Institute of Engineering & Technology, Lucknow,Sitapur Road, Lucknow,
Uttar Pradesh - 226021

INVITATION LETTER

IET/TEQIP-III/2019/228-a

Package Code: TEQIP-III/2019/UP/ietl/237
Package Name: IET-TEQIP-ME-LAB-1

Current Date: 05-Jul-2019
Method: Shopping Goods

Sub: INVITATION LETTER FOR IET-TEQIP-ME-LAB-1

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	Item Name	Quantity	Place of Delivery	Installation Requirement (if any)
1	STEFAN BOLTZMAN APPARATUS	1	Institute of Engineering and Technology, Lucknow	
2	HEAT TRANSFER THROUGH NATURAL CONVECTION APPARATUS	1	Institute of Engineering and Technology, Lucknow	
3	HEAT TRANSFER THROUGH FORCED CONVECTION APPARATUS	1	Institute of Engineering and Technology, Lucknow	
4	EMISSIVITY APPARATUS	1	Institute of Engineering and Technology, Lucknow	
5	THERMAL CONDUCTIVITY OF INSULATING POWDER APPARATUS	1	Institute of Engineering and Technology, Lucknow	
6	HEAT TRANSFER THROUGH PIN FIN APPARATUS	1	Institute of Engineering and Technology, Lucknow	
7	DROP AND FILM WISE CONDENSATION APPARATUS	1	Institute of Engineering and Technology, Lucknow	
8	PARALLEL AND COUNTER	1	Institute of Engineering	

	FLOW HEAT EXCHANGER APPARATUS		and Technology, Lucknow	
9	SHELL AND TUBE HEAT EXCHANGER APPARATUS	1	Institute of Engineering and Technology, Lucknow	
10	UNSTEADY STATE HEAT TRANSFER APPARATUS	1	Institute of Engineering and Technology, Lucknow	
11	CRITICAL HEAT FLUX APPARATUS	1	Institute of Engineering and Technology, Lucknow	

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 III** 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, initialling, 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 **60**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:

Satisfactory Delivery, Installation and Acceptance - 100% of total cost

10. Liquidated Damages will be applied as per the below:
Liquidated Damages Per Day Min % :0.50
Liquidated Damages Max % : 10

11. All supplied items are under warranty of **36** months from the date of successful acceptance of items and AMC/Others is .

12. You are requested to provide your offer latest by **14:00** hours on **22-Jul-2019.**

13. Detailed specifications of the items are at Annexure I.

14. Training Clause (if any) **Yes**

15. Testing/Installation Clause (if any) **Yes**

16. Performance Security shall be applicable: **5%**

17. Information brochures/ Product catalogue, if any must be accompanied with the quotation clearly indicating the model quoted for.

18. Sealed quotation to be submitted/ delivered at the address mentioned below, **TEQIP-III , Institute of Engineering & Technology, Lucknow,Sitapur Road, Lucknow, Uttar Pradesh - 226021**

19. We look forward to receiving your quotation and thank you for your interest in this project.

(Authorized Signatory)

Name & Designation
COORDINATOR
TEQIP PHASE-III
Institute of Engineering &
Technology, Lucknow-21

Annexure I

Sr. No	Item Name	Specifications
1	STEFAN BOLTZMAN APPARATUS	➢ Hemisphere dia-160 mm(approx.). ➢ Jacket dia-200 mm (approx.). ➢ Test disc size - 20 mm dia. x 1.5 mm thickness. ➢ Water tank of sufficient capacity with a 1.5 kw immersion heater. ➢ Control Panel comprises of: • Volt meter: 0-100/200 volts. • Ammeter: 0-2A. • Dimmer stat: 0-240 volts, 2A. • Supply for heater. • Digital temperature indicator 0-200°C with 0.1°C least count using. • Chormelalumel thermocouples, provided with cold junction compensation.
2	HEAT TRANSFER THROUGH NATURAL CONVECTION APPARATUS	➢ Enclosure size - 200x200x500 mm ➢ Tube size= (Test cylinder) 32 mm (O.D.) x 400 cm. Long ➢ Nichrome heater (Cartridge type). ➢ Control Panel Comprising of: • Voltmeter - 100/200 V.AC. • Ammeter - 0 - 2 A.AC. • Dimmer stat - 0 - 2A. 240V. • Digital Temperature Indicator 0-300°C 1°C least count ChromelAlumel Thermocouples providing with cold junction compensation.
3	HEAT TRANSFER THROUGH FORCED CONVECTION APPARATUS	➢ Enclosure size - 75mm dia,500 mm length. ➢ Tube size= (Test cylinder) 32 mm (O.D.) x 400 cm. Long. ➢ Nichrome heater (Cartridge type). ➢ Control Panel Comprising of: • Voltmeter - 100/200 V.AC. • Ammeter - 0 - 2 A.AC. • Dimmer stat - 0 - 2A. 240V. • Centrifugal Blower with fan regulator. • Orifice meter and Manometer arrangement to measure flow rate. • Digital Temperature Indicator 0-300°C 1°C least count ChromelAlumel Thermocouples

		providing with cold junction compensation.
4	EMISSIVITY APPARATUS	➢ Test plate & Reference plate size - 160mm dia. (aluminium) ➢ Enclosure size-58 cm x 35 cm with one side of Perspex sheet. ➢ Heater-200v, 350-watt, Nichrome wire type Sandwiched between mica sheets. ➢ Control panel comprising of: • Voltmeter - 0-100/200V (2 no) • Ammeter - 0-2A (2 no) • Dimmer stat - 0 - 2A. 240V • Digital Temperature indicator 0-300°C with 1°C least count Using chromelalumel thermocouples. Provided with cold junction compensation.
5	THERMAL CONDUCTIVITY OF INSULATING POWDER APPARATUS	➢ Inner Sphere Diameter - 75 mm ➢ Outer Sphere diameter - 200mm ➢ Heater-rod type (200 watt) ➢ Control panel comprising of: • Voltmeter: 0-100 / 200 volts • Ammeter: 0-2A • Dimmer stat - 0 - 2A. 240V • Digital Temperature indicator 0-300°C with 1°C least count Using chromelalumel thermocouples. Provided with cold junction compensation.
6	HEAT TRANSFER THROUGH PIN FIN APPARATUS	➢ Fin - 15 mm diameter (approx.) 15 cm. Long (approx.). ➢ Duct size - 15 cm x 10 cm x 100cms long (approx.) ➢ Blower of suitable capacity with 1 H.P. single phase motor. ➢ Control panel comprising of: • Voltmeter - 0 - 100/200 volts • Ammeter - 0 - 2 amp. • Dimmer stat for heater 0-230 volts 2 amp. • Temperature indicator - 0 - 300°C with 1°C least count. Using chromelalumel thermocouples, provided with cold junction compensation. • Orifice meter on blower outlet with water manometer.

7	DROP AND FILM WISE CONDENSATION APPARATUS	➢ Steam generator of suitable capacity with 3 kw heater (kettle heater). ➢ Copper tubes: With Natural finish and Polished surface finish. ➢ Copper tube: 25 mm diameter x 150 mm long ➢ Temperature control: by PID controller ➢ Temperature indicator 0-300°C channels with cold junction compensation. ➢ Thermocouples: 5 Nos. on each member. ➢ Pressure gauge: 0-2 kg/cm^2 ➢ Rota meter range: 0-10 LPM
8	PARALLEL AND COUNTER FLOW HEAT EXCHANGER APPARATUS	➢ System: Water to Water, Concentric tube type. ➢ Heat Exchanger: Length 1 m (approx.) ➢ Outer Tube: Material Stainless Steel. ID 27.5mm, OD 33.8mm (approx.) ➢ Inner Tube: Material Stainless Steel, OD 12.7mm (approx.) ➢ Water Flow Measurement: Rota meters (2 Nos) one each for cold & hot fluid. ➢ Hot Water Tank: Made of Stainless Steel. Insulated with ceramic fiber wool. ➢ Hot Water Circulation: 0.5 HP mono block Pump ➢ Heaters: 2 kw Nichrome wire heater (1 no)
9	SHELL AND TUBE HEAT EXCHANGER APPARATUS	➢ Shell • Material: Mild Steel Material • I.D.: 208mm • Thickness: 5mm • Length: 500mm • 25% cut baffles at 100mm distance - 4 Nos. ➢ Tubes • Material: Copper • I.D.: 11 mm • O.D.: 12 mm • Length of Tubes: 500mm • Number of Tubes: 30mm ➢ Measuring Tank: 300x300 x 300mm ➢ Control Panel Comprising of: • Digital Temperature Controller: 0-199.9 C (For

		Hot Water Tank). • Digital Temperature Indicator: 0-199.9 C with Multi-Channel scanner. • Temperature Sensors: RTD PT-100 type. ➢ Water Flow Measurement: Rota meters (2 No's) one each for cold & hot fluid. ➢ Hot Water Tank: Made of Stainless Steel. Insulated with ceramic fiber wool. ➢ Hot Water Circulation: 0.5 HP mono block Pump ➢ Heaters: 2 kW Nichrome wire heater (1 no.)
10	UNSTEADY STATE HEAT TRANSFER APPARATUS	➢ Water Bath: Material: Stainless Steel ➢ Capacity: 1 Litre (approx.) ➢ Heater: Nichrome Wire Heater 500W. ➢ Test Piece: Material: copper (50 mm dia,40 mm l) ➢ Temp. Sensor: k type ➢ Control Panel: Digital Temp. Indicator (0-200°C) ➢ ON/OFF Switch, Mains Indicator etc.
11	CRITICAL HEAT FLUX APPARATUS	➢ Transparent Glass Container: 150 mm Dia. ➢ Control panel comprising of: • Voltmeter - 0 - 100/200 volts • Ammeter - 0 - 2 amp • Dimmer stat 0-4A, 0-260 V. ➢ Heater-Nichrome heaters bend type. Temperature indicator 0-300°C channels with cold junction compensation.

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)
Total Cost							

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. _____