

## **Ambient temperature effect on Amorphous Silicon (A-Si) Photovoltaic module using sensing technology**

### **ABSTRACT**

Temperature and solar irradiance are the two dominating cardinals that determine the electrical performance of Photovoltaic (PV) module. In this paper, an experiment is conducted considering Amorphous Silicon (A-Si) PV module in both indoor and outdoor condition to investigate the temperature effect on A-Si module's performance in terms of efficiency and output power through an automatic resistor selection system. The experimental result shows that A-Si PV module has small temperature coefficient effect; however it has higher effect on solar radiation coefficient. A comparison analysis is evaluated with different models to validate the experimental data.

**Keyword:** Amorphous silicon; Photovoltaic module efficiency; Temperature effect; Module operating temperature