

## ABSTRACT

Microbial Fuel Cell (MFC) is a sustainable alternative energy to reduce our dependence on electrical energy. This MFC system uses a dual chamber system, where an anode and cathode are connected by a salt bridge as a proton transfer medium. This study used a variation of the length of the salt bridge using a liquid waste substrate of tofu and sludge in the anode reactor and distilled water in the cathode reactor using copper (Cu) and zinc (Zn) electrodes with a thickness of 0.3 mm and a surface area of 15 cm<sup>2</sup>. There are 7 variations of the length of the salt bridge used, namely 5cm, 6cm, 7cm, 8cm, 9cm, 10cm, and 11cm. The salt bridge material used in this study is a pvc pipe in which there is a stove wick that has been boiled with NaCl and dried in the sun to dry then put into the pipe. Data were collected for 7 days every 2 hours, voltage and current data were taken using a multimeter. The results showed that the peak value of voltage, current, and the highest power density was in the first reactor. The highest voltage is 0.925 mV, while the highest current value is 0.930 mA. The power density value obtained is 546,840. So it can be concluded that the shorter the salt bridge, the greater voltage.

Keywords: Microbial Fuel Cell, wetland sludge, tofu liquid waste