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Effect of Plate Materials and Ambient Conditions on The Design of Flate Plate Solar Collector

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ABSTRACT

Flat plate solar collector radiation from the sun and transfer the received energy to a fluid which passing through pipes or channels which are integrating with the collector absorber plate that has a physical properties characterized by high absorptive solar radiation and low emission called the absorption surface, typically a metal plate, usually copper, aluminum alloy and steel materials with tubing of copper in thermal contact with the plates. In this paper simple and efficient thermal system has been designed to utilize the available sun light by simple design of flat plate solar collector under different conditions which includes different climatic conditions and different types of plate materials. For each case of above it was found outlet fluid temperature, instantaneous efficiency and modifier angle factor.