Hydrogen Generation and the OER Electrode

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My project is to see what electrode produces the most hydrogen in the process of hydro-electrolysis. I chose to test for the amount of hydrogen produced rather than the amount oxygen produced because since I used a graduated cylinder with a plus or minus 0.1 mL error it made more sense to test hydrogen since the test would produce double the amount of hydrogen than oxygen, meaning a less chance of error. In my project, I tested fifteen different types of electrodes on a cathode and a copper electrode on an anode in water. I connected the anode and cathode to a D.C. voltage conductor through gator clamps and electrical wires. Then I tried to see how much hydrogen would be created. At the end of my trials I found out that the Nickel and Iron combination created the most hydrogen at the 24 volt stage with 33 mL of hydrogen meaning that it produced about 16.5 mL of oxygen. The reason why I did this project was because I want to continue this project next year and create a mask that can be used underwater to convert the water into hydrogen and oxygen to let divers breathe underwater without having to use a heavy breathing tank that could cause back problems in the future.

Awards Won: