CALIFORNIA STATE SCIENCE FAIR
2010 PROJECT SUMMARY

Name(s)
Alex Hang; Duy Nguyen

Project Number
S0907

Project Title
The Applications of Resonant Energy Transfer via Inductive Magnetic Coupling

Abstract

Objectives/Goals
To manipulate factors in order to maximize efficiency output, increase the transmitting power and finally, to integrate applications to everyday use.

Methods/Materials
RF amplifier
Oscilloscope
Function generator
Copper coils/tube
LED
Incandescent light bulb
Power outlet
Multimeter
Meter Stick

Results
During our experimentation, we were able to power LEDs wirelessly at an approximate range of 3 feet.

Conclusions/Discussion
In the end, we were able to successfully light a gauge 18 copper coil, with 20 revolutions, that has 2 3volts LEDs; the coil was resonating at 3.38 MHz and had a max distance of 60 cm. Many of the other coils reached similar progress. It is possible to light all six coils at once using only one transmitter, the circular loop that was created by alligator clamps. We discovered that 2.1 MHz all the lights lit up.

Summary Statement
We are trying to power electronics wirelessly

Help Received
Mr. John Allen