Colorado Science and Engineering Fair

2024 Team Project Abstract Form

Please print 2 copies of the completed form. Sign both copies, keep 1 for your notebook and submit 1 copy to your Regional Fair Director with your other paperwork.

Title of Project: Measuring Solar Panel Performance with the Reflected Laser Beams

Team Leader's Name: Adalynn Mason

Team Member 1: Adalynn Mason

Team Member 2: Ema Sandlin

School and City: Brush Secondary Campus, Brush

Sponsor's Name: Brandie Bellefeuille

Category: Physics & Astronomy (PHYS)

Division: Senior (9th - 12th grades)

Abstract (250 words or less):

The purpose of this project was to see how indirect light helps with the use of solar panels. The problem is determining how reflection impacts solar panel output. We set the solar panel up and had the lasers and convex mirrors in our hands together. We put the mirrors at an angle, that way they would have the light reach the panel. We gathered the voltage data using a multimeter and repeated the steps. The independent variable was the distance from the mirror. Our dependent variable was the voltage from the lights shining on the panel. They are related because the mirrors dealt with the laser light that went onto the panels. The laser lights affected the voltage number by bringing it up. A success of this project included data being easy to gather. Another success was correctly gathering data from the multimeter because we tested the multimeter several times to make sure the readings were correct. Next time we might take more time to use other materials and solar panels to experiment with. We think the results somewhat helped to understand the hypothesis. We realized that if the light is not too direct then it affects how much power is shown. The results were that the direct laser light had lower voltage results than the convex laser light reflection did.

We hereby certify that the above statements are correct and the information provided in the Abstract is the result of one year's research. We also attest that the above properly reflects our own work.

Team Leader's Signature: Adalynn Mason Date: 03/04/24

Team Member 1's Signature: x Ema Sandlin Date: 03/04/24

Team Member 2's Signature: _____ Date: _____

In addition, all students must complete the ISEF Student Checklist (1A), Research Plan, Approval Form (1B), and Checklist for Adult Sponsor (1), and any other ISEF forms required for this type of project. See the International Rules and Guidelines for form requirements. Return COPIES of all of these forms to your Regional Fair Director with your Finalist Verification/Permission Form. A signed copy of this form must be included in your notebook.