

ABSTRACT

Thermoelectric Generator (TEG) is an electric generator device that can convert temperature differences into electrical energy directly, using a phenomenon called the seebeck effect. TEG is now often used as a generator that involves heat as a medium such as a solar power plant. According to research, Indonesia has a solar power potential of 112,000 GWp, but only 10MWp can be utilized.

Research on photoVoltaic / thermal hybrid (PV / T) heat pipe systems is one attempt to combine solar and solar solar cells derived from cooling systems for photoVoltaics (PV), then can be used to increase temperature (thermal), electricity and efficiency energy is approaching 63.65%, 8.45% and 10.26%. from the heat produced to steam, it is reused. There are also those who use thermoelectric (TE) as a cooling medium and for hybrids by utilizing temperature (thermal) which will be converted into electricity. The use of TE as a cooler or generator is used by the author as a Final Project research.

Thus the author designs generators and cooling systems that are applied to PV. Using 10 pieces of TEC-12706 arranged in series as generators and PV coolers. Then use water that is circulated using a pump for the cold part of TE

Based on the results of testing using TEC-12706, on the first day the PV temperature decreased on average 5.5 °C and the results of stress when the peak time was 0.73 V. Whereas on the second day ice water was used and a decrease in average temperature was used. 16.5 °C and Voltage 0.9 V.

Keywords: Seebeck effect, solar thermal, thermoelectric, photoVoltaic, temperature difference