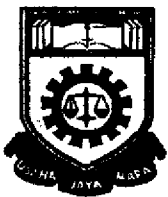


**DC CHOPPER CONTROLLER USING  
PERSONAL COMPUTER**

Thesis is presented in partial fulfilment for the award of the  
Bachelor of Electrical Engineering (Hons)

**MARA INSTITUTE OF TECHNOLOGY**



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**APRIL 1998**

## **ACKNOWLEDGEMENT**

In the name of ALLAH, the Benificent and the Merciful. It is with the deepest sense of gratitude to the AL-Mighty ALLAH who gives me the strength and ability to complete this project.

I would like this opportunity to express my most gratitude to my Project Supervisor Mr. Mohamad Aris Bin Ramlan for his dedication in guidance, advice and willingly gives his ideas and suggestions for completing my project.

My gratitude also goes to Mr. Kamal Zamli, for their guidance and willingness in sharing knowledge and the opportunity to use some of his Turbo C programming.

Finally, also thanks to all my friends for being very cooperative, understanding, reliable, helping, encouraging and everything.

**MOHD RASHID B: MOHD ZAIN**

## **ABSTRACT**

In this project, a simple PC controlled chopper circuit was developed to generate variable dc output voltages that can be used for many industrial drive and process applications. Variable output voltages are generated by controlling the switching time of the chopper switching device controlled by the software written in Turbo C programming language. The hardware developed includes a parallel interface system, digital analog converter and chopper converter system. The developed software is designed to provide reliability and flexibility in its operation so that any modification and alteration to the system operation can be done easily and conveniently.

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## **CHAPTER 1**

### **1.0 INTRODUCTION**

In many industrial application, it is required to convert a fixed voltage dc source into a variable voltage dc source. A dc chopper converts directly a fixed dc input supply to variable dc output supply i.e dc-dc converter. A chopper can be considered as dc equivalent to an ac transformer with a continuously variable turn ratio. Like a transformer, it could be used to step-down or step-up a dc voltage source. Chopper are widely used for traction motor control in electric automobiles, trolley cars, marine hoists, forklift trucks and mine haulers [1] . Chopper can be used in regenerative braking of dc motors to return energy back into the supply and this feature results in energy saving for transportation system with frequent stops. Chopper are also used in dc voltage regulators.

The basic function of the control system in a variable speed dc motor is to take the input controls on and off switching monitoring to converted them to signal that the converter can use. The system developed comprises of parallel interface card, digital to analog converter and dc chopper unit. The block diagram of the drive system is as shown in figure 1.0.