Single-Inductor Single-Sensor Multi-Channel Distributed PV Solar System

Contact: Dr. Rick Swatloski
Director - OTT
(205) 348-8583
RPSwatloski@ua.edu

Status: Seeking R&D and/or licensing partner

Inventor: Dr. Jaber Abu Qahouq
Associate Professor
Electrical and Computer Engineering

Advantages of Single-Inductor Single-Sensor Multi-Channel Distributed PV Solar System

- Current common low-cost PV solar systems utilize a centralized architecture
  - Single centralized power converter with maximum power point tracking (MPPT) control
  - Large numbers of PV panels are connected in series and parallel to generate high voltage and high power/current.

- This allows for higher efficiency with reduction of partial shading and mismatching effects
  - Yet, dramatically increases the number of power converters, sensors, and controllers needed

- Our technology is a multi-channel with multiple PV panels or cells solar system
  - MPPT (Maximum Power Point Tracking) Control
  - With only a single inductor, a single power converter, a single sensor, and a single MPPT controller.

Figure 1. Scheme of Single-Inductor Single-Sensor Multi-Channel distributed PV solar system

For More Information, Click to View YouTube Pitch