

CALIFORNIA STATE SCIENCE FAIR 2008 PROJECT SUMMARY

Name(s)

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Project Number

J0823

Project Title

Generation Nation: Generating Electricity with Everyday Motion

Abstract

Objectives/Goals

The general objective for this experiment is to utilize everyday motion of the human body to generate electricity using methods which can convert kinetic energy into electrical energy.

Methods/Materials

In its current stages, my project consists of these materials:

#Small electric motor

#4 gears (3 which are approx. 2 cm diameter, one 1 cm diameter)

#Electrolytic Capacitor (1 microfarad)

#Voltmeter

#4 Diodes

#Solder

#Connector Blocks

#Large Velcro Strap

#Elastic Band

#Some Tape and Wire Tie

#Some medium wire for interconnections

#Stiff wire for swing arm to attach weight

(Made from an old coat hanger)

#Small weight

(Used old battery)

Results

After my data was collected, I had sufficient knowledge to answer my question effectively. My natural motion was converted into electricity at about a rate of 40 millivolts for 1 calorie, this was achieved by utilizing a pendulum, attached to my leg, moving an electric motor. Now my generator is functioning, I now must try for new variations of more efficient systems and methods.

Conclusions/Discussion

The ever-moving human body has much more potential than the transportation of ourselves, but that of energy creation. This technology could be used in many different fields and situations, everything from LED enhanced clothing to a soldier's back-up walkie talkie generator. I hope that, eventually, everybody will have their own personal generator which suits their needs, whatever they may be.

Summary Statement

This project attempts to generate electricity using my natural body motion.

Help Received

My father and brother helped me use the soldering iron.