ABSTRACT

Microbial Fuel Cell is one of the type of renewable energy to produce electricity continuously. Microbial fuel cell or we can call it MFC is a bioreactor that used to transform chemical energy to electrical energy using the compound organic to make catalystic reaction for microorganism. Electric energy that produced from sewage treatment for MFC have a potential for source of energy. The purpose of this research is to proof that coating the metal electrode with carbon can make the electric energy that produced is increased. This is caused by the nature characteristic of carbon that have the capability to absorb better than any material. So hoping that it will absorb more electron to transfer so it can increase the voltage that produced by the MFC itself. Metal electrode that used to be coated by carbon is zinc and copper. First method is using electrolysis to make the coating by transform the electric energy to chemical energy. The second is coating using carbon paste that can be obtained by mixing active carbon, pvdf, black carbon, and NMP. Then the paste is applied to the metal so it will coat the metal. After coating the electrode then the electrode will be apllied to the microbial fuel cell to see the difference between them. And the result is the voltage and current that produced is increased with the electrode that coated with carbon paste. and the other electrode is producing a not stable voltage and the current because the coating itself might be harm the microbe, so it makes the electron not well functioned. The other conclusion is that the coating itself is blocking the electron to transfer so it makes it not stable. The highest average voltage and current that produced is 0,94 V and 0,75 mA with carbon paste electrode and using inlet waste water as the substrate

Keywords : Microbial Fuel Cell, Electrolysis, Electrode, Coating