

# TENDER NOTICE

INTERNATIONAL ISLAMIC UNIVERSITY ISLAMABAD (IIUI) invites sealed bids from the Original Manufacturer / Authorized Distributors (With Valid Authorization/Distribution Certificate)/ Suppliers registered with Income Tax and Sales Tax Departments and who are on **Active Taxpayers List (ATL)** of the Federal Board of Revenue for the Purchase of Lab Equipment/Items under its approved Mega PC-I titled: "*Expansion and Upgradation of International Islamic University Islamabad*" for the following Departments/Centers:

Sr. No.	Name of Department/Centre	Items' Description	Tender Submission Date & Time (On OR Before)	Tender Opening Date & Time	Tender Fee (Rs.)
1.	Procurement of Lab Equipment for "Department of Electrical Engineering (DEE), FET (Male)"	Branded Desktop Computers (Core i7, 11 <sup>th</sup> Gen.), Digital Oscilloscopes, Function Generators, Wireless Communication Trainers, Antenna Motorized Trainers, Zed Board, Raspberry Pi, Arduino Board, Arduino Starter Kit.	24-11-2021 10:30 A.M	24-11-2021 11:00 A.M	3,000/-
2.	Procurement of Lab Equipment for "Department of Mechanical Engineering (DME), FET (Male)"	Accelerometer, Force Transducer, Impedance Head, Impact Hammer, Shaker, Modal Excitation System, Stinger, Data Acquisition System, Modal Analysis Software.			3,000/-
3.	Procurement of Lab Equipment for "Department of Civil Engineering (DCE), FET (Male)"	Current Meter, Metacentric Height, Hydraulic Jack, Shear Strength Machine (Seismograph), Centrifugal Bitumen Extractor, Electric Hoist Crane, LVDTs, Reaction Frame (Shear Reaction Frame), Digital Data Acquisition System, Digital Vernier Caliper, Pitot Tube, Oven, Resistivity Meter.			3,000/-
4.	Procurement of Lab Equipment for "Advanced Electronics & Photovoltaic Engineering (CAEPE)"	Compact Precision Screen Printing Film Coater, Long Tape Casting Coater, Broad Beam Metal Implanter, CZ Crystal Grower System, 1200°C Quartz Tube Furnace, Economical 4" Mask Aligner, Heavy Duty (12") Precision Grinding Polishing Machine, Consumables Items (Wafers, Chemicals, Gases, Glass Ware, Source Material, Boats, Crucibles, Components etc.)			3,000/-

02. Bidding Documents, containing detailed Terms & Conditions etc. can be downloaded from PPRA & IIUI websites.

03. Sealed bids, prepared in accordance with the instructions in the bidding documents, must reach on OR before the above date & time at the following address:

Dy. Director (P&S)  
Room No. 213, 2<sup>nd</sup> Floor, Admin Block, New Campus, Sector H-10  
International Islamic University Islamabad.  
Tel: 051-9019255

04. Bids will be opened by the **Bid Opening Committee** as per above schedule/date & time in the **COUNCIL HALL, Admin Block, Sector H-10, New Campus, International Islamic University Islamabad** in the presence of bidders/their representative(s) who may like to attend the bid opening.

05. International Islamic University Islamabad reserves the right to accept or reject any or all bid(s) in terms of Rule-33 of Public Procurement Rules.2004.

**Project Director**  
Project Titled: *Expansion and Upgradation of IIUI*  
International Islamic University Islamabad. Tel: 051-9019241



**INTERNATIONAL ISLAMIC UNIVERSITY, ISLAMABAD**

Purchase & Store Section, Admin Block, New Campus, Sector H-10, Islamabad.

Tel: 051-9019255 Fax: 051-9258073

No. 17/11/2019/P&S- 8916

## "TERMS AND CONDITIONS"

1. The bids are invited as Single Stage – Two envelopes procedure of PPRA.
2. All clauses of the terms and conditions shall be binding on the bidder.
3. Original Manufacturer / Authorized Distributors (*with valid authorization / distribution certificate*) / Suppliers registered with Income Tax, Sales Tax Department and who are on Active Taxpayers List (ATL) of FBR, are eligible to participate in tender.
4. The bid should be submitted in sealed envelopes (***marking as Technical Bid & Financial Bid***) up to the specified deadline and the Technical bids will be opened as per schedule in the presence of available bidders or their representatives who may like to attend the bid opening.
5. The envelope should be addressed to:

Dy. Director (P&amp;S)

International Islamic University, Islamabad

Room No. 213, 2<sup>nd</sup> Floor, Admin Block, New Campus, Sector H-10

Islamabad.

Tel: 051-9019255

6. The envelopes shall clearly bear the words **Technical & Financial Bids** and accompanied by identification worded as Tender For “\_\_\_\_\_ (*as given at the Title Page of this document*).
7. The bid form (BoQs) must be duly filled in, stamped and signed by the authorized representative of the bidder.
8. Installation, testing, commissioning and training etc. of supplied Lab Equipment(s) is the sole responsibility of local vendor.
9. Delivery Time (**Maximum of 120 Days**):

- i) For items on FOR basis: After issuance of Supply/Purchase Order
- ii) For items on CPT basis: After establishment of LC / TT *(As the case may be)*

10. The bid proposal(s) should be inclusive of:

- i. All FREIGHT, PACKAGING CHARGES (Items deliverable at International Islamic University, Islamabad on "CPT Basis" as per BoQs Format)
- ii. All taxes and duties prescribed by the government from time to time, on "FOR Basis" as per BoQs Format (Items deliverable to International Islamic University, New Campus, Sector H-10 Islamabad).

