Order Code - 46632
Solar Technology Trainer

SALINET FEATURES

- Table top aluminum profile flat demo panel rack with tiltable lockable frame 0-90° in steps to mount SPV modules 2nos.
- Employs 500W X 2 nos halogen lamps as variable intensity sun simulator.
- Renewable energy basics, energy conservation, charge controller, storage system, alternating current & Invertor (optional)
- Optional single phase Gird tide Invertor to demonstrate power export using bidirectional multifunction meter.
- Temperature control using peltier module to study temperature effect.
- Facilitates understanding of underlying physics by measuring carrier life time & spectral response of a solar cell.
- Set of Instructor Guide & Student Workbook

Technical Specifications

- **SCR actuator cum sensor signal conditioning panel (EMT9)**
  - Supports signal conditioning circuit for temperature to give output 2-2.5Vdc
  - To control the temperature by controlling IR lamp by P/PI controller & signal conditioning of sensor
- **Instrumentation power cum multichannel DPM panel (EMT8)**
  - +12V,-12V,@500mA,&+5V@300mA.
  - Multi channel DPM for temperature display.
  - 20 pin FRC power bus to supply power to neighboring panel.
- **Solar cell experiment panel(ST1)**
  - 50 X 50 mm X 2nos ,solar cells
  - Loading pots (500E and 5K).
  - Series parallel combination arrangement.
  - PT 100 sensor to measure temperature.
  - Cooling Fan to cool heatsink.
- **Spectral Response & carrier Lifetime Measurement panel (ST2)**
  - 11 different wavelength LED`s @ constant 20/30mA current to detemine spectral response parameter.
  - 50 X 50 mm X 2nos. Solar cells.
  - White led bank of 8 LED`s to determine carrier life time parameter.
  - IP 12 W switch to select different wave length LEDs.
- **Solar application panel (ST3)**
  - 12V LED lamp and fan.
- **Dimmer panel (HIT5)**
  - Dimmers 3 nos. to set intensity of halogen lamp.
- **DMM panel**
  - DC Voltmeter (0-100V)
  - DC Ammeter (0-5A)
- **MPPT Battery Charge panel (Optional)**
- **Solar water pump panel (Optional)**
- **Stand alone Invertor panel (Optional)**
- **Table top aluminum profile rack consist of**
  - 20W X 2 photo-voltaic (PV) modules mounted on tiltable lockable aluminum frame. (PV module dimensions 500 X 400 X 35 mm)
  - 500W Halogen lamp 2 nos to simulator sun in laboratory.
  - Solar cell experiment panel to study solar characteristics
  - Rheostate as load for SPV modules (800E,2.5A)

List of Experiment

1. Study of I-V characteristic of Solar cell.
2. Study of I-V characteristic of Solar PV module.
3. Study of series parallel combination of solar cells.
4. Study of series parallel combination of solar PV modules.
5. Study of dependency of solar cell I-V characteristics on light intensity (irradiation).
6. Study of dependency of solar cell I-V characteristics on temperature.
7. Measurement of Carrier Lifetime for a solar cell.
8. Measurement of Spectral Response for a solar cell.
9. Study of power output of a solar module depending on the angle fo incidence (tilt angle) of the light.
10. Study of shading effect on solar cell parameters.
11. Study of photovoltaic effect in ubiquitous semiconductor PN junction (diode)

- **Mechanical Dimensions (mm)**
  1170(L) X 300(W) X 900(H)
  - Tiltable lockable frame : 1020(L) X 550(W)

Note: Specifications are subject to change.

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