



**CALIFORNIA STATE SCIENCE FAIR  
2008 PROJECT SUMMARY**

<b>Name(s)</b> Steven T. Lin	<b>Project Number</b> <b>J0822</b>
<b>Project Title</b> <b>Exploring Photovoltaic Solar Cell Efficiency with Different Wavelengths of Light</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> My project explored the relationship between different wavelengths of light and the output of solar panels. This is beneficial to society because it may provide an alternate way to produce more electricity for the growing world population. This project was designed to see if different wavelengths of light actually stimulated the solar cell to produce more energy.</p> <p><b>Methods/Materials</b> This experiment was done by shining different wavelengths of light on solar panels and measuring their output by charging a battery and measuring its voltage. I made a graph to show the trend the data took and which one was better during the period of time I did my experiment.</p> <p><b>Results</b> During my project I found that the first minute decided the three trends. When I finished performing my experiment, I found that the simulated visible light, the incandescent bulb, preformed the best and that ultraviolet preformed the worst. The infrared light generated a medium amount of energy.</p> <p><b>Conclusions/Discussion</b> From my project I concluded that there is no apparent relationship between wavelength of light and the amount of charge generated by the solar panel. This could have happened because the generic solar panel is tuned to accept light from the sun, which is similar to incandescent light. This shows that if we used ultraviolet or infrared light to power solar panels, it would not be as effective as normal light.</p>	
<b>Summary Statement</b> My project explored the relationship between different wavelengths of light and the output of solar panels	
<b>Help Received</b> Mother, Brother, and Father all provided guidance; Robert Boucher helped with the plugs and wattmeter	