

## Performance evaluation of CdTe BIPV roof and façades in tropical weather conditions

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### ABSTRACT

This study investigates the performance of thin-film cadmium telluride (CdTe) building integrated photovoltaic (BIPV) arrays (façade and roof) under tropical weather conditions in Malaysia. This investigation observed the variation in performance ratio (PR) for each façade oriented in different directions and the roof. Average annual PR for 7 kW flat roof, 2.3 kW façade in east and west, and 5.5 kW façade in north are 76.26%, 71%, 70.53%, and 66.42%, respectively, and corresponding energy losses are -23.6%, -28.8%, -29.4%, and -33.6%. It is identified that a façade oriented in north direction performs lower when compared to other façades and the roof.

### KEYWORDS

Solar energy; Building integrated photovoltaics, BIPV façade, CdTe PV module, Performance ratio

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