

ABSTRACT

In this study, solar panels without thermoelectric generators were used as a reference for comparison with solar panels using thermoelectric generators to determine the effect on their electrical efficiency. The solar panel modules used were polycrystalline silicon and thermoelectric generators used in the amount of 10 1848 SP TEGs. The parameters measured in this study included temperature, current, and voltage at the lamp height 35 cm, 40 cm, 45 cm. From the results of this study it was found that tandem solar panel systems with thermoelectric generators have a greater percentage of electrical efficiency than solar panels without thermoelectric generators. Increased electricity efficiency in solar panels is caused by thermoelectric generators capable of lowering the temperature of solar panels while producing electricity. The increase in the electrical efficiency of the average tandem solar panel system with a thermoelectric generator at the light beam height of 35 cm, 40 cm, 45 cm is 0.66%, 0.74%, and 0.84%.

Keywords: electricity efficiency, solar panels, thermoelectric generators