11. The Payment Terms shall be:

- a) INCOTERMS: CPT, Islamabad

- b) **Payment Terms:** 100% LC at sight with following terms & conditions:

- Payment Terms: 100% LC at sight with following terms and conditions:
- i. 10% of the total invoice amount to be deposited by Local Supplier within 10 days after issuance of Purchase Order as **Performance Security** in the form of CDR in favor of "International Islamic University, Islamabad" and will be released after successful delivery and test run of ordered equipment at designated place in IIUI. In case of failure, Performance Security will be forfeited.
  - ii. 10% of the total invoice amount in the form of CDR in favor of "International Islamic University, Islamabad" to be deposited by Local Supplier for the Warranty Period after delivery and test run of ordered equipment as **Guarantee Money** covering our risk for the **Warranty Period**.

OR



- c) **Payment Terms: 100% Advance Payment through TT** with following terms & conditions:
- i. 110% of the total invoice amount to be deposited by Local Supplier within 10 days after issuance of Purchase Order as **Security and Performance Guarantee** in the form of CDR in favor of "International Islamic University, Islamabad" and will be released after successful delivery of ordered equipment at designated place in IIUI.
  - ii. 10% of the total invoice amount in the form of CDR in favor of "International Islamic University, Islamabad" to be deposited by Local Supplier for the Warranty Period after delivery of ordered equipment as **Guarantee Money** covering our risk for the **Warranty Period**.
  - d) For FOR quoted items: payment will be made after successful delivery of items, installation and inspection. 10% of the total value of the Purchase Order will be withheld by the IIUI from the payment of successful bidders on FOR Basis supplied items for the warranty period.
12. For the CPT quoted items; local vendor shall be the responsible for clearance of Lab Items from custom authorities and all expenses/expenditures of clearance will be paid by them. Transportation to deliver the equipment and loading/unloading at designated place in IIUI shall also be the responsibility of the local vendor. The IIUI will only assist for clearance of shipment(s) from Custom Authorities.
  13. After opening of Technical proposals / bids, International Islamic University Islamabad will examine the bids for completeness as per tender document's Terms & Conditions AND Technical Specifications as per BoQ. The financial bids of only technically qualified firms shall be opened. Financial Bids of technically non qualified firms shall be returned unopened.
  14. Purchase order (s) will be awarded to the lowest evaluated and technically recommended bidder (s) on the basis of item wise / subtotal wise / grand total wise according to the nature of BoQs/Compatibility requirements.
  15. Procedure of open competitive bidding shall be: **Single Stage Two Envelope Procedure**
  16. The finding(s) of the Evaluation Committee shall be final for which clarification can be sought in terms of Rule-33 of PPRA Rules 2004.
  17. **If the vendor fails to deliver the goods / services to International Islamic University, Islamabad or delays the supply without a cogent reason, the following actions will be taken to safeguard IIUI interest:**
    - a. Late Delivery Charges will be charged @ 02% per month of the total Purchase Order value;
      - i. For CPT quoted items: LD Charges will be deducted from 10% Security submitted by local vendor.
      - ii. For FOR quoted items: LD Charges will be deducted from the invoice of firm concerned.
    - b. If the vendor fails to deliver the goods / services during the extended period (*if allowed*) then the purchase / work order may be cancelled, Earnest money may be forfeited and the IIUI also reserves the right to blacklist the defaulter.
  18. If the delivered goods / services are not according to the required quality standards / specifications, the same shall be liable to be rejected after inspection. The bidder/vendor will be required to REPLACE as per requirements mentioned in our BoQs at no cost to the IIUI, otherwise the purchase / work order will be cancelled after due date with confiscation of earnest money AND bidder will bear all cost and expenses thereof including actions proposed above.
  19. All prices should be valid for at least **120 days**. Withdrawal or any modification of the original offer within the validity period shall entitle IIUI to forfeit the earnest money and put a ban on such vendor for participation in IIUI tenders / works.
  20. It is the sole responsibility of the agent / supplier / manufacturer / vendor to comply with all the applicable laws.
  21. Any dispute between the supplier and the IIUI, which cannot be settled amicably within 30 days after one party receives request of the other party shall be settled in accordance with the provisions of the Arbitration Act 1940. The President, IIUI shall appoint any of the Vice Presidents as Sole Arbitrator whose decision shall be and binding on both parties.

GA Jafar



22. The IIUI reserves the right to modify the quantities of goods / services at any time before the award of purchase / work order and that shall not invalidate the quoted rates, terms & conditions.

