

A simple improvement of off-grid solar photovoltaic panel using integrated reflector

This work presented a simple method to improve electric-energy generation of solar photovoltaic (PV) panel using an integrated-mirror reflector. The reflector was integrated with PV panel and adjusted incline angle to optimize better sunlight collection. The PV performance was evaluated from current and voltage, which were recorded by Arduino data logger. The integrated-reflector PV panel at the appropriate incline angle of 70 degree presented the increasing ability of electric energy around up to 9.38% higher than a conventional PV panel. The result occurred because reflector gained more sunlight to the PV panel. This demonstration suggests an alternative method for increasing performance of solar PV system without an extra-PV installation, which should be beneficially considered for a low-cost management of solar PV system.

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