



**CALIFORNIA STATE SCIENCE FAIR
2011 PROJECT SUMMARY**

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Project Title
A Bright Idea: Solar Cell Power Using CFL and Incandescent Light Bulbs

Abstract

Objectives/Goals
The problem I am trying to solve is what light bulb can produce the most electricity in a solar cell. The two light bulbs that I have tested are the CFL (Compact Fluorescent light) bulb, or the Incandescent light bulb. I am hoping that I will see that the CFL bulb produces the most amount of power in the solar cell due to the amount of light it illuminates, compared to the dimmer yellow light that the Incandescent produces.

Methods/Materials
I will:
1) Install incandescent bulb into lamp attached to box.
2) Measure resistance that the resistor will output to get a clear reading.
3) Place solar cell 2 feet away from light bulb, n a closed box.
4) hook up volt meter to solar cell to measure the volts.
5) Turn on incandescent bulb and leave it on for one minute.
6) Measure how many volts the solar cell produces.
7) Calculate how many amps the solar cell creates by dividing the volts over the resistance to get our current.
8) calculate how much power the solar cell creates by multiplying the current times the volts. We measure power in watts.
9) Repeat the experiment using the CFL bulb.
10) Compare how much power each light bulb produces.

Results
The CFL bulb appeared to produce less power than the Incandescent, it only produced about 1/3 of the power that the Incandescent produced.

Conclusions/Discussion
I believe that the reason as to why the CFL only produced about a 1/3 of the amount of power that the incandescent is as follows. The random wave lengths of light that the Incandescent produces, s in fact, "true light". True light is something such as the sun, which heats up so much that is produces light. The CFL bulb has more of a chemical background and produces a steady stream of light. That is my Conclusion.

Summary Statement
To see whether a CFL light bulb or a Incandescent light bulb can produce the most power i a solar cell.

Help Received
My Father helped me sodar two solar cells together to creat one solar cell.