**23. Earnest Money:**

The bidder is required to furnish in form of "CDR" equivalent to 2% of the total Bid price (in PKR) as Earnest Money in favor of "International Islamic University Islamabad". Any bid not accompanied by the Earnest Money shall be rejected without any right of appeal. The earnest money shall be enclosed with the Technical proposal in sealed envelope and its particulars, like issuing bank name and CDR number with date shall only be mentioned on the envelope without mentioning the amount. Action as per Clause 17(b) shall be taken in case the particulars mentioned on the envelope are found incorrect.

24. The bidder is also required to furnish Company Profile, Client List and Detail of similar Projects/Works along with the technical proposal.

**25. International Islamic University Islamabad reserves the rights to accept or reject the bid/s, if;**

- Received without earnest money.
- Received later than the date and time fixed for tender submission.
- The tender is unsigned/ unstamped.
- The offer is ambiguous.
- The offer is conditional.
- Offer is made by the unauthorized agent/ supplier of the original equipment manufacturer.
- The offer is from a firm, which is black listed by any Govt. Office/Public Sector Organization.
- Any unsigned / ambiguous erasing, cutting / overwriting etc. is made.
- Received without Company Profile, Client List and Detail of similar Projects/Works with evidence.
- Without Guarantee / Warrantee of the quoted equipment(s). *(Minimum twelve (12) months after the Goods, or any portion thereof as the case may be, have been delivered to and accepted*

26. The bidder should furnish a **CERTIFICATE** on judicial STAMP PAPER worth Rs. 100 as worded below in token of acceptance of all the terms and conditions of the tender. Otherwise, the tender will not be considered under any circumstances.

I / We

- **Company / Vendor Name:** \_\_\_\_\_
- **Postal Address:** \_\_\_\_\_
- **Tel. No:** \_\_\_\_\_ **Mob No.** \_\_\_\_\_
- **NTN#:** \_\_\_\_\_ **GST#:** \_\_\_\_\_

The undersigned certify that our above named Firm/Company is not blacklisted by any Government or Semi Government Department in Pakistan and the terms and conditions as contained in this document, viz "**Terms and Conditions**" are accepted unconditionally and **Special Conditions** as part of Supply Order are also accepted unconditionally.

For CPT quoted items: I/we shall be responsible to deliver (with transportation, loading/unloading) all original equipment(s) along-with accessories/manuals etc. (as per Packing List) at designated place(s) in IIUI after the clearance/release of equipment(s) from custom authorities on our expenses.

**Sign & Stamp**

**Note:**

1. Please make a copy of the BoQ and mention the quoted make, model, country of origin and detailed specifications without mentioning quoted rate for technical evaluation. Supporting literature of the quoted model must be attached for verification & technical evaluation of the required specification by the bid evaluation committee. In case of any clash found between the quoted model and the literature model, the item/bid may be rejected. Mark it as Technical Proposal.
2. Quote the rates on our BoQs for financial evaluation, place in sealed envelope and mark "Financial Proposal".
3. PRICES quoted in different currencies on CPT basis will be evaluated after converting them into PKR (local currency) at the EXCHANGE RATE prevailing at the State Bank of Pakistan on the date of Opening of Bid(s)
4. Terms & Conditions should be attached with the Technical proposal; otherwise your tender/bid(s) may lead to rejection.
5. All pages of BoQs and Terms and Conditions should be signed and stamped by the authorized person / bidder.

Handwritten signatures and initials at the bottom of the page.



## SPECIAL CONDITIONS

### 1. Specifications and Standards:

1.1 The Supplier shall ensure that the Goods and Related Services comply with the technical requirements.

### 2. Packing and Documents:

2.1 The Supplier shall provide such packing of the Goods as is required to prevent their damage or deterioration during transit to their final destination as indicated, during transit, the packing shall be sufficient to withstand, without limitation, rough handling and exposure to extreme temperatures, salt and precipitation, and open storage. Packing case size and weights shall take into consideration, where appropriate, the remoteness of the Goods final destination and the absence of heavy handling facilities at all points in transit.

2.2 The Packing marking, and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided for in the Purchase Order, including requirements, if any and in any other instructions ordered by the Purchaser.

### 3. Transportation:

3.1 Unless otherwise specified, responsibility for arranging transportation of the Goods shall be in accordance with the specified Incoterms.

### 4. Warranty:

4.1 The Supplier warrants that all the Goods are new, unused, and of the most recent or current models, and that they incorporate all recent improvements in design and materials, unless provided otherwise by the Purchaser.

4.2 Unless otherwise specified in these conditions, the warranty shall remain valid for **twelve (12) months** after the Goods, or any portion thereof as the case may be, have been delivered to and accepted at the final destination indicated in these conditions or for eighteen (18) months after the date of shipment, from the port, or place of loading in the country of origin, whichever period concluded earlier.

4.3 The Purchaser shall give notice to the Supplier stating the nature of any such defects together with all available evidence thereof, promptly following the discovery thereof. The purchaser shall afford all reasonable opportunity for the Supplier to inspect such defects.

4.4 Upon receipt of such notice, the Supplier shall, **within the 30 days** expeditiously repair or replace the defective Goods or parts thereof, at no cost to the Purchaser (IIUI).

Handwritten signatures and initials at the bottom of the page.



