

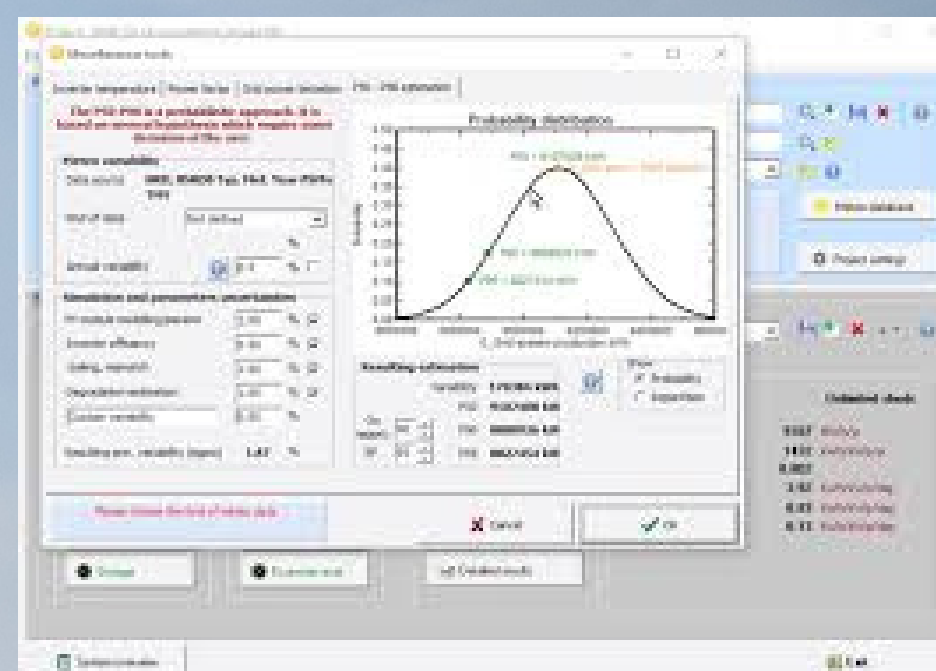
# 2-DAYS SHORT COURSE : DESIGN AND SIMULATION OF GRID CONNECTED PHOTOVOLTAIC (GCPV) SYSTEM USING PVSYST

29 to 30 May 2023

UiTM-MTDC Technopreneur Centre,  
UiTM Shah Alam, Selangor

## 1. Introduction to grid-connected photovoltaic (GCPV) system

- Types of GCPV system
  - Microinverter System
  - DC Optimiser system
  - String and central inverter
    - Single-phase inverter
    - Three-phase inverter
  - Multiple MPPTs
  - Transformerless and transformer-based inverter
- Types of connection
  - LV connection – single line diagram
  - MV connection – single line diagram
  - HV connection – single line diagram
- Types of GCPV scheme
  - Fit
  - NEM and SelCo
  - LSS
- Advantages and disadvantages of NEM



## 2. Design concept of GCPV system

- DC/AC ratio or overload ratio
- Safety of inverter
- Optimum operating conditions
- Power clipping

## 3. Introduction to PVsyst

- Simulation flow

## 4. Siting and Meteo Definitions

- PVsyst components library
- Create a new site with meteorological data





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## 5. Tilt angle and Azimuth

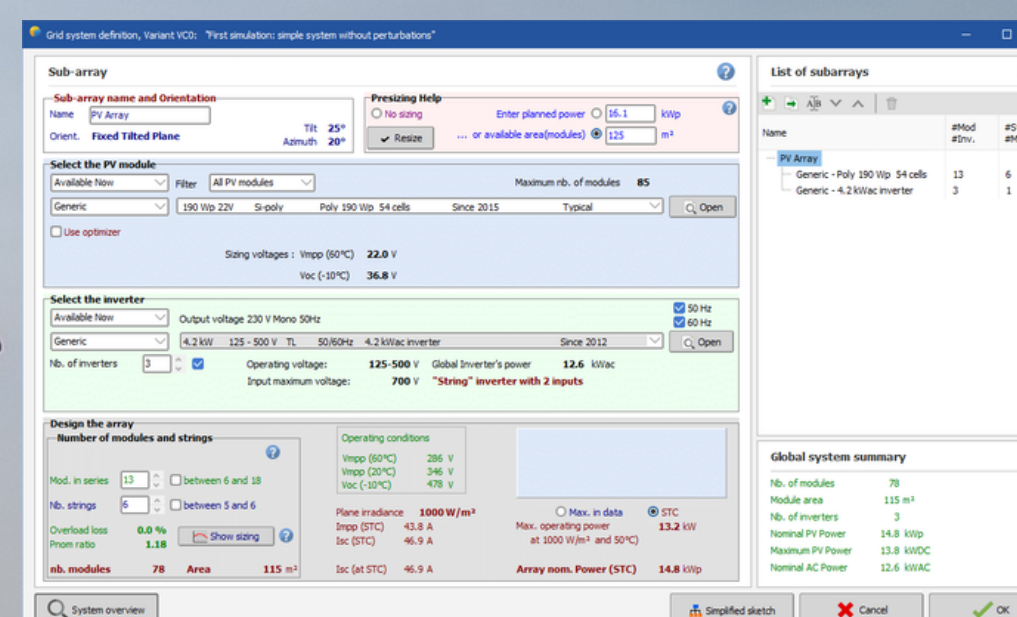
- Set mounting type, tilt angle and Azimuth angle
- Albedo – light reflection from the ground
- Effect of tilt and Azimuth angle

## 6. Electrical system

- PV modules; PVSyst components library and new modules
- Inverters; PVSyst components library and new inverter
- Cables; Declare DC and AC cable loss

## 7. Sizing PV-Inverter

- Sizing using a single MPPT inverter
- Sizing using multiple MPPT inverters
- Sizing using many inverters – LSS plant
- Method of inverter selection based on PV array capacity
- Optimum sizing condition; voltage, current and power requirements
- Method of finding optimum PV array configuration; Np and Ns



## 8. Shading

- Far shading – method of input data from Solarpath finder chart
- Near shading – 3D drawing and Shading simulation
- Polar and rectangular plots

## 9. Other losses

- Thermal, Ageing, DC and AC cables, Unavailability
- Dirt, Incidence Angle Modifier, Light-Induced Degradation
- Mismatch, Auxiliary devices

## 10. Self-consumption

- Household daily
- Power factor adjustment and reason
- Grid power limitation and reason

## 11. Simulation and reporting

- Explanation on the report format





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## SYSTEM USING PVSYST

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Supported By



### Requirements: –

- Each participant shall have his/her own PVSyst software V7.0 or the latest installed.
- Each participant shall bring his/her own laptop during the course.

### Trainer

**Dr. Ahmad Maliki Bin Omar**



- 33 years of teaching experience with undergraduate electrical engineering students.
- 15 years of experience in teaching, training, and consultancy works related to solar photovoltaic (PV) power systems.
- Representing Malaysia at IEA-PVPS Task 11.
- Appointed as the Master Trainer and Examiner for the SEDA competency programs
- Appointed as the Regional Trainer for Asian Photovoltaic Industry Association (APVIA)

**Limited to 15 participants only!**

**Fee : RM1400 per participant**

**Book your seat now!**

### Organiser



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<https://rb.gy/uejc5>



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**PVSYST**  
PHOTOVOLTAIC SOFTWARE