CALIFORNIA SCIENCE & ENGINEERING FAIR
2019 PROJECT SUMMARY

Name(s)

Malia Chheng

Project Number

J1705

Project Title

Induction Heating

Abstract

Objectives

The purpose of my project is to figure out and determine the efficiency rate of using a copper coil as a heating element. In a sense, induction heating versus modern day stove tops and hot plates. The reason I am doing this experiment is to verify and figure out if induction heating is more effective at being the greater originator of heat, thus possibly in the process of showing that maybe new technology can look as if it is better yet, in all actuality whether it be old or new methods are still methods.

Methods

I am using different heating producers such as, stovetops, hot plates, and induction heating copper coil, and I will be also using 1.4 grams of galvanized steel wire. I will be using these products to determine if older methods of heating will surpass the more modern day stovetops and hotplates and better help the future with improving engineering methods for new age stovetops. I am using stovetops, hot plates, copper coil, and galvanized steel wire because the most basic household items included in a house is the stovetop.

Results

The results of my investigation on the efficiency of induction heating, using copper coil as a heating element versus modern day uses of heating, such as stove tops and hot plates (the electric ones) indicate that when concerning induction heating, the induction heating method is a faster and more efficient way regarding metal and heat.

Conclusions

After concluding my experiment on the efficiency of induction heating versus modern day heat producers, stove tops and hot plates, I found that my hypothesis of induction heating benefiting the party interested in heating metal, or similar aspects more than cooking induction heating would win the induction heating vs. modern day heating elements. When comparing the amount of time to turn the galvanized metal red the average for using an induction copper coil heater, was 24 seconds. On the other hands the average for using a stovetop was 12 hours 24 minutes and 58 seconds, and the average for using a hot plate was 12 hours 44 minutes and 21 seconds.

Summary Statement

Induction heating was more efficient way of heating copper.

Help Received

Joseph Linares, Jewely Lickey