# TENDER DOCUMENT

## Procurement of Lab Equipments/Items for “Department of Electrical Engineering, (DEE), FET (Male)”

Item's Description	Tender Submission Date & Time (On OR Before)	Tender Opening Date & Time
Branded Desktop Computers (Core i7, 11 <sup>th</sup> Gen.), Digital Oscilloscopes, Function Generators, Wireless Communication Trainers, Antenna Motorized Trainers, Zed Board, Raspberry Pi, Arduino Board, Arduino Starter Kit.	24-11-2021 10:30 A.M	24-11-2021 11:00 A.M



**INTERNATIONAL ISLAMIC UNIVERSITY ISLAMABAD**  
**P&S Section, New Campus, Sector H-10, Islamabad.**  
 Tel - 051-9019255 Fax 051-9258073

*Tender Document Price : Rs. 3,000/-*



# BoQs for the Supply of Lab Equipment for Department of Electrical Engineering (DEE).

## FET

S. No	Equipment Name	BoQs/Specifications	Qty.	Make/ Model & Country of Origin	FOR Price	
					Unit Price	Total Price
CAD LAB						
1.	Personal Computers	<ul style="list-style-type: none"><li>➤ Branded Desktop Computers</li><li>➤ Processor Intel ® Core i7, 11th Generation, Quad core or Higher</li><li>➤ RAM 16 GB or higher</li><li>➤ Hard Drive HDD and SSD</li><li>➤ Network Adapter, USB key board, USB Mouse</li><li>➤ 17" LED Monitor or higher</li></ul>	60			
COMMUNICATION LAB						
1.	Digital Oscilloscopes	Digital Storage Oscilloscope, Dual channel, Frequency 100MHz, Sampling rate 500MS/s, Display 7 inch Color, Record Length 20K points, Input coupling AC/DC along with ±100A AC/DC Dual Smart Current Probe	02			
		Digital Oscilloscope, Dual channel, Frequency 25MHz, Sampling rate 250MS/s, compatible with above modules	20			
2.	Function Generators	External Function Generator, Dual Channel, Sine, Square, Triangle, Ramp, Pulse, TTL etc., Frequency from 1Hz to 10MHz, DC Offset from -10V to +10V, compatible with above modules	20			
3.	Wireless Communication Trainers	ADALM-PLUTO Production - Software-Defined Radio Active Learning Module (RF Coverage upto 4 GHz, Supports Half and Full Duplex Modes, Can be interfaced with MATLAB/Simulink) or equivalent	05			
		Mobile Phone Learning Module for learning of preferably 4G or else 3G based Mobile Phone Hardware/Systems, GSM Module to practice AT commands, GPS Module to Practice GPS Operations, IoT Wireless Communications Training Module	05			
		TMDSLCDK138 OMAP-L138 development kit (LCDK) with XDS100v2 Jtag emulator	05			
ANTENNA LAB						
1.	Antenna Motorized Trainers	<ol style="list-style-type: none"><li>1. C-Band Transmitter Center Frequency: 5150MHz Output Power: 10 dBm RF source: Dielectric Resonator Oscillator</li><li>2. C-Band Receiver Center Frequency: 5150MHz Band width: 50MHz Sensitivity: -30dBi Motor rotation: 0° to 180° with 5° step</li><li>3. Pyramidal Horn Antenna Gain: 7.42dBi HP Beam width: 62 Polarization: Linear°</li><li>4. Yagi-Uda Antenna Driven elements: Four element array Polarization: Linear</li><li>5. Micro strip Patch Antenna Gain: 6dBi Effective Angle: 125°</li><li>6. Micro strip Array Antenna Gain: 12dBi Patch Elements: 4</li><li>7. Parabolic Reflector Antenna Aperture efficiency: 50 %Diameter: 31 cm, Directivity: 21.5dBi, Feed: Dipole disk feed</li><li>8. Helical Antenna AR: 1.1 Directivity: 14.6HPBW: 37.5°, FNBW: 83°</li><li>9. Di-pole Antenna Directivity: 1.64, Impedance: 50 Ohm Pattern: Omni directional Polarization: Linear</li><li>10. Double Di-pole Array Antenna Directivity: 7.5 dBi Impedance: 50 Ohm Polarization: Linear</li><li>11. Double Stub Tuner Length: 7cm, Attenuator Attenuation: 30dB Tolerance: ± 0.5dB Peak Power: 2 watts</li><li>12. Attenuator Attenuation: 30dB Tolerance: ± 0.5dB Peak Power: 2watts</li></ol>	01			
		Basic Analog Trainer with: <ol style="list-style-type: none"><li>1. Fixed DC Power Supplies: +5V, +9V, +12V, +18V, +24V</li><li>2. Fixed DC Power Supplies: -5V, -9V, -12V, -18V, -24V</li></ol>	08			



