

ABSTRACT

The biomass stove is one of the renewable energy technologies that has exhaust heat that can be used for electrical energy sources, which can be converted using a thermoelectric generator. In this study a thermoelectric generator system was designed to install biomass stove heat and characterize the electricity produced. The study was conducted with 2 types of data retrieval, the first to take data was carried out at temperatures of 0 to 100⁰C, and the second one to retrieve data was carried out when the temperature was in a steady state condition. Data taken is temperature, voltage, current. After the current and voltage data are obtained, then the output power is calculated. In retrieval of data when the temperature of the stove is in the range 0-100⁰C, the voltage and current values obtained are directly proportional to the increase in temperature on the stove. In retrieval of data when the temperature of the stove is in steady state, the load is carried out on the thermoelectric generator system circuit. The current and voltage start when the voltage does not change again, then the change value is increased for each experiment. From this experiment, the value of the voltage is directly proportional to the increase in substitute value added. While the value of the current produced is inversely proportional to the increase in the value of conflict. In this experiment the calculation of the seebeck coefficient which is constant with respect to temperature changes in the thermoelectric generator system is also carried out.

Keywords: Biomass Stove, Thermoelectric, Seebeck Coefficient, Current, Voltage