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Performance of Nine Different Types of PV Modules in the Tropical Region

Authors : Jiang Fan

Abstract : With growth of PV market in tropical region, it is necessary to investigate the performance of different types of PV technology under the tropical weather conditions. Singapore Polytechnic was funded by Economic Development Board (EDB) to set up a solar PV test-bed for the research on performance of different types of PV modules in the country. The PV test-bed installed the nine different types of PV systems that are integrated to power utility grid for monitoring and analyzing their operating performances. This paper presents the 12 months operational data of nine different PV systems and analyses on performances of installed PV systems using energy yield and performance ratio. The nine types of PV systems under test have shown their energy yields ranging from 2.67 to 3.36 kWh/kWp and their performance ratios (PRs) ranging from 70% to 88%.

Keywords : monocrystalline, multicrystalline, amorphous silicon, cadmium telluride, thin film PV
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