		3. Variable DC Power Supplies: 0 ~ +24V 4. Variable DC Power Supplies: 0 ~ -24V 5. AC Supply: Sine Wave AC source, with variable Frequency and Amplitude 6. AC Supply: Square Wave AC source, with variable Frequency and Amplitude 7. Built-in Display: Digital display for measuring voltage, current (DMM) 8. Breadboard				
		Basic Digital Trainer with: 1. Solderless breadboard 2. DC power supply (1) Variable DC power: Positive output voltage: 0 ~ +15V Negative output voltage: 0 ~ -15V (2) Fixed power supply: Positive output voltage: +5V Negative output voltage: -5V Max. output current: 100mA All DC power supplies with short circuit protection. 3. Function generator with frequency ranges, Amplitude output, Sine wave, Triangle wave, Square wave, TTL mode: +5V 4. Digital voltmeter 5. 7 segment LED displays 6. LED displays 7. Data switches	08			

### DSP LAB

1.	Zedboard	PYNQ-Z2 board + Advanced Accessories 1M1-M000127DVA containing ZYNQ XC7Z020-1CLG400C	06			
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### DIGITAL ELECTRONICS LAB

1.	Raspberry Pi	Raspberry Pi 400 with full accessories	05			
2.	Arduino Board	ARDUINO NANO 33 IOT	05			
		ARDUINO NANO 33 BLE SENSE	05			
3.	Arduino Starter Kit	ARDUINO STARTER KIT containing 1 Arduino Uno, 1 USB cable, 1 Breadboard 400 points, 70 Solid core jumper wires, 1 Easy-to-assemble wooden base, 1 9v battery snap, 1 Stranded jumper wires (black), 1 Stranded jumper wires (red), 6 Phototransistor, 3 Potentiometer 10kOhms, 10 Pushbuttons, 1 Temperature sensor [TMP36], 1 Tilt sensor, 1 alphanumeric LCD (16x2 characters), 1 LED (bright white), 1 LED (RGB), 8 LEDs (red), 8 LEDs (green), 8 LEDs (yellow), 3 LEDs (blue), 1 Small DC motor 6/9V, 1 Small servo motor, 1 Piezo capsule [PKM17EPP-4001-B0], 1 H-bridge motor driver [L293D], 1 Optocouplers [4N35], 2 Mosfet transistors [IRF520], 5 Capacitors 100uF, 5 Diodes [1N4007], 3 Transparent gels (red, green, blue), 1 Male pins strip (40x1), 20 Resistors 220 Ohms, 5 Resistors 560 Ohms, 5 Resistors 1 kOhms, 5 Resistors 4.7 kOhms, 20 Resistors 10 kOhms, 5 Resistors 1 MOhms, 5 Resistors 10 MOhms	05			

**Note: Required items must be of the same specs as mentioned above or Equivalent.**

For any technical queries; please contact:

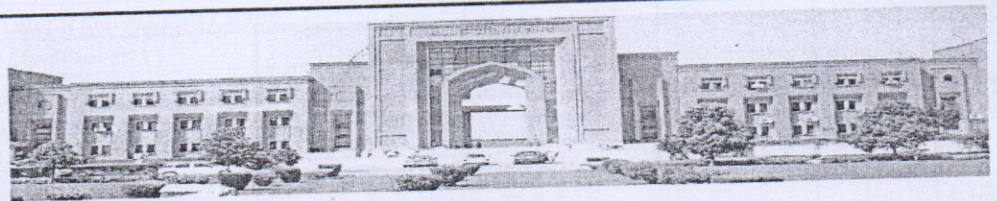
**Dr. Suheel Abdullah Malik, Chairman, DEE:** [suheel.abdullah@iiu.edu.pk](mailto:suheel.abdullah@iiu.edu.pk) (051-9019491/9019581)



# TENDER DOCUMENT

## Procurement of Lab Equipments/Items for "Department of Mechanical Engineering, (DME), FET"

Item's Description	Tender Submission Date & Time (On OR Before)	Tender Opening Date & Time
Accelerometer, Force Transducer, Impedence Head, Impact Hammer, Shaker, Modal Excitation System, Stinger, Data Acquisition System, Modal Analysis Software.	24-11-2021 10:30 A.M	24-11-2021 11:00 A.M



**INTERNATIONAL ISLMAIC UNIVERSITY ISLAMABAD**  
**P&S Section, New Campus, Sector H-10, Islamabad.**  
**Tel - 051-9019255 Fax 051-9258073**

*Tender Document Price : Rs. 3,000/-*



# BoQs for the Supply of Lab Equipment for Department of Mechanical Engineering (DME), FET

S. No	Equipment Name	BoQs/Specifications	Qty.	Make/ Model & Country of Origin	CPT Price	
					Unit Price	Total Price
1.	Accelerometer	Piezoelectric IEPE Accelerometer, side connector, 100mV/g, with TEDS, 1 slot, with cable	60			
		Miniature Triaxial Piezoelectric IEPE Accelerometer, with TEDS, with cables	15			
		Accelerometer calibrator, hand-held, battery powered.	01			
		Micro wax type 7835, white beeswax for quick mounting of accelerometer	30			
2.	Force Transducer	Force Transducer IEPE, 2200 N tensile to 2200 N compressive range, with cable	04			
		Force Transducer IEPE, 44 N tensile to 44 N compressive range, with cable	04			
		Force Transducer IEPE, 220 N tensile to 220 N compressive range, with cable	04			
		Force Transducer IEPE, 2200 N tensile to 2200 N compressive range, with cable	04			
		Force Transducer IEPE, 2200 N tensile to 22 kN compressive range, with cable	04			
3.	Impedance Head	Impedance Head, tapped 10-32 UNF platform with cables	08			
4.	Impact Hammer	Miniature Impact Hammer, 22.7 mV/N, includes head extender, cable included	01			
		Impact Hammer, 1.1 mV/N, cable included	01			
		Impact Hammer, 2.3 mV/N, cable included	01			
		Impact Hammer, 11.4 mV/N, cable included	01			
		Impact Hammer, 22.7 mV/N, cable included	01			
		Modal Sledge Hammer, 1 Lb Head, cable included	01			
		Modal Sledge Hammer, 3 Lb Head, cable included	01			
		Modal Sledge Hammer, 12 Lb Head, cable included	01			
5.	Shaker	200N modal Excitation System with power amplifier	02			
		400N Modal Excitation System with power amplifier	02			
		650N Modal Excitation System with power amplifier	02			
		1000N Modal Excitation System with power amplifier	02			
6.	Modal Excitation System	Small Lateral modal exciter stand	02			
		Signal Conditioner	02			
		Charge Amplifier	02			
7.	Stinger	3Push/Pull steel stinger L 500mm D 3.5mm one 3.5 collet chuck incl 3 adaptors 3.5mm to 10-32 UNF	01			
		5 Push/Pull steel stinger L 200 D 3,5	01			
		3 Push/Pull steel stinger L 500 D 2,5 mm, one collet chuck incl.	01			
		5 Push/Pull steel stingers L 200mm D 2,5	01			
8.	Data Acquisition System	11 slot Mainframe LAN-XI w. GPS	01			
		12-ch Input Module LAN-XI 25.6kHz (CCLD, V)	10			
		6-ch Input Module LAN-XI 51.2kHz (Mic, CCLD, V)	01			
		10/100/1000 Managed Gigabit Switch with PoE	01			
9.	Modal Analysis Software	Modal testing, data Acquisition and Analysis software with maintenance and support agreement	01			

Note: Required items must be of the same specs as mentioned above or Equivalent.

For any technical queries; please contact:

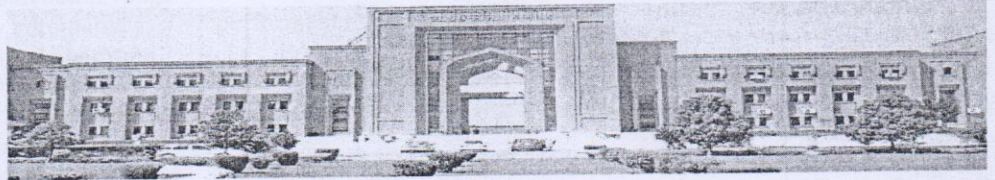
Engr. Dr. Syed Athar Masood, Chairman, DME: [athar.masood@iiu.edu.pk](mailto:athar.masood@iiu.edu.pk) (051-9019497/9019775)



# TENDER DOCUMENT

## Procurement of Lab Equipments/Items for "Department of Civil Engineering, (DCE), FET"

Item's Description	Tender Submission Date & Time (On OR Before)	Tender Opening Date & Time
Current Meter, Metacentric Height, Hydraulic Jack, Shear Strength Machine (Seismograph), Centrifugal Bitumen Extractor, Electric Hoist Crane, LVDTs, Reaction Frame (Shear Reaction Frame), Digital Data Acquisition System, Digital Vernier Caliper, Pitot Tube, Oven, Resistivity Meter.	24-11-2021 10:30 A.M	24-11-2021 11:00 A.M



**INTERNATIONAL ISLAMIC UNIVERSITY ISLAMABAD**  
**P&S Section, New Campus, Sector H-10, Islamabad.**  
 Tel - 051-9019255 Fax 051-9258073

