

Thermal Performance of Hybrid PVT Collector with Natural Circulation

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Abstract : Hybrid photovoltaic thermal (PVT) collectors allow simultaneous production of electrical energy thus heat energy. There are several configurations of hybrid collectors (to produce water or air). For hybrids water collectors, there are several configurations that differ by the nature of the absorber (serpentine, tubes...). In this paper, an absorber tank is studied. The circulation of the coolant is natural (we do not use the pump). We present the obtained results in our experimental study and we analyzed the data, and then we compare the results with the theory practices. The electrical performances of the hybrid collector are compared with those of conventional photovoltaic module mounted on the same structure and measured under the same conditions. We conducted experiments with natural circulation of the coolant (Thermosyphon), for a flow rate of 0.025kg/m^2 .

Keywords : experimental, photovoltaic, solar, temperature, tank

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