

عنوان مقاله:

An Optimized Heat Sink for Thermophotovoltaic Panels

محل انتشار:

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خلاصه مقاله:

In the present work, an innovative hybrid solar panel is proposed, which can be used to pave floors or to cover roofs. A particular heat sink is employed, which gives robustness to the panel and provides a better heat transfer effectiveness with respect to tube heat exchangers. The geometry of the heat sink which is employed in the panel is optimized with the help of a numerical model and a genetic algorithm. Some optimization examples are shown. The velocity and temperature distributions on the heat sink cross section are also investigated. The presented hybrid panel allows till 20% increase in the electrical efficiency with respect to a simple photovoltaic panel. Moreover, it can be easily installed under every environmental condition due to its robustness and resistance to water infiltration.

کلمات کلیدی:

Solar panel, Heat sink, Thermal efficiency, Genetic Algorithm

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