جامعة الملك فهد للبترول والمعادن
King Fahd University of Petroleum & Minerals

Inductive Heater

PHYS403 Project

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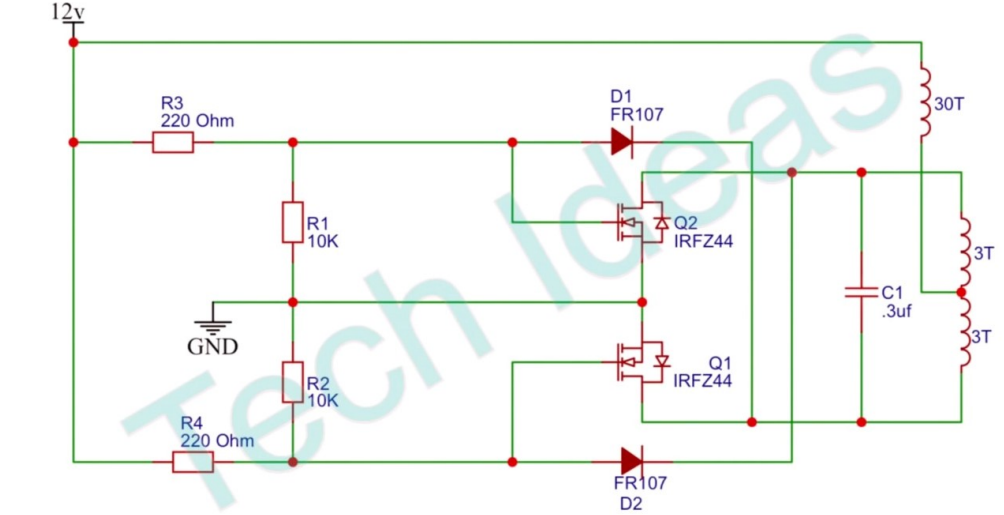
Main Principle

Working Principle

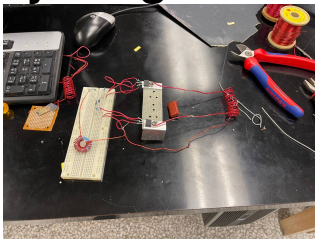
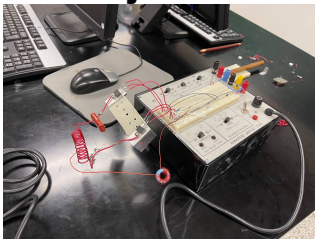
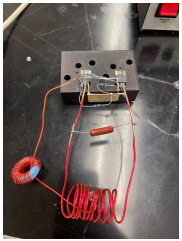
An inductive heater works by using the principles of electromagnetic induction to generate heat. The process involves the use of an alternating current (AC) power source, which is passed through a coil of wire to create an oscillating magnetic field. When a conductor is placed within this magnetic field, it will experience an induced current flow. This current flow, known as an eddy current, creates resistance within the conductor, which in turn generates heat.

The video followed in this project: https://youtu.be/ZzYqU-KWDuo

Schematic Circuit



My Progress and Final Project

It works fine under 25 V DC applied. While this is considered low power, it heated a metallic sheet to approximately 300 ℃ in less than 10 seconds!