



**V. B. S. Purvanchal University, Jaunpur-222003, UP**

**E-Tender Notice No: PU-ET 31/2020**

**Centre for Renewable Energy, Prof. Rajendra Singh (Rajju Bhaiya) Institute of Physical Sciences for Study and Research**

E-Tender notice offers are invited for the supply and installation of laboratory equipment “Modular solar cell Testing Platform” (**Annexure I**) in Centre for Renewable Energy, Prof. Rajendra Singh (Rajju Bhaiya) Institute of Physical Sciences for Study and Research from manufacturers / authorized dealers / distributors / Channel Partners. Tender shall accompany demand draft of Rs. 1000/- (One Thousand Rupees Only) as tender form cost non-refundable and earnest money deposit (EMD) of Rs. 65,000 /- (Sixty Five Thousand Rupees Only) for **Annexure I**. EMD should be remitted in the form of RTGS/NEFT in favour of “**Finance Officer**”, **Veer Bahadur Singh Purvanchal University, Jaunpur** (A/C 4539000100038627 IFSC – PUNB0453900) from any of the public sector or private bank. Exemption of EMD is permissible if applicable as per rules. The EMD will be valid up to 45 days beyond the final bid validity period. EMD of the unsuccessful bidder will be returned to them at the earliest after expiry of the final bid validity and latest on or before the 30 days after the award of the contract.

Tender forms along with specifications and other details can be purchased online from the Portal <https://etender.up.nic.in> during 31/05/2020 (document download start date) to 20/06/2020 (online bid submission end date) time 5:00 PM.

**Registrar**

**Notice Inviting Tender (NIT)**  
**For**  
**Supply, installation and commissioning of laboratory equipment**  
**“Modular solar cell Testing Platform”**  
**in**  
**Centre for Renewable Energy, Prof. Rajendra Singh (Rajju Bhaiya) Institute of Physical**  
**Sciences for Study and Research**  
**At**  
**Veer Bahadur Singh Purvanchal University, Jaunpur-222003, UP**

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**CRITICAL DATES SHEET**

<b>S. No.</b>	<b>Particulars</b>	<b>Date</b>	<b>Time</b>
1.	Publishing Date	<b>30/05/2020</b>	<b>03.00 PM</b>
2.	Document Download Start Date	<b>31/05/2020</b>	<b>11.00 AM</b>
3.	Pre-bid Clarification Start Date & Time	<b>31/05/2020</b>	<b>11:00 AM</b>
4.	Bid Submission Start Date	<b>31/05/2020</b>	<b>11:00 AM</b>
5.	Pre-bid Clarification End Date & Time	<b>20/06/2020</b>	<b>04.00 PM</b>
6.	Document Download End Date	<b>20/06/2020</b>	<b>05.00 PM</b>
7.	Bid Submission End Date	<b>20/06/2020</b>	<b>05.00 PM</b>
8.	Physical bid document Submission end date	<b>24/06/2020</b>	<b>05.00 PM</b>
9.	Opening of the Technical Bid	<b>25/06/2020</b>	<b>11:00 AM</b>
10.	Technical Evaluation of Bids	<b>26/06/2020</b>	<b>11:30 AM</b>
11.	Financial/Price Bid Opening Date	<b>27/06/2020</b>	<b>03:00 PM</b>

**Equipment Name for Centre for Renewable Energy, Prof. Rajendra Singh**  
**(Rajju Bhaiya) Institute of Physical Sciences for Study and Research**

S.No.	Name of the Equipment	Qty	EMD (₹)
1.	Modular solar cell Testing Platform	01	

## **Terms & Conditions**

**For the tender regarding the supply of “Modular solar cell Testing Platform” for Centre for Renewable Energy, Prof. Rajendra Singh (Rajju Bhaiya) Institute of Physical Sciences for Study and Research, V.B.S. Purvanchal University, Jaunpur - 222003**

Bids are invited for the supply of the following item at Prof. Rajendra Singh (Rajju Bhaiya) Institute of Physical Sciences for Study and Research, VBS Purvanchal University, Jaunpur. Tender (Technical Bid Envelope) must reach on or before 05:00 PM, 24/06/2020 to the office of Registrar, VBS Purvanchal University, Jaunpur by **speed post/registered post/courier** only. Any tender received after the scheduled date will not be accepted at any cost even due to postal delay. The bids will be opened on the scheduled date and time in the office of finance officer, VBS Purvanchal University, Jaunpur before a committee approved by the Honourable Vice-Chancellor. University reserves the right to reject one or all bids without assigning any reason at any stage.