*Tender Document Price : Rs. 3,000/-*



### 3. BoQs for the Supply of Lab Equipment for Department of Civil Engineering (DCE), FET

S. No	Equipment Name	BoQs/Specifications	Qty	Make/ Model & Country of Origin	FOR Price	
					Unit Price	Total Price
1	Current Meter	It is widely used for measurements of the flow velocity and high flow velocity in river, lakes, reservoirs, pressure conduits and spillway of hydropower stations: ➤ Measuring Range: 0.04-10.0m/s ➤ Measuring Range: 0.015-3.5m/s ➤ Water Depth: 0.05-3m	01			
2	Metacentric Height	➤ Dimensions: Net: 650 mm x 450 mm x 350 mm; packed: 0.11 m <sup>3</sup> ➤ Weight: Nominally Net: 5 kg; packed: 9 kg ➤ Water tank: Moulded plastic, 600 mm x 400 mm x 120 mm ➤ Floating pontoon: 360 mm x 203 mm x 76 mm ➤ Angular tilt of pontoon: Nominally 8° each side of vertical center line ➤ Working height of sail: 240 mm ➤ Adjustable sail weight: 525 g Total weight of floating assembly: Nominally 3.2kg	01			
3.	Hydraulic Jack	➤ Capacity: 10 Ton (minimum) ➤ Double-Acting Jack with control valve for pressure ➤ Stroke: 300 mm (12 inches) ➤ Easily readable, highly visible and Calibrated Gauge ➤ Pump ➤ Mount for vertical and horizontal placement of the Jack ➤ Provided with appropriate accessories	01			
4	Shear Strength Machine (Seismograph)	➤ 24-Bit Delta-Sigma A/D conversion ➤ 3,200 Channels on 32 lines ➤ 2D and 3D operation ➤ Wide dynamic range ➤ Fully automated system performance tests ➤ Intuitive operation ➤ 3D Operation ➤ Continuous recording ➤ Voltage: Compatible to 220 V Accessories: Complete seismograph pack with software, Main cables, 48 geophones, shear wave velocity generator, connecting cables and accessories, extension cables, battery pack with charger.	01			
5	Centrifugal Bitumen Extractor	Centrifuge extractor is used for determining the percentage of bitumen in bituminous mixtures. ➤ 3000 g capacity centrifuge extractor ➤ Speed control up to 3600 rpm ➤ fast stop bowl rotation	01			
6	Electric Hoist Crane	The crane is used for shifting heavy test samples and testing equipment's with in the premises of laboratory ➤ Capacity up to 3 Tons ➤ Provided with appropriate accessories ➤ Complete assembly ➤ Electrically operated machine	01			



7	<b>LVDTs</b>	<p>An LVDT is an electromechanical device used to convert mechanical motion or vibrations, specifically rectilinear motion, into a variable electrical current, voltage or electric signals, and the reverse.</p> <ul style="list-style-type: none"> <li>➤ Range (100 mm) <math>\pm 1.0''</math> (<math>\pm 25\text{mm}</math>)</li> <li>➤ Linearity error (% F.S.) <math>&lt; \pm 0.5 / \pm 0.25 / \pm 0.1</math></li> <li>➤ Spring force 7.5 lb.</li> <li>➤ Frequency Response 10 Hz.</li> <li>➤ Least count reading 0.001 mm</li> <li>➤ Operating temperature range <math>-10^{\circ}\text{C}</math> to <math>+60^{\circ}\text{C}</math></li> <li>➤ Cable BDI RC-187</li> <li>➤ Able to be used with Shear Reaction frame</li> </ul>	01			
8.	<b>Reaction Frame (Shear Reaction Frame)</b>	<ul style="list-style-type: none"> <li>➤ Length = 4 m, Width = 4 m, Height = 4 m</li> <li>➤ Vertical load capacity = 150 Ton</li> <li>➤ Lateral Load = 100 Ton</li> <li>➤ Hydraulic Jack Capacity 100Ton, Travel 200mm c/w Hand operated Pump, Digital Display of Load and hose suitable for shear frames testing.</li> <li>➤ Hydraulic Jack Capacity 50Ton, Travel 200mm c/w Hand operated Pump, Digital Display of Load and hose suitable for shear frames testing.</li> </ul>	01			
9.	<b>Digital Data acquisition System</b>	<ul style="list-style-type: none"> <li>➤ Capacity of 8 to 12 Channels</li> <li>➤ Able to record static and cyclic tests</li> <li>➤ Must be compatible for load cell, strain gauges, strain-rosettes, LVDTs and many other bridge sensors</li> <li>➤ Digital load cells with capacity up to 10 Tons</li> <li>➤ Provided with compatible software to record and control the data.</li> <li>➤ Provided with instruction manual</li> <li>➤ Set of strain gauges and strain rosettes along with accessories for installation</li> </ul>	01			
10.	<b>Digital Vernier Caliper</b>	<ul style="list-style-type: none"> <li>➤ 0-150 mm</li> <li>➤ Digital</li> </ul>	10			
11.	<b>Pitot Tube</b>	<ul style="list-style-type: none"> <li>➤ Acrylic tube:</li> <li>➤ Inside diameter: Minimum 30 mm.</li> <li>➤ Length: Minimum 500 mm</li> <li>➤ Total head tube diameter: 3 mm.</li> <li>➤ Manometer Inclination: 1:10, 1:5, 1:2 and 1:1.</li> <li>➤ Scale: 0-450 x 1 mm graduation.</li> <li>➤ It is to be used with Hydraulics Bench</li> </ul>	01			
12.	<b>Oven</b>	<ul style="list-style-type: none"> <li>➤ Nominal cap. 100 Liters</li> <li>➤ Max. temperature <math>150^{\circ}\text{C}</math></li> <li>➤ digital thermo regulator/indicator</li> <li>➤ 230 V, 50-60 Hz, 1 ph</li> </ul>	01			
13.	<b>Resistivity Meter</b>	<ul style="list-style-type: none"> <li>➤ Geoelectrical mapping up to 300m depth to detect underground water</li> <li>➤ On the boot screen, the instrument will show 6 options: Single Frequency, Three Frequency, Profile Survey, File Explorer, Setting and Service.</li> <li>➤ Colorful geoelectrical mapping 300M deep underground water detector</li> <li>➤ 300m resistivity mapping-with-one-button water detection</li> <li>➤ Automatic Form curve graph and profile map from date.</li> <li>➤ Adopt latest noise detecting element, sounds clear.</li> </ul>	01			

**Note: Required items must be of the same specs as mentioned above or Equivalent.**

For any technical queries; please contact:

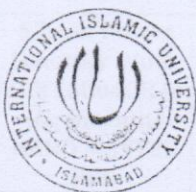
**Dr. Khanzaib Jadoon, Chairman, DCE:** [khanzaib.jadoon@iiu.edu.pk](mailto:khanzaib.jadoon@iiu.edu.pk) (051-9019404/9019962)



# TENDER DOCUMENT

## Procurement of Lab Equipments/Items for "Centre for Advanced Electronics & Photovoltaic Engineering (CAEPE)"

Item's Description	Tender Submission Date & Time (On OR Before)	Tender Opening Date & Time
Compact Precision Screen Printing Film Coater, Long Tape Casting Coater, Broad Beam Metal Implanter, CZ Crystal Grower System, 1200°C Quartz Tube Furnace, Economical 4" Mask Aligner, Heavy Duty (12") Precision Grinding Polishing Machine, Consumables Items (Wafers, Chemicals, Gases, Glass Ware, Source Material, Boats, Crucibles, Components etc.)	24-11-2021 10:30 A.M	24-11-2021 11:00 A.M



**INTERNATIONAL ISLAMIC UNIVERSITY ISLAMABAD**

**P&S Section, New Campus, Sector H-10, Islamabad.**

**Tel - 051-9019255 Fax 051-9258073**

*Tender Document Price : Rs. 3,000/-*



# BoQs for the Supply of Lab Equipment for Centre for Advanced Electronics & Photovoltaic Engineering (CAEPE)

S. No	Equipment Name	BoQs/Specifications	Qty.	Make/ Model & Country of Origin	Mode of Purchase	Unit Price	Total Price
1	Compact Precision Screen Printing Film Coater	with Vacuum Chuck & Pump - EQ-SPC-1-LD or equivalent	01		CPT		
2	Long Tape Casting Coater	250mmW x 800mmL Vacuum Bed with Adjustable Doctor Blade & Optional Heater - MSK-AFA-L800 or equivalent	01		CPT		
3.	Broad Beam Metal Implanter	HEMII-50 Broad Beam Metal Implanter or equivalent with acceleration grid upto 30kV to 50kV; Vacuum chamber; Pumping system; Substrate Holder (~150mm wafer); High energy metal ion source with triggering voltage ≥10kV, Pulse frequency 0-30Hz, beam average current 0-5mA, uniformity: better than ±5% for the area 100mm <sup>2</sup> ; Safety shielding, power interlocks; PLC control	01		CPT		
4	CZ Crystal Grower System	with Vacuum Chamber for Oxide Single Crystals upto 2100°C - EQ-SKJ-50CZ or equivalent	01		CPT		
5	1200°C Quartz Tube Furnace	(2" O.D) with Glove Box Purification System (H <sub>2</sub> O<2ppm) OTF-1200X-S-VGB5 or equivalent	01		CPT		
6	Economical 4" Mask Aligner	Economical 4" Mask Aligner with ~350 Watt UV Lmap; approximately 365 nm output beam intensity; Microscope system; Alignment Stage with wedge error compensation; operating interface; protective glasses and accessories; SWIN MA4 or equivalent	01		CPT		
7	Heavy Duty (12") Precision Grinding / Polishing Machine	Heavy Duty (12") Precision Grinding / Polishing Machine with Complete Accessories - EQ-Unipol-1210 or equivalent	01		CPT		
8	Misc: Consumables (Wafers, Chemicals, Gases, Glassware, Source Material, Boats, Crucibles, Components etc.)						
8.1	Filaments for the Machine SEM	Pre-Centered Tungsten Filament for EM6000 Series computable with the current SEM available in the center KYKY EM-6900	05		CPT		
8.2	Silicon Power Schottky Diode MBRT60040R for the machine NANO MASTER PVD	Silicon Power Schottky Diode MBRT60040R for the machine NANOMASTER PVD. 40V 600A Three Tower Silicon Rectifier Module - Schottky (Reverse Configuration)	03		FOR		
8.3	Nitrogen cylinder with precision control gauge and Carrier stand/trolley	2000 psi pressure, over 98 % pure	01		FOR		
8.4	SiC-3C Undoped Epi Film on Silicon	SiC-3C Undoped Epi Film on Silicon (100) Wafer after epitaxy growth, 2.2 micron Thick, 10x10x0.525 mm	02		CPT		
8.5	SiC - 6H (0001), 2" dia., one side polished wafer	SiC - 6H (0001), 2" dia. one side polished wafer	02		CPT		
8.6	SiC - 4H (0001), 2" dia. One side polished wafer	SiC - 4H (0001), 2" dia. One side polished wafer	02		CPT		

**Note: Required items must be of the same specs as mentioned above or Equivalent.**

For any technical queries; please contact: **Prof. Dr. Ahmed Shuja Syed, Executive Director at**  
[ahmed.shuja@iiu.edu.pk](mailto:ahmed.shuja@iiu.edu.pk) / [shoaib.alam@iiu.edu.pk](mailto:shoaib.alam@iiu.edu.pk) (051-9019927)