Generating Electricity from Mud

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The purpose of this project was to build a basic fuel cell using loamy mud and use it to generate electricity. A variety of types of mud were initially used to find out which would generate the most electricity. Then various chemicals were added to the selected mud and these second generation fuel cells were again used to generate electricity. The best of these were used to create a battery in which bacteria flourished over a matter of 15 days and output was again measured. Various types of mud were collected and put into beakers, together with copper (+) and zinc (-) strips in the mud making up a fuel cell and then electrical output was measured using a voltmeter. The mud that created the greatest output was selected and 6 different chemicals were added, one to each fuel cell and again the voltmeter measured the voltage produced by the mud and the different chemicals. After experimentation on fuel cells made of 3 mud types, the loamy soil mud was selected to make second generation fuel cell as it had the greatest output. 200 ml of the various chemicals at concentrations of 2.5 mol.dm-3 were added and after further experimentation, sodium chloride was shown to be the additive with the greatest electrical output. Electricity was generated from the battery with loamy soil mud and sodium chloride.The power output of the mud was increased from 0.2 volts to 7.2 volts in 2 weeks by the addition of sodium chloride to the mud.

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