



Colorado Science and Engineering Fair

2024 Individual 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: Jolts For Volts

Finalist's Name: John Butler

School and City: West Grand High School, Kremmling CO

Sponsor's Name: Emmylou Harmon

Category: Engineering (ENGR)

Division: Senior (9th - 12th grades)

Abstract (250 words or less):

How can I charge my phone in the woods or when the power goes out with no batteries or electricity from your house and how can I make it efficient. First you are going to go get some by 1 inch magnets and some 3/4 inch PVC pipe. You also need some 30 gauge wire and some cotton balls to let the magnets not hit the stopper so they would not chip. After you get the supplies you need to go to an open table and cut a piece of PVC to about 6 inches. After you cut the PVC you get your 30 gauge wire and wrap the wire starting a 1 inch away from the middle making sure that you have 6 inches of tail when you start. and go across to the middle and then 1 inch to the opposite side rapping the wire, you keep rapping until you get to 1000 rapes around the pipe and cut it about 6 inches away from the last rap leaving a tail. When you get done rapping the wire you are going to get the magnets and put them in the opposite direction so they do not pull together and then get a piece of plastic that fits on the outside of the 3/4 inch PVC pipe and glue a cotton ball to the end of it and then glue the plastic piece with the cotton ball side in the pipe and glue it and repeat for the other side. After 10 trials I did not get the shakable phone charger to charge a phone. My goal was to make a shakable phone charger to charge a phone in your backpack. I have learned that I have not yet found a way to use a magnet to make enough volts and amps to charge a phone. Another thing that I learned is that you can plug in a lot of different components, such as, diodes, capacitors, and resistors to help with wiring and how the magnets work differently when they move over different distances or attract or repel each other and how they like to go opposite ways because if they are connected they do not produce as much voltage as when they are opposite. My next steps would be to use a larger rechargeable battery and find a way to get my voltage into the batteries.

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

Finalist'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 you Finalist Verification/Permission Form. A signed copy of this form must be included in your notebook.