HIGH FREQUENCY H-BRIDGE INVERTER CIRCUIT FOR INDUCTION HEATING RICE COOKER.

Thesis is presented to fulfil the requirement of Advanced Diploma in Electrical Engineering of MARA Institute of Technology

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SYNOPSIS.

This thesis describes the development of high frequency controller unit with H-bridge inverter circuit for induction heating rice cooker. The performance of this 38.4kHz controller and the dc to ac power MOSFET inverter in generating high frequency flux to heat steel, stainless steel and aluminium vessel has been investigated.

CONTENTS

1. INTRODUCTION.

In home electrical appliances, induction heating has introduced other method of heating cooking vessel other than the conventional method that used hot plate. This method have been used in induction furnaces to produce high temperature to melt metals. Beside high efficiency, it also have other advantages such as cleanliness and safety.

The previous induction cooker can heat only iron or stainless steel vessels with an exciting coil of 15 turns at about 20kHz [1].

A new induction-cooker range has been developed successfully by Mr. Teruya Tanaka from Toshiba Corporation, Japan. Where the induction cooker that was developed by him has the input power range of 200W at the A.C. 100V [1]. The induction cooker developed by him has double layer excitation coil with unequal number of turn and two resonance capacitor to suit of all kind of metal vessels.

The induction heating method in cooking range can be specifically used for rice cooker. However in this project, the main objective is to design and develop the high frequency controller unit for induction heating rice cooker.