

Electrochemical Application in a Battery with the Use of Fuel Cells

Melendez Campos, Justin

Soto, Joshua

There is concern with respect to cars as producing environment contamination. This has led to the creation of hybrid cars also known as "sustainable cars". Is it possible to use the electrochemical application on a battery using fuel cells? The hypothesis was: When deciphering the blueprints for the construction of an electrochemical battery, the sustainability of the system will be achieved. A system using water and salt as the electrolyte plus copper and magnesium electrodes, yielded 0.16 ampere and 1.8 volts. Based on this voltage we prepared a battery blueprint based on 162 modules of 226 cells placed in series and parallel that would generate 405 volts which multiplied by 0.16 ampere would produce 64.8 watts. The aforementioned amount of 162 modules would get about 10,500 watts. A prototype was created using a water circulation pump that would allow the water to run consecutively around the battery to keep the electrodes running and producing voltage. We returned to the previous prototype by adding a sponge system, which allowed the filtration of the electrolyte and the contact of electrodes keeping the cells wet at all times in order to produce voltage. The experiment was a success since it generated a voltage of 5.6 volts. The projection is to improve the prototype by changing the circulation system for a fog system. Our project would be beneficial for robotics and missions to Mars.

Awards Won: