

Solarizer Workshop Course Content

Techfest is the annual science and technology festival of IIT Bombay.

Following is the basic outline of the **in person** workshop that would be happening at **Techfest** in **IIT Bombay**

Day 1

Part 1 (Introduction talk)

Solar Energy Scenario in India & Job Opportunities

Basics of Solar Photo Voltaic Technology (PV)

-----Quiz from previous activity

Part 2 (Study of Solar PV Components & Types of Solar Cell)

What is Solar cell, Module and how it is made?

Study of different components of off-grid and Grid connected solar PV system

Study of different types of Solar PV System

-----Quiz from previous activity

Part 3 (System Designing):

System designing of Off-Grid and Grid-Connected Solar PV System using Excel sheet

Understanding of Off-Grid & Grid-connected solar PV system

Part 4 (Simulation Software PVsyst & PV System Design) Practical 1:

Study of PVsyst simulation software

Basics of simulation tools

Concepts of PV System Design

Design a Solar Power Plant to light/power your own house/College

Part 5 (Shadow analysis and generation of final report) Practical 2:

Near shadow analysis, final energy generation and final report Analysis

How to avoid shadowed area?

Estimation of monthly power generation and financial savings

Analyzing the final generated report.

-----Quiz & Case Study

Day 2

Part 1

Introduction to Mobile Charger and its Components

Part 2 (Practical 3):

Identifying the of Components and Use

Part 3 Demonstration of making Solar Mobile charger (Practical 4):

Circuit Diagram Explanation

Soldering the components and its connections

Design and build your own Solar Mobile Charge

Part 4 Solar PV Tracking System (Practical 4):

Measurement of IV characteristics of the Solar PV module

Analyse the IV characteristics at different series/parallel combinations

Study the change in module power with change in tilt and find out the optimum tilt.

Part 5 Case Study