CALIFORNIA STATE SCIENCE FAIR
2016 PROJECT SUMMARY

Name(s)	Project Number
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Project Title

Pre-Cycling before Recycling

Abstract

Objectives/Goals

The objective of this study was to explore the possibility of extracting more power, and extending the life of single use batteries that are considered dead, and altimately discarded.

Methods/Materials

For the purpose of this experiment, a self-ocillating circuit with the unique ability to extract nearly all of the power, far below the voltage were other circuits consider the battery fully discharged was constructed. Materials used for this experiment: Torid Core, 25 gauge wires, transistor, resistor, LED bulbs, new, and discarded AA, and AAA batteries, Bread Board, soldering iron, and flashlights.

Results

It became clearly evident that AA, and AAA batteries once stopped powering the flashlights, still retained 50% of their energy. These dead batteries with the help of my circuit, were able to power LED bulbs for many additionl hours.
Discarded AA battery: Ran for and additional 16 hours and fifty minutes.
Discarded AAA battery: Ran for an additional nine hours and thirty minutes.

Conclusions/Discussion

179,000 tons of batteries are thrown away prematurely each year. The energy used to manufacture them is 50 times greater than the electrical energy they produce. The single largest source of mercury is found in household batteries, and most of them end up in our landfills. My circuit operates by taking the direct current from the battery, amplifing it to a higher voltage at the expense of the current, and delivering it in pulses. This self-oscillating circuit, can dramatically extend the battery life.

Summary Statement

This self-oscillating circuit, can dramatically reduce the amount of mercury, magnesium, and zinc that are commonly found in batteries. Hence the term "Pre-cycling Before Recycling".

Help Received

I built the circuit by my. My parents drove my to different stores to buy the components for this experiment.