

**REQUISITION FORM FOR TEQIP III (COLLABORATIVE RESEARCH PROJECT) PURCHASE**

Sl. No: JIST/TEQIP-III/CR/2019/2578/MECH-404

Name: Mr. Nayanjyoti Talukdar (Principal Investigator)

Dr Bharat Kakati (Co Investigator)

Title of the Project: "Non-Thermal Plasma Process Technology for Development of Si Photovoltaics"  
 [Ref.: ASTU/TEQIP-III/Collaborative Research/2019/2578, Dated: 18.07.2019]

Sl. No	Description of Items	Quantity	Specification/Details (Separate Sheet may be attached if needed)	Justification/Purpose	Issue (to be filled by Store)
1	<b>335 Wp SPV MODULE</b>	01	<p><b>Electrical Characteristics:</b>                      Nominal Maximum Power (Pm) = 335Watts                      Power tolerance = 0 / + 5 W                      Open Circuit Voltage (Voc) = 45.80 Volts                      Short Circuit Current (Isc) = 9.50Amps                      Voltage at Maximum Power (Vmp) = 36.70 Volts                      Current at Maximum Power (Imp) = 9.13 Amps                      Maximum System Voltage in = 1000Volts                      Module Efficiency (%) = 17.27                      Maximum Series Fuse Rating (A) 15                      (Under Standard Test Conditions (STC) of 1000 W/m2 irradiance, AM 1.5 spectrum and 25°C cell temperature.)</p> <p><b>Mechanical Characteristics:</b>                      Length x Width x Thickness (L x W x T) - mm = 1960 x 990 x 40                      Mounting Holes Pitch (Y) - mm = 1060                      Mounting Holes Pitch (X) - mm = 942                      Weight (kg) = 22.50                      Solar Cells per Module (Units) /Arrangement = 72 / (12*6)                      Solar Cell Type = Mono Crystalline Silicon                      Front Cover (Material / Thickness) = Tempered &amp; Low Iron Glass /3.2mm / 4mm,                      Cable cross-section = 4 mm<sup>2</sup>                      Encapsulate = Ethylene Vinyl Acetate                      Frame Material = Anodized Aluminium Alloy                      Junction Box (Material / Type) = Weatherproof PPO / IP67 enclosure with bypass diodes                      Connector (Protection degree /Type) = IP67 rated / MC4 compatible</p>	The SPV MODULE will purchase under the collaborative research scheme of TEQIP III project entitled, "Non-Thermal Plasma Process Technology for Development of Si Photovoltaics" to carry out R&D work for development of plasma derived Si-thin film at iPVD reactor of META Laboratory, ASTU. The SPV MODULE will be used to study I-V Curve Variation with Temperature for existing Solar PV Cells and later results may compare with the developed Si-Thin film cells. The SPV MODULE will be delivered at Mechanical Engineering Laboratory, JIST, Jorhat-10. The project is sanctioned under collaborative research scheme of TEQIP III project (Ref.: ASTU/TEQIP-III/Collaborative Research/2019/2578, Dated: 18.07.2019).	

Sl. No	Description of Items	Quantity	Specification/Details (Separate Sheet may be attached if needed)	Justification/Purpose	Issue (to be filled by Store)
	<b>335 Wp SPV MODULE</b>		<p><b>Thermal Characteristics:</b>                      Temperature coefficient of Current (Isc), <math>\alpha</math> (%/°C) = 0.0118                      Temperature coefficient of Voltage (Voc), <math>\beta</math> (%/°C) = -0.2627                      Temperature coefficient of Power (Pm), <math>\gamma</math> (%/°C) = -0.3677                      NOCT (°C) = 46 ± 2                      Operating temperature range (°C) = -40 to 85</p>		
2	<b>Multi meter</b>	01	<p>6000 Counts Backlit Display with Analogue Bar graph                      DC Voltage accuracy = .09%                      DC Current resolution = 0.1 micro Amp .                      • AC Bandwidth of 40Hz to 1000Hz for Voltage &amp; Current measurement                      • IP-67 Protection, Dust-Water Proof                      • 1000V DC/AC Protection on all Ranges.                      • Fast Blow Fuse Protection                      • Measures AC T-RMS/DC Voltage                      • Measures AC T-RMS/DC Current                      • Resistance, Capacitance, Frequency, Temperature, Duty Cycle Measurement                      • Diode &amp; Continuity Check                      • Data Hold, MIN/MAX record                      • Relative Measurement                      • Double Molded Housing                      • 6.5feet Drop proof                      • Input Impedance &gt;10MΩ VDC &amp; VAC                      • Over-range Indication, Low Battery Indication                      • Auto Power Off to save battery life                      • 9V Battery Operated                      • Operating Temperature 41°F to 104°F (5°C to 40°C)                      • Storage Temperature -4°F to 140°F (-20°C to 60°C) • Operating Humidity Max 80% up to 87°F (31°C) decreasing</p>	To measure voltage, current developed from SPV module under varying conditions of solar radiation intensity throughout the day.	

*Nayanjyoti Talukdar*  
 Indenter:  
 Date: 18/07/2019  
 Assistant Professor  
 Department of Mechanical Engineering  
 Jorhat Institute of Science & Technology

Verified by:  
*[Signature]*  
 Assistant Professor  
 Jorhat Institute of Science & Technology  
 JORHAT-10, ASSAM

*[Signature]*  
 Signature of Issuing Authority:  
 Date: .....  
 Principal  
 Jorhat Institute of Science & Technology  
 Jorhat-10, Assam

### Terms and Conditions:

The vendor is required to bid for 1 No of **335 Wp SPV MODULE** AND 1 No of Multimeter as mentioned in the requisition form with detail technical specifications. A duly signed sealed quotation super scribing with "Quotation for supply of **SPV MODULE** against SI NO. JIST/TEQIP-III/CR/2019/2578/MECH-404" DUE ON 07.09.2020, 4.30 PM"

1. " should send in a single sealed envelope containing the both technical details and budget.
2. In the quotation, the vendor has to supply the test certificate of the **SPV MODULE** with the name of the manufacturer.

3. Delivery: Within 10 days after receiving the purchase order.

4. Payment: 100% against delivery

5. Validity of the quotation: At least 55 days

6. Warranty: At least 10 Years from the date of delivery

7. Address to send the quotation by post:

**To**  
**The Principal,**  
**Jorhat Institute Of Science And Technology,**  
**Sotai, Jorhat-10, Assam**

8. Address to Deliver the material:

**To,**  
**The Mechanical Engineering Laboratory,**  
**Jorhat Institute of Science and Technology,**  
**Sotai, Jorhat-10, Assam**

**+919101227429**

9. Last date of submission: On or before 07/09/2020 at 4.30 PM

10. Date of opening tender: On 08/09/2020 at 3.00 PM