ABSTRACT

Microbial Electrolysis Cell (MEC) is a relatively new technology for producing hydrogen gas (H_2). The purpose of this research is to see the effect of fermented and unfermented substrate variations and to see the effect of voltage on the hydrogen gas produced. In this study using pineapple peel as a substrate. The fermented substrate will use yeast for the fermentation process. Both substrates will be pre-treated first. The MEC reactor uses two chambers, the substrate will be inserted into the anode and the cathode chamber will be where hydrogen gas is formed. The two chambers will be connected by a salt bridge. The power supply will be a voltage source to be injected so that hydrogen gas (H_2) can be formed. In the test, it was found that MEC using pineapple peel can produce hydrogen gas. At 1.2 Volts, the most gas is 1546 PPM (fermented) and 1064 PPM (not fermented). Voltage and Substrate Type have a huge effect on hydrogen gas production.

Keywords: *MEC, Hydrogen Gas, Substrate, Voltage.*