



55502D Solar Energy Trainer is a versatile training system used in the laboratories. With this system students can understand the various characteristics and applications of solar energy. They will learn how solar cells are put together to generate the desired voltage and current and how solar energy can be utilized to operate different electrical and electronic appliances. This system is provided with a Solar Energy Trainer and Solar Panel. Solar Panel contains 6 cells each of 2V DC and 150mA DC rating. Solar Energy Trainer contains three sections : 1. Solar Input Section 2. Measurement Section 3. Application Section and are represented in such an easy way so that each section can be studied differently and so easily. The Solar Cell Input Section contains outputs of all 6 cells. Measurement Section contains Voltmeter, Ammeter and Potentiometer. Students can easily measure voltage and current of solar cells themselves using voltmeter and ammeter provided. Application Section contains charging section and other appliances that can be operated using solar energy. Charging Section charges the battery directly by solar energy and provides supply to load through amplifier section. Domestic appliances like lamp, fan and FM radio are provided on board.

Objects

1. Study of the voltage and current of the solar cells
2. Study of the voltage and current of the solar cells in series and parallel combinations
3. Study of both the current-voltage characteristic and the power curve to find the maximum power point (MPP) and efficiency of a solar cell
4. To calculate the efficiency () of the solar cell
5. Study of the application of solar cells of charging Ni-Cd battery so that the loads can be used even while the module is unexposed to light

6. Study of the application of solar cells of providing electrical energy to the domestic appliances such as lamp, fan and radio.

Technical Specifications

Solar Panel	: Consists of six solar cells
Maximum Voltage of each solar cell	: 2V DC
Maximum Current of each solar cell	: 150mA DC
Digital Voltmeter	: 0-10V DC
Digital Ammeter	: 0-500mA DC
Potentiometer	: 5K 10Turn
Rechargeable Ni-Cd Battery (Type 2AA)	: 1.2V DC
Bulb	: 2.2V,250mADC
Fan (DC Motor)	: 1.5V, 400mA DC
FM Band Radio	: 12V DC
Load with Amplifier Section	: Using Six LED's
	1. Adequate no. of other electronic components.
	2. Mains ON/OFF switch and Jewel light.
	3. The unit is operative on 230VAC \pm 10% at 50Hz
	4. Strongly supported by detailed Operating Instructions, giving details of Object, Theory, Design procedures, Report Suggestions and Book References.
	5. Weight : 5.600 Kg. (Approx.)
	6. Dimension : W 340 x H 125 x D 210

List of Accessories

1. Solar Panel with Stand -----01 No.
2. 15 Pin Cable (5 Meter Male to Male) -----01 No.
3. Patch Cord length 50cm Red (2mm) ---15 Nos.

Note: Specifications are subject to change.