Solar Engine Applications II

Loken, Sean

The purpose of doing a project like this is that the world is dependent on fossil fuels. There are a few different ways of producing renewable energy. Solar energy is one of them. Over the course of three years, the GBSE solar engine has undergone several modifications to make it more effective in using the energy that is collected. I will be comparing this year's GBSE II configurations to last year's GBSE II configurations, along with a microcontroller. The tests that were conducted were an average voltage test and a pulse test. I placed the different GBSE II configurations 20cm and 30cm away from a vertical and a horizontal light source. The light source was the 100 watt white light. I found that the different configurations of the GBSE II performed effectively with the different angles and distances. In most tests, the microcontrolled GBSE II configurations outperformed last year's and this year's configurations. Depending on the demands of the configuration and the distance from the angled light source would determine how the different GBSE II configurations would operate. I found that the microcontrolled GBSE II configurations that were made this year, were on average, better performing. The microcontrolled GBSE II configurations produced higher voltage readings due to the microcontroller forcing the servo to stop, and then readjust to the changing light conditions in a controlled manner. By readjusting at a controlled rate, the servo used less energy immediately when compared to the autonomous light seekers, whose servos were readjusting constantly.

Awards Won: