

DESIGN AND DEVELOPMENT OF HEATER-BASED MICROCONTROLLER INDUCTION SYSTEM

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Abstract

Metal processes in general still use conventional heating stoves fueled by gas, wood and coal, which can reduce the quality of the metal caused by combustion products. The purpose of this research is to create an efficient metal design with an Arduino microcontroller based Induction Heater system equipped with a temperature sensor utilizing electromagnetic energy and eddy currents in metal equipment. The induction heating system is equipped with a thermocouple temperature sensor to measure the metal temperature during operation. Using a current and voltage meter that is produced by the induction heater. The metal induction heater tested used 3 variations of metal sizes with a diameter of 6 mm, 8 mm and 10 mm respectively. Metal testing uses 4 different test windings by heating each metal within 2 minutes.

Keywords: Induction Heater, microcontroller, eddy, thermocouple.