



# Advanced Solar PV Project Experience: 5-Day Workshop in Our Hands-On Solar Lab in Austin, Texas; \$1295

**Next Dates: January 19th – January 23rd, 2018**

**(Get \$200 early-bird discount by registering before November 21<sup>st</sup>, 2017)**

**40 Advanced Training Hours Towards NABCEP PV Installation Professional Certification Requirements**

**Complete several hands-on solar labs during our workshop including:**

**Rail-Less Installation Lab (Ecolibrium Solar EcoX , Canadian Solar, UL2703 Compliant)**

**Grid-Tied PV Installation & Commissioning Lab with DC Optimizers (SolarEdge, Ecolibrium Solar Ecofoot2+)**

**Rail-Based Flashing and Mounting Lab (SunModo, UniRac, Sharp)**

**Site Assessment Lab (Solar Pathfinder, Solmetric SunEye)**

**Microinverter System with AC Battery (Enphase Energy IQ6+)**

## Friday 9-6pm

- Update on PV Industry Growth and Dynamics
- Electricity Review | PV System Components
- PV Cells, Modules, & Arrays
- PV Module Specifications
- The Solar Resource
- Site Assessment Tools: Pathfinder, SunEye
- IBC and IFC Code Requirements
- **HANDS-ON LAB: Site Assessment**
- DEMO: Performance Estimation with the PV Watts Calculator from NREL
- Project Experience Roadmap & Design Verification

## Saturday 9-6pm

- **HANDS-ON LAB: Rail-Based Flashing & Mounting Lab**
- Tools: Multi-Meters, Irradiance Meters, etc.
- **HANDS-ON LAB: Grid-Tied PV Installation & Commissioning Lab with DC Optimizers**
- DEMO: SolarEdge Monitoring Portal
- DEMO: SolarEdge Site Designer
- PV System Equipment Labeling Requirements

## Sunday, 11am-6pm

- PV Module Specifications compared to the National Electrical Code (NEC) 690.7, 690.8
- PV System Three Line Wiring Diagrams
- The National Electrical Code (NEC)
- Module Efficiency Considerations
- EXERCISE: Voltage
- DEMO: String Sizing Software
- Managing PV Projects
- Rail-Based versus Rail-Less Mounting Systems
- **HANDS-ON LAB: Rail-Less Mounting Installation**
- DEMO: Ecolibrium Solar EcoX Estimator

## Monday 9-6pm

- Inverters & Inverter Sizing Calculations
- Conduit & Raceway Calculations
- Electrical Integration & the NEC
  - PV System Grid Interconnection
  - Conductor Sizing Calculations
  - EXERCISE: Ampacity
  - Important Changes in the NEC
  - Overcurrent Protection & NEC Article 240
- New PV Power Electronics Technologies:
  - Microinverters, DC Optimizers, AC Modules
- Ungrounded PV and Non-Isolated Inverters: Code & Installation Considerations
- Field Inspection Guidelines for PV Systems
- Inspections of PV Systems: Best and Worst Practices

## Tuesday 9-6pm

- Enphase Energy Microinverters & AC Batteries
- **LAB DEMO: Microinverters & AC Batteries**
- EXERCISE: PV System Design (SolarWorld, SMA)
- The Qualified Solar Pro: NABCEP Certification
- DEMO: Solar PV System Design Software
- TOUR: CED Greentech Solar Distributor

### **The Complete Advanced PV Power Package**

3 courses | 80 hrs | 15% discount: **\$1695\***

Foundations Online = \$695

+ 5 Day Workshop = \$1295\*

+ Bonus PV Technical Sales Short Course

**Priced Separately = \$1990 total**

**\* Plus get \$200 early-bird discount by registering 60 days before starting date of workshop**