

FINAL YEAR PROJECT REPORT

**FREQUENCY LOCKED LOOP DC
MOTOR SPEED CONTROL**



A PROJECT REPORT

Submitted by

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in partial fulfillment of the requirement for the award of degree

Of

BACHELOR OF SCIENCE

IN

ELECTRICAL ENGINEERING

SCHOOL OF ENGINEERING

UNIVERSITY OF MANAGEMENT AND TECHNOLOGY

JULY 2014



University of Management & Technology
School of Engineering
Department of Electrical Engineering

Senior Year Project- I Evaluation

Project ID 21

Date 20-03-2014

Project Title: DC motor speed control using frequency locked loop system

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S.No	Topic	Max Marks	Obtained Marks
1	Problem Statement	10	
2	Objective/Scope	10	
3	Methodology	10	
4	Scope of the Project/Utilization	10	
5	Literature Review/Data collection	10	
6	Design and Analysis	10	
7	Expected Output/Outcome/Final Deliverable	10	
8	Conclusion and Recommendation	10	
9	FYP-1 Documentation	20	

$150 \times 20 = 300$ (10)

Suggested Changes

- ① ~~Self frequency generator~~
- ① AVR ~~Microcontroller~~ Microcontroller 80M16 or equivalent be used
- ② 1 Hp motor. speed control.
- ③ Freq generating circuit (if required), must be self made

Name _____ Role: (adviser/member) Signature: _____

DECLARATION

We declare that this thesis was composed without plagiarism and work continued here is our own basic theory that we studied from literature and adopted it in our own words with reference and this work has not been submitted for any other degree or professional qualification.

Signature :

Advisor Name:

Date :

Group Members

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_____.

DEDICATION

This project, the result of 1 year of our hard work and life long struggle dedicated to our beloved parents, without their support, guidance and prayers we would never have accomplished such an enormous task.

ACKNOWLEDGEMENT

Firstly