

# SOLAR POWER GENERATION TRAINER

## Overview

This option of the Solar Power Generation Trainer can work in both off-grid and on-grid modes. It consists of a PV panel and an array of halogen lamps as a sun simulator. The positions of both the PV panel and Sun Simulator can be controlled manually using joysticks and also from the software. The trainer also has a dual-axis solar tracking system. The trainer allows to simulate real light, daytime, yeartime and investigate the PV performance in different irradiation. In off-grid mode it allows to investigate the battery charging process using a DC charge controller and also the discharge using an AC-DC Inverter and loads. In on-grid mode it allows to implement the synchronization with the mains power grid using a Grid-tie inverter.

YouTube Link: [https://youtu.be/mZPBO\\_Bq8qI](https://youtu.be/mZPBO_Bq8qI)

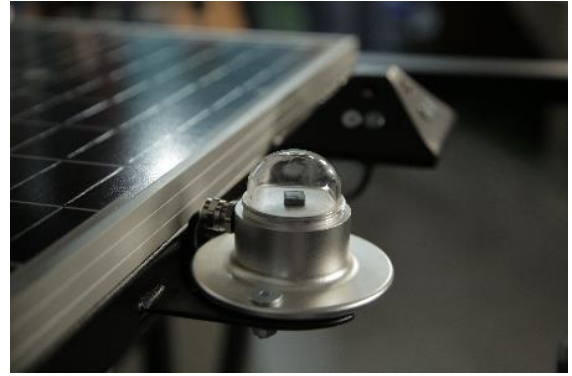


## Topics covered

- ✓ Structure and design of a solar photovoltaic power plant
- ✓ Study of photovoltaic solar panels
- ✓ Operation of the solar power station in battery charging mode
- ✓ Autonomous operation of a solar power plant supplying a load
- ✓ Operation of on-grid solar power plant
- ✓ Protection in solar power plant in case of emergencies

## Solar Power Generation Trainer Hardware Pictures:





## Solar Power Generation Trainer Software Screenshots

