



**CALIFORNIA STATE SCIENCE FAIR
2008 PROJECT SUMMARY**

Name(s) Gareth C. Wang	Project Number J0836
Project Title Building and Testing a Solar Powered Car So That It Is Able to Run at Night	
Abstract Objectives/Goals The goal of this project was to build and modify a solar powered car so that it is capable of running at night. Methods/Materials I designed and built a basic solar car and made modifications to it and tested it. To see if I could make it run at night, I tested five versions of the car, each with different numbers and types of rechargeable batteries and different numbers of solar panels. In my test, we measured out a twenty foot long track and timed how long it took each version. I did this several times with a stopwatch. Results Results indicate that the fastest car for the 20-foot dash was Tai Yang 4 with two or seven rechargeable batteries. Their average time was 20 feet in 6.7 seconds. With no batteries and just solar panels, the car went 20 feet in an average time of 20 seconds. With one rechargeable battery, it went 20 feet in an average time of 14.7 seconds. With four batteries, the car went 20 feet in an average time of 7 seconds. We also tried a combination of seven rechargeable batteries and four solar panels. The car with that combination went 20 feet in 10.5 seconds. Conclusions/Discussion I concluded that the biggest improvement we made in our project was putting on the rechargeable batteries because this helps the car run at night and move faster than with just solar panels. The second biggest improvement we made was to use NiMH batteries instead of NiCad because we could actually make the car move. The third biggest improvement we made was to add the electric circuit engine that allows the solar panels to charge the batteries, and add a light, which also helps the car run at night.	
Summary Statement Building and testing a solar powered car so that it can run at night.	
Help Received Father helped explain basic electronic principles. Father helped get parts to build car. Father launched car during testing runs while I timed car.	