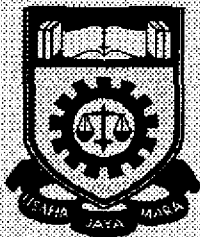


**RETROFITTING THE D.C. POWER SUPPLY
FOR ITM MACHINE LABORATORY**

**This thesis is presented in partial fulfilment for the award of the
Bachelor of Electrical Engineering (Hons) of
MARA INSTITUTE OF TECHNOLOGY**



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ABSTRACT

Power supplies are inseparable parts of electronic appliances and equipment. Most direct current (dc) power supplies in use today are powered from an alternating current (ac) source rated at 240Volts and 50 Hertz.

This project focuses on the hardware development of a d.c. power supply for a three machine experimental set. The objective of the project is to create a new solid state power supply to replace the 50kVA d.c. generator set in the general machine laboratory. The noise from the d.c. generator set is affecting the smooth running of other experiments.

This supply unit is developed to supply 220V, 13A d.c. output continuously. The d.c. power supply was constructed and tested. The design construction and testing of this power supply are presented in this thesis.

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CHAPTER 1

PROPOSED SYSTEM

1.0 Introduction

A good regulated power supply where the voltage and frequency are maintained within the specific range or tolerance is vital in order to achieve proper, safe and reliable operation of most of electrical equipment. Failure to follow this specification may result in equipment damage or malfunction. It is therefore apparent that some means of controlling or adjustment method are needed between the supply and equipment to overcome the problems. This project describes the development of a d.c. solid state power supply. The power supply consists of a transformer, converter and rectifier. This dc power supply was required to supply a 13A, 220V d.c. to the d.c. motor.

1.1 Scope of the project

This project is to developed a d.c. power supply to replaced the d.c. generator set in the Machine Laboratory. The generator set that have been used have 217A, 50kW rating where the noise from this is affecting the smooth running of other experiments. The purpose of the generator set is to supply a d.c. to the three machine which is use to do the experiment.