A Billion Powerplants: Could Microscopic Organisms Lead to a Future of Environmentally Friendly Electricity?

Pameticky, Kylee (School: Fairview High School)

The purpose of this project is to test whether or not bacteria can produce enough electricity to eliminate the need to use electricity that comes from a power plant. The question proposed is as follows: Can microbial fuel cells produce enough electricity to charge an electronic device? Because power plants use renewable resources and leave hazardous byproducts, a new way of creating and using electricity is needed. Bacteria are commonly found in livestock manure and in the soil and dirt that make up the ground. A collection of mud from several different pastures was collected, saturated with water, and placed into containers containing an anode and cathode. The electrodes were then hooked to an LED light which then began to flash after the ubiquitous bacteria in the mud were able to grow. The goal of this project was to charge an electronic device, but a quantifiable measurement could not be found and therefore it cannot be said whether or not the device charged or not. What was proven, however, is that the biofuel cells did produce a measureable amount of electricity. By using these cells on a larger scale and with better equipment, greater amounts of eco-friendly energy could be produced.

Awards Won: