CALIFORNIA STATE SCIENCE FAIR
2010 PROJECT SUMMARY

Name(s)
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Project Number
J1029

Project Title
Juice It with Juice

Abstract

Objectives/Goals
My objective was to find out which juice (blackberry, cherry, pomegranate, or raspberry) makes the most power in a nanocrystalline dye sensitized solar cell.

Methods/Materials
I made four nanocrystalline dye sensitized solar cells using tin dioxide coated conductive glass, titanium dioxide powder, nitric acid, graphite, and iodide electrolyte with each of the four juices. Using an overhead projector for a steady source of light, I tested each solar cell for volts and amperes. I then multiplied the volts and amperes of each solar cell to find out the power in watts.

Results
The nanocrystalline dye sensitized solar cell made with the blackberry juice made the most power with 0.875 watts. The solar cell with the pomegranate juice came second. It made 0.3 watts.Next was the solar cell with the raspberry juice making 0.16 watts. The solar cell that made the least power was the one made with cherry juice. This one made only 0.02 watts.

Conclusions/Discussion
I found that the nanocrystalline dye sensitized solar cell made with the blackberry juice made the most power. Whether the results were because of the color or some other reason, I'm not sure. To make the results more accurate, next time I would make more solar cells.

Summary Statement
My project was to figure out which juice (blackberry, cherry, pomegranate, or raspberry) makes the most power in a nanocrystalline dye sensitized solar cell.

Help Received
Mother helped cut paper; Used equipement from Willits Charter School under the supervision of Erin Vaccaro.