CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY

Name(s)
Jaden A. Luna

Project Number
J0212

Project Title
How Weather Affects a Photovoltaic Polycrystalline Solar Panel and Researching Various Methods to Increase Efficiency

Abstract

Objectives/Goals
The purpose of my project was to find what weather patterns affect a solar panel the most and how to increase the panel in negative and positive patterns.

Methods/Materials
Small PV (photovoltaic) Polycrystalline solar panel, large PV Polycrystalline panel, voltmeter, colored acrylic sheeting, Fresnel lens, prismatic light distributor, apple watch, and a foil reflector.

Results
I found that temperatures ranging between 55-60 degrees Fahrenheit with cloudy skies, but direct sun was optimal weather. The Fresnel lens when concaved forming an enhanced ray, was the best modifier.

Conclusions/Discussion
My project elaborates on how humidity effects a solar panel positively and it also shows how the Fresnel Lens, when concaved forming an enhanced ray, increases the voltage and amperage output of a solar panel.

Summary Statement
My project was designed to show how weather effects a solar panel and how to increase the efficiency.

Help Received
I had assistance from my parents with supplying my materials that were needed. I received advice on how to graph my data from Rick Spurlock, IHI Power Services West Region Director.