





## COURSE STRUCTURE

### Day 1

#### **IEC61724**

- · Introduction and classification of monitoring
- Components of complete monitoring package
- Data acquisition equipment
- · Measured parameters
- Data processing and quality check
- Calculated parameters
- Performance metrics
- Hands-on exercise on PV Systems performance monitoring using GNUPLOT

### Day 2

#### **IEC61727**

- Introduction with hands-on power quality analysis in GCPV system
- Utility compatibility
- Personnel safety and equipment protection

#### **Solar PV Testing**

- Introduction to instrumentation for testing PV system
- Testing for Solar PV Installation
- · Safety during Testing
- Installation Testing
- Maintenance Tester
- Inverter Efficiency Tester
- Power Logger
- Datalogger

#### Day 3

#### Demonstration, Hands-On and Data Collection

- PV Check Pro
- IV600 (I-V curve tester)
- Solar Ive
- Power Logger
- Datalogger

#### Note:

### Participants are REQUIRED to:

- Download a free software called GNUPLOT and install in your own PC
- Bring that PC to class for use on Day 1
- Sample data will be provided before class starts

Recommended to have original copies of:

- IEC61724
- IEC61727

Good to have exposure on:

- MS1837-2018
- MS2692-2020

## **GET IN TOUCH**

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## TRAINERS PROFILE



Dr. Sulaiman Shaari obtained his B.S. (Physics) Kansas State University, USA in 1984. He then pursued his Master Degree in Physics University of Missouri, USA in 1987 and PhD in Energy at De Montfort University, UK in 1998. He also received the certificate (Photovoltaics) from Renewables Academy (RENAC), GIZ from Germany in 2015, SEDA Malaysia in 2014, NEDO certificate in 2011, GSES), Australia in 2007 and ISP in 2006. Dr. Sulaiman specific areas of expertise are teaching, training of physics, solar photovoltaics systems at university, technical and competency levels. Other than that, Dr. Sulaiman also do research, development and consultancy in photovoltaic energy systems and applications.



Dr. Ahmad Maliki Omar holds a PhD in Power Electronics from the University of Malaya, an M.Sc. in Electrical Engineering from Loughborough University, UK, and a B.Eng. (Hons.) in Electrical Engineering from the University of Malaya. He is active in teaching, training, consultancy, and research in solar photovoltaic (PV) power systems, power electronics, and dedicated controllers. He was the Malaysian representative at IEA-PVPS Task 11, Deputy Chairman of the PV Working Group for MS development, Professor, and Honorary Professor at the Faculty of Electrical Engineering, Universiti Teknologi MARA, Shah Alam. He is currently an Honorary Member of the Malaysian Photovoltaic Industry Association and a Master Trainer and Examiner for the SEDA GCPV and OGPV courses.



Bala Murugan Krishnan is the Sales and Technical Director at United Integration Technology Sdn Bhd, bringing over 25 years of experience in instrumentation, renewable energy, and test & measurement solutions. He holds a Master in Sustainable Development Management from Sunway University, along with a B.Eng (Hons) in Electronic Control Systems from Liverpool John Moores University, UK, and a Higher Diploma in Electrical and Electronic Engineering from Institute Megatech, Kuala Lumpur. Bala has led significant projects, such as solar and wind turbine monitoring systems and solar panel benchmarking systems, across Malaysia, Singapore, and internationally. His extensive experience includes providing training and managing projects for various educational and governmental institutions.

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