

# Experimental Study of the Effect of Variation in Surface area of the Electrodes on the Output of Microbial Fuel Cells

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**Abstract**—*The Microbial Fuel Cell (MFC) is an interesting technology that exploits microbial activities to generate electrical energy. A MFC is a bio-electrochemical system that generates a current by using bacteria and impersonating bacterial activities found in nature. The basic idea is to collect the electrons released by microbes during their metabolic processes, using some metallic electrodes.*

*The paper is an attempt to study the effect of variation in the surface area of the anode on the output of the MFC. It includes a graphical representation of the data obtained by varying the dimensions of the anode. Graphite was used as the anode material and zinc was used as the cathode. The cathode area was kept constant and the anode was varied in dimension. The corresponding current and voltage readings were noted using a multimeter.*

*It was found that the current increased non-linearly as the anode surface area was increased, but became constant after increase in surface area to a particular limit. The voltage readings obtained were more or less constant. The graphical representation gives a better picture of the relation obtained.*