SOLAR PV SYSTEMS PERFORMANCE & QUALITY TEST

The course is intended for all level of technicians and engineers with electrical background. The candidate must posses basic technical background in photovoltaic system, power engineering, electrical, electronic engineering, or other related fields at a Diploma or Degree level. This course aims to provide a good understanding on how design and quality affects PV system performance (particularly in large scale solar power plant), and method to identify quality issues.

OBJECTIVES

- Identify various types of quality issues that could affect the performance of a PV system.
- Provide mitigation of quality issues during designing phase and installation phase of a PV system
- Address the techniques to identify quality checking in a PV system

TRAINING METHODOLOGY

- Structured Activities:
  Simulation and Demonstration

- For each of the topic covered, the students are first taught the basic concepts. The principle of operation and its practical implementation are then covered.

DATE & VENUE

Date: 15 & 16 May 2023 (2-Days)

Time: 9.00am to 5.00pm

Venue: Selangor Human Resources
        Development Center (SHRDC)
        Jalan Tinju 13/50, Seksyen 13,
        40100 Shah Alam, Selangor

COURSE FEES

MPIA Member Fees:
RM 1,590.00/pax (Inclusive SST 6%)

Non-Member Fees:
RM 1,908.00/pax (Inclusive SST 6%)

GET IN TOUCH

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SHRDC : Hajar   014-265 9631   siti.hajar@shrdc.org.my

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TRAINER PROFILE

Ir Dr. Lim Boon Han is an assistant professor in University of Tunku Abdul Rahman, Malaysia. He obtained his Bachelor of Electrical Engineering (first class honours) from University Technology of Malaysia in 1998 and his PhD from Cambridge University. He was awarded National Science Fellowship from MOSTE to support the direct doctorate study. He has designed 40MW of commissioned solar power plants and led 40 research projects, with total amount of funding equivalent to USD60 million. He is the inventor of 12 patents and has 21 peer-review publications and 18 conference papers. He is a Reviewer of Elsevier Science: Solar Energy, Review Editor of Frontiers in Solar Energy and an Associate Editor of Journal of Daylighting.

TRAINING PROGRAM OUTLINE

Day-1

Topic 1: PV System Design versus Performance

1.1 PV Electrical Characteristics
1.2 Optical Losses
1.3 Temperature and Ventilation
1.4 Electrical Losses
1.5 Performance Analysis

Topic 2: PV System Quality versus Performance

2.1 Introduction
2.2 Short term
2.2.1 Installation and transportation
2.2.2 Light Induced Degradation (LID)
2.3 Long term (durability) Quality Issues
2.3.1 Potential Induced Degradation (PID)
2.3.2 Micro-crack
2.3.3 Failures found in all PV modules
2.3.4 Failures found in silicon wafer-based modules
2.3.5 Failures found in thin film modules
2.3.6 Soiling and Cleaning

Day-2

Topic 3: Techniques and Equipment to Identify Quality Issues

3.1 Visual Inspection
3.2 I-V curve measurement
3.3 Long term performance monitoring
3.4 Thermography
3.5 Electroluminescence
3.6 Signal Transmission Method

Topic 4: Grid Power Quality and Stability Issue

4.1 Power Quality
4.2 Grid stability

Topic 5: Safety and Other Issues

5.1 Grounding and lightning
5.2 Faults, Fire and Leaking
5.3 Wind Load