Technical bid should be sent to the office of the Registrar, VBS Purvanchal University, Jaunpur, in which under given certificate/documents must be kept. **The 'Financial Bid' should be uploaded only on E-tender website in the specified format.** In case of lack of any certificate/registration/required documents, the tender shall be liable to be rejected. The envelope of technical bid which should be duly sealed, should be kept in one big envelope on which bidder should quote “Technical bid for the supply of supply of “Modular solar cell Testing Platform” for Centre for Renewable Energy, Prof. Rajendra Singh (Rajju Bhaiya) Institute of Physical Sciences for Study and Research, Veer Bahadur Singh Purvanchal University, Jaunpur” and should be addressed to **“The Registrar, Veer Bahadur Singh, Purvanchal University, Jaunpur – 222003, UP, INDIA”**. Bidder must mention his/her **mobile number** on the envelope of technical bid for any query in future.

### **Bid No. 1 Technical Bid**

1. Tender should be provided accessories – wise details.
2. Photocopy of Registration certificate of GST No. of the firm should be kept in the envelope of technical bid.
3. Photo copy of PAN Card of the Firm/Proprietor should be in the envelope of technical bid.
4. Certificate of Central registration in which manufacturer of the said item should be quoted (In case of the proprietary items only) should be kept in the envelope of technical bid.
5. EMD should be remitted in the form of RTGS/NEFT in favour of **“Finance Officer”, Veer Bahadur Singh Purvanchal University, Jaunpur** (A/C 4539000100038627 IFSC – PUNB0453900) from any of the public sector or private bank. The certified copy of EMD should be kept in the envelope of technical bid.
6. All the required certificate/documents/earnest money should be kept in technical bid envelop on which bidder will quote **“Technical bid for the supply of (Name of the Equipment) in capital letter”**.
7. All the rates of the required items/equipment must be quoted Finance Officer, V.B.S. Purvanchal University, Jaunpur including packing charges and installation charges etc.

8. All the rates quoted in the tender will be valid for **one year** from the opening date of tender.
9. Items/equipment required shall be supplied and installed in the lab of Prof. Rajendra Singh (Rajju Bhaiya) Institute of Physical Sciences for Study and Research, Veer Bahadur Singh Purvanchal University, Jaunpur.
10. All the technical literature of the equipment shall be provided at the time of tender. The vender may be required to provide price justification of his quoted rates.
11. The tender will be rejected if it is not submitted in the manner as prescribed in technical bid stated above.
12. All the decisions will be reserved with the Vice-Chancellor of V.B.S. Purvanchal University, Jaunpur.
13. Any litigation will be subject to judicature at Hon'ble Civil Court Jaunpur and Hon'ble High Court Allahabad.
14. **Payment terms**
  - a) 90% payment shall be released after receipt of goods in good order and condition and successful installation, thereafter certificate from the concerned head of the department and balance 10% payment shall be released after submission of performance bank guarantee (PBG) amounting to 10% of the purchase order value. The PBG will be drawn from any nationalize bank valid for the warranty period plus 60 (sixty) days.

**or**

In case of imports, payment will be made through Letter of Credit. 90% will be paid after submission of all original shipping documents & balance 10% will be released after satisfactory installation and commissioning along with submission of Performance Bank Guarantee.

  - b) ensure mentioning
    - (i) Bank details of the beneficiary and pan number
    - (ii) Full name and address of the beneficiary on whom order has to be placed
15. **Clearance and delivery**

On arrival of shipment/consignment, the supplier is required to arrange custom clearance and transportation of the consignment up to Prof. Rajendra Singh (Rajju Bhaiya) Institute of Physical Sciences for Study and Research, VBSPU, Jaunpur premises. The Tenderer/ bidder will do all types of clearance work and **formalities to deliver/provide the equipment at the site of installation. The expenses incurred will be paid on actual basis not exceeding the quoted amount.** Institute will provide all types of documentary support including Customs Duty exemption certificate. The custom duty, custom clearance charges, transportation charges etc. will be paid in Indian Rupees. This should be included in your quoted rates.
16. Patent rights: the supplier shall **indemnify** the purchase against all third party claims of infringement of patent, trademark or industrial design rights arising from use of the goods or any part thereof in India.
17. Clubbing of equipment in one envelop is prohibited and such tenders will be rejected.
18. bidders to enclose the following documents: -
  - a) current income tax and sales tax clearance certificates and pan no.
  - b) banker's solvency certificate
  - c) summary of audited statement of accounts for the last three years
  - d) customer satisfaction certificate from 05 such organization is to be attached with the technical bid.

- e) name and address of minimum 05 clients to whom such equipment has been supplied in the last Five years should be mentioned.
19. **Liquidated damages:** the stores should be delivered/dispatched to destination and ready for operation not later than the delivery date specified. If the supplier fails to deliver any or all the stores or perform the service by the specified date, liquidated damages at 1% per Month or part thereof in respect of the value of stores will be deducted from the contract price subject to a maximum of 5%. Alternatively, the order will be cancelled and the undelivered stores purchased from elsewhere at the risk and expense of supplier.
  20. **Warranty / guarantee:** this comprehensive onsite warranty / guarantee shall remain valid for 36 months after the goods (or any portion thereof as the case may be) have been delivered and commissioned to the final destination indicated in the contract.
  21. **Advanced training of the instrument performance and maintenance must be given to the department's/ centre's representatives after the successfully installation of the instrument. The expenditure of above mentioned training will be borne by the company only.**
  22. Only those bidders whose bids have been technically found acceptable will be invited for participation in the price bid.
  23. Conditional offer will not be accepted.
  24. Late tenders i.e. tender received after the due date and time of submission as mentioned above shall not be accepted.
  25. The institute does not bind itself to offer any explanation to those bidders whose technical bid has not been found acceptable by the evaluation committee of the institute.
  26. Country of origin of the goods is to be mentioned.
  27. **Refund of EMD:** The EMD will be returned to unsuccessful Bidder only after the Tenders are finalized. In case of successful Bidder, it will be retained till the successful and complete installation of the equipment.
  28. Please Note that the University remains closed during Sundays and all specified University holidays.
  29. Fax, E-mail Tender will not be accepted.

#### **IMPORTANT**

- i. **The vendor/suppliers/participants should respond against each of the tender technical specifications (for every equipment) in a concise point wise manner.**
- ii. **The vendor should respond within 48 Hours of any complaint/issues regarding the performance/status of the equipment.**
- iii. **Installation, commissioning and training**
  - a. The delivery should be considered complete only after successful commissioning of the instrument/equipments.
  - b. The pre-installation requirements should be communicated to VBS Purvanchal University well in advance of the installation.
  - c. The installation, commissioning and training must be done only by well trained personnel. Training should be provided to at least three scientists/faculty of the Prof. Rajendra Singh (Rajju Bhaiya) Institute. Training should be considered incomplete until each of trainees express their satisfaction.

- iv. **Demonstration of all the specified accuracy and repeatability of the instrument.**
- v. **VBS Purvanchal University Jaunpur authority may accept or reject any or all the bids in part or in full without assigning any reason and does not bind itself to accept the lowest bid. The University at its discretion may change the quantity / upgrade the criteria/ drop any item or part thereof at any time before placing the Purchase Order.**
- vi. **Promptly make arrangements for repair and /or replacement of any damaged item(s) irrespective of settlement of claim.**

**Bid No. 2 Financial Bid**

- 1. Financial bid will be opened only when technical bid is found to be qualified.
- 2. No Conditional financial bid shall be entertained/accepted.

**Registrar**

**Modular solar cell Testing Platform**

<b>S. No.</b>	<b>Parameters / Features</b>	<b>Description</b>
1.	<b>Steady state test</b>	<ul style="list-style-type: none"> <li>• <b>IPCE &amp; EQE:</b> white bias light / voltage bias</li> <li>• <b>SUN-JV:</b> (0-2 SUN)</li> <li>• <b>4-point resistivity:</b> sheet resistance</li> <li>• <b>Stability:</b> MPP tracking</li> </ul>
2.	<b>Transient tests</b>	<ul style="list-style-type: none"> <li>• Transient J-V</li> <li>• Charge Extraction by Linearly Increasing Voltage (Photo/Dark-CELIV)</li> <li>• Transient Photo-Voltage-Current (TPV-TPC)</li> <li>• Transient Electro-Luminescence</li> </ul>
3.	<b>Dynamic tests</b>	<ul style="list-style-type: none"> <li>• IMVS-IMPS (Frequency range : 100 mHz – 1 MHz)</li> <li>• Impedance Spectroscopy (IS) (Frequency range : 100 mHz – 1 MHz)</li> </ul>
4.	<b>Measurement Stage</b>	<ul style="list-style-type: none"> <li>• Thermal control with Peltier element (0 to 100°C)</li> <li>• Vacuum holes for flexible substrate</li> <li>• Up to 10 cm x 10 cm supporting area</li> <li>• Metal mask to define illuminate area up to 1 cm<sup>2</sup></li> </ul>
5.	<b>High-speed LED</b>	<ul style="list-style-type: none"> <li>• Custom wavelength</li> <li>• 1MHz pulse modulation</li> <li>• 0.001 - 2 SUN output power</li> </ul>
6.	<b>Photodiode</b>	<ul style="list-style-type: none"> <li>• Wavelength Range: 400 - 1100 nm</li> <li>• Active Area: 9.7 mm x 9.7 mm (94 mm<sup>2</sup>)</li> <li>• Rise/Fall Time 45 ns</li> </ul>
7.	<b>LED ring</b>	<ul style="list-style-type: none"> <li>• Custom ring of 6 high power LED's</li> <li>• Output power: 0.1 to 200mW/cm<sup>2</sup> (0.001 to 2 SUNs equivalent)</li> <li>• Spot size: 2 cm<sup>2</sup> (with variable spot size)</li> <li>• Pulsed or continuous</li> </ul>
8.	<b>Monochromatic light Source</b>	<ul style="list-style-type: none"> <li>• Tunable Light Source</li> <li>• Lamp Type: Xenon, Ozone Free</li> <li>• Xenon lamp power : 300 Watt</li> <li>• Tunable Range: 300-1800 nm</li> <li>• Spectral Resolution: 1 nm</li> <li>• Interchangeable fixed slits</li> <li>• RS232/GPIB</li> <li>• light intensity control with closed loop monitoring photodiode</li> </ul>
9.	<b>High-speed probe</b>	High-speed custom probes shielded with separated force and sense wires for voltage and current measurement. Maximum Current : +/- 100 mA Maximum Voltage : +/- 10 V
10.	<b>4-points probe</b>	Self-leveling 4-point probe for sheet resistance measurements
11.	<b>Calibrated photodiode</b>	UV enhanced silicon photodiode with NIST calibration 250-1200 nm



12.	<b>Standard reference silicon solar cell</b>	National Renewable Energy Laboratory (NREL) calibrated silicon reference cell
13.	<b>LED spectrum</b>	<ul style="list-style-type: none"> <li>• Light stabilization kit with feedback photodiode.</li> <li>• LED light spectrum should be class AAA.</li> <li>• Preset program for getting Tubelight, condense lamp and General purpose LED Lamp spectrum.</li> </ul>
14.	<b>Steady State Portable Solar Simulator</b>	Portable Solar Simulator Class AAA with minimum effective area 40 mm × 40 mm with detachable control panel and built in power supply.
15.	Installation, commissioning and training	a. The delivery should be considered complete only after successful commissioning of the instrument. b. The pre-installation requirements should be communicated to VBS Purvanchal University well in advance of the installation. c. The installation, commissioning and training must be done only by well trained personnel. d. The vendor should provide training to at least 3 persons at the installation site to make them familiar with the smooth operation of the instrument. e. Demonstrate all the specified accuracy, resolution and repeatability of the measurement on the standard sample.
16.	Guarantee/ Warranty	At least 3 years comprehensive warranty
17.	Spare accessories	All accessories along with the tools should be provided
18.	UPS	Required uninterruptible power source (UPS) with one hour backup should be provided by the supplier.
19.	Computer	Computer with latest version of Windows OS compatible with instruments software. <b>Min System configuration:</b> i7 Processor, 8 GB RAM, 1TB Hard Drive, 23" LED Monitor, DVD Writer, Keyboard & Mouse, Color printer. Upgradable option
20.	All the routines must include advanced post processing software for data fitting and file manager.	