Microbial Fuel Cells in Water

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Production of energy from fossil fuel can cause a bad impact on the environment and destroy a vital source of raw material for other industries, recently electrical energy becomes more important as the world can produce it in many ways and utilized it in a lot of industries. Our project aims to produce power from agricultural wastewater. The problems that we confronted and attempted to overcome were the expensive materials and some of them are unavailable in houses. Moreover, less effective for some types of electrodes. The project mainly depends on electrogenic bacteria as the powerhouse of the cell. Carbon electrodes, salt bridge, agriculture wastewater, and citric acid were used in the project. The electrodes and proton exchange membrane were chosen according to the test plans and suitable cost. The methods were pretty simple to be made at home; as the wastewater is put within the anode chamber and tap water within the cathode chamber and connect them with a salt bridge, at that point activate the bacteria with the substrate (citric acid). According to the results; the carbon electrodes were chosen considering their efficiency and cost and the citric acid substrate was chosen according to its availability (as it's found everywhere), efficiency, and cost; as they produced 0.22 volts. In conclusion, by adding citric acid (substrate) to the wastewater, the efficiency of the cell increased.

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