

ABSTRACT

The search for clean and renewable energy resources have led to the discovery of Microbial Fuel Cell. It is much studied in the present day as it can solve two environmental problems simultaneously that is treating waste water and generate electricity in the process, without emission of any harmful gases. Microbial Fuel Cell is a fuel cell that uses microbes to generate electricity. The electron and proton generated in the process of metabolism of the bacteria are used to produce electricity. Just like a chemical fuel cell, it consists of anode, cathode and Proton Exchange Membrane. Due to its disadvantage of low power generation, it is not being used in practical circuits, but many researchers are trying to scale it up so that it could generate enough power to compete with the other renewable resources.

The present work aimed to study about the voltages generated in a Microbial Fuel Cell, using different substrate, different electrode materials, different Proton Exchange Membrane material, different numbers of electrode and different percentage of seed inoculum. The open circuit voltage was observed for at least 7 days and the current across the circuit was also measured. The maximum generated voltage observed in this study was 810mV using charcoal electrode.

Key words: Microbial Fuel Cell, Proton Exchange membrane, electrodes, mediator, open circuit voltage, multi meter, bacteria.