

**COMPUTER CONTROLLED SEPARATELY EXCITED
DC MOTOR EXPERIMENTAL STATION
FOR PERFORMING LOAD TEST**

**Thesis is presented in partial fulfilment for the award of the
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ABSTRACT

This project is regarding the development of computer controlled separately excited dc motor experimental station capable of performing load test. A variable speed drive is provided by the single-phase full wave thyristor controlled rectifier supplying the required variable voltage to the armature of the test machine. All experimental data measured by the transducers are acquired automatically and transmitted into the computer sequence by the latching circuit through serial interfacing unit. The operation of the station is controlled by software program written in Quick-Basic language.

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CHAPTER 1

1.0 INTRODUCTION

Much emphasis has been laid to impart computer aided courses to electrical engineering students. This led to a growing trend of developing computer controlled laboratory models in machinery laboratories [3]. Availability of this equipment in the laboratory facilitate the testing and research works to be done on the related subjects.

The computer-based experimental station provides facilities for testing dc machine and performing automatic data acquisition, measurement, calculations, interactive system operation and graphics report generation. It maximise the efficiency of testing jobs and therefore ultimately improves the user's productivity. The experimental station has a capability of handling real-time dc motor control problems [1]. This is possible by incorporating adaptive control scheme into the operating software, thus enabling the computer to perform very fast computation. This enable the system to be used in research application in the fields of dc drive and modern control theory.

The computer controlled experimental station can be implemented to operated in a number of operating mode by modifying the software functions. The flexibility of the system offer many advantages such as fewer components, lower cost and improved reliability.