ABSTRACT

Microbial Fuel Cell is a generating system that relies on a catalytic reaction using microbes, the reaction comes from the interaction between bacteria and other compounds to produce electron and proton. These electrons and protons will cause an electric potential difference to produce electricity. Microbial Fuel Cell (MFC) is one solution to supply primary energy needs in the bioenergy field. The design of the Microbial Fuel Cell (MFC) using dual-chamber system where each chamber contains a cathode and anode, besides of that there is also a proton exchange membrane (PEM) as one of the main parts of the MFC as a separator between chambers. Proton exchange membrane (PEM) is one of the main parts in the MFC, which has functions to proton exchange from the anode to the cathode. The research focuses on the analysis of the membrane thickness was made from white cement (WPC) with 4 thickness variations on electricity production using tofu liquid waste as the substrate. Measurements were made using voltage and current sensors, measured for 15 days with daily data collection. It was found that the largest output value was on a 3 mm membrane with a maximum output value of 11 mW/m^2.

Keyword: *Chamber*, *Microbial Fuel Cell*, *Proton Exchange Membrane*