The Impact of Various Liquids on the Mobility and Energy Absorption of a Rotating Solar Tracker

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Many modern solar energy systems have adopted a mobility system over an immobile panel, but is it worth the cost, and is it much more efficient than an immobile system? This project tests the hypothesis that the least viscous liquid will result in greater efficiency in the system. For this project, a solar tracker was constructed for testing, where the mobility of the model was centered around the evaporation of liquids. For four days, each substance (water, oil, hydrogen peroxide) is experimented with the rotating solar energy system for three hours, including a trial with no substance. Each sample is tested for the average voltage, which was used later in a one-tail t test. Compared to the trial with no substance (mean voltage of 19.75 volts), the three substances did not perform efficiently (mean voltage of water=19.75, mean voltage of oil=19.80, mean voltage of hydrogen peroxide=20.03). Hydrogen peroxide had the highest recorded voltage but did not have any significant data (p=0.19). This study showed that the viscosity of the substance did not have an impact on the efficiency. Further experiments will define the differences between each substance.

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