The Best Electrode Spacing for the Generation of Hydrogen as a Clean Energy Source

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In this research project, the best electrodes spacing for a hydrogen gas generation as a clean energy source was investigated. To generate hydrogen gas, the process called electrolysis was applied to a salt water solution. A homemade hydrogen generator was created using aluminum plates as electrodes and 9 volts as power supply. The generated gas was measured using a homemade manometer in a five second time interval. Two electrodes with a gap between them of 1 3/8 in., was the control variable and used as a comparison with the following spacings: (1) a gap of 5/8 in., (2) a gap of 1 in., and (3) a gap of 1 3/4 in. The results obtained showed that the spacing that generated more hydrogen gas was the spacing with a gap between the electrodes of 1 3/4 in, followed by the spacing with a gap of 1 3/8 in. (Control variable). The spacings with a gap of 1 in., and 5/8 in., showed a poor hydrogen gas generation. Therefore, these electrodes spacing with a greater gap between the electrodes generated more hydrogen gas. This investigation helped to learn that for any given experimental conditions, there is an optimum gap between the electrodes where the efficiency of the water electrolysis process can be maximized. For future experiments, renewable energy shall be used as the electricity source instead of a power supply for the hydrogen generation to be a totally clean energy source.

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