

ABSTRACT

Microbial Fuel Cell (MFC) is the one of renewable energies that can produce electrical energy through the process of bacterial metabolism in organic matter. This study aims to investigate the influence of temperature on the performance of the MFC system. The reactor used in dual chamber configuration has dimensions of 5 cm x 10 cm x 10 cm, with 2 cm x 5 cm zinc and copper as electrodes. In this study ruminant waste mixed with the mud use as substrate with electrolytes of KMnO_4 . In dual chamber system; electrons produced by bacteria from the substrate on the anode are transferred to electrode on the cathode, while the protons are transferred via a salt bridge (1M NaCl) as a proton transfer medium. The results showed that the maximum power that can be produced by the MFC system reached 0,82 W (temperature 30° C) and maximum energy was 0,54 J (t = 28th hours, temperature 32° C). Voltage gain and current strength vary for each experiment. Based on the results of the study, it can be concluded that the highest current production is produced at 37° C.

Keywords : Microbial Fuel Cell, ruminant waste, electrode, temperature