CALIFORNIA STATE SCIENCE FAIR
2009 PROJECT SUMMARY

Name(s)
Nicholas Vanhecke

Project Number
J0925

Project Title
Solar Powered Electromagnetic Propulsion: Eco-Friendly Solution for the Existing Rail Infrastructure

Abstract

Objectives/Goals
The purpose of my science project is to find out if the existing rail infrastructure in the United States could be changed into a rail system powered by electromagnets rather than diesel engines. The rail system would then replicate a simpler version of the Maglev train in Japan. The rail infrastructure could be made into a completely eco-friendly transport system.

Methods/Materials
I have built a 1:43 scale replica of a train and the track it is running on. The electromagnets are controlled by my computer through an electronic relay board. The electromagnets are powered by a deep cycle battery that is charged by an Ultraviolet Light Panel. The train was tested by how far the electromagnets were spaced apart and by how many electromagnets were turned on at the same time.

Results
The train reacted differently to all my tests and was definitely affected by the number of electromagnets on and how far they were spaced apart. The Ultraviolet Light Panel was able to charge the battery efficiently.

Conclusions/Discussion
My conclusion is that this system of rail transport is very effective and could one day become reality through more research and further development.

Summary Statement
My project is about alternative eco-friendly transportation systems that could eventually replace the existing modes of mass public transport.

Help Received
Father helped with the use of power tools and some assembly of Solar Panel Mount.