc method
		<p>It should have following features:</p> <ul style="list-style-type: none"> • High Seebeck Coefficient of thermoelectric module • Micro-controller based measurement • Digital display of temperature of hot and cold side • Provided with PC based measurement and calculation • Online product tutorials and manual should be available to perform lab

3	Seebeck and Peltier Effect	<p>experiments by following step-by-step experimental procedure</p> <p>It should be able to perform following experiments:</p> <p>Display : LCD (16 x 2)</p> <p>Temperature : Range: 0 - 150°C Resolution: 0.1°C</p> <p>Voltage : Range: 0 – 2000 mV Resolution: 0.1 mV</p> <p>Glass Beaker : 250 ml</p> <p>Fan : 3 V</p> <p>Supply :</p> <p>Adaptor Input : 220-240 V, 50 / 60 Hz Adaptor Output : 5 V, 1 A</p> <p>It should be able to perform following experiments:</p> <ul style="list-style-type: none"> • To study the Seebeck Effect • To Study the Peltier Effect • Understanding conversion of energy from one form to another • Application of thermal energy • To plot graph between thermo emf generated v/s temperature difference. • Calculation of Seebeck Coefficient.
4	Joule's Constant Measurement Setup	<p>It should have following features:</p> <ul style="list-style-type: none"> • Complete setup for measuring Joule's constant • Constant current source • Calorimeter to prevent heat loss • LCD Display • Online product tutorials and manual should be available to perform lab experiments by following step-by-step experimental procedure <p>It should have following technical specifications:</p> <p>Power Supply</p> <p>Input : 230V AC 10%, 50Hz</p> <p>Output : 0-10V / 0-1.5A</p> <p>Calorimeter</p> <p>Material : Copper Container</p> <p>Volume : 140 ml</p> <p>Heater Coil</p> <p>Material : Nichrome</p> <p>Resistance : 5Ω</p> <p>Thermometer</p> <p>Least count : 1°C</p> <p>Maximum range : 110°C</p> <p>It should be able to perform following experiments:</p> <p>To determine mechanical equivalent of heat (J) joule's constant by electrical method</p>

University reserved the right to enhance or mitigate the quantity without any notice.

Note: All the accessories (in all respect) which shall be required to run the machine/equipment has to be supplied along with the machine.