

ABSTRACT

Microbial Fuel Cell (MFC) is a renewable energy source technology that is currently being developed. MFC, utilizes bacterial metabolism in the substrate to generate electricity. In this research, the substrate used was a mixture of rice field mud and banana peel waste. The focus of this research is to determine the effect of temperature changes on electricity production in MFC. The MFC system to be used is a dual chamber system. This chamber will be connected to a salt bridge made from the stove axis and immersed in a solution of NaCl. The electrodes to be used in this study use zinc (Zn) and copper (Cu) plates. The temperature variations in this study were room temperature (22 ° C-26 ° C), 30 ° C, 33 ° C, 37 ° C. Each temperature variable will remain at the set point using a microcontroller, temperature sensor, relay and heater. MFC with a temperature variation of 30 ° C can produce the best voltage, which is 1V, although the current tends to be small, while the best current is produced by a variation of 30 ° C with a result of 0.26mA, after getting the voltage and current data, the resistance data will be searched to find out how much resistance it is inside. . The temperature variation of 33 ° C also has the largest internal resistance with a value of 37,056 kΩ. From this research it can be concluded that temperature affects the electricity production of dual chamber MFC with a mixed substrate of rice field mud and banana peel waste.

Keyword : *Microbial Fuel Cell, dual chamber, energy, temperature, rice field mud banana waste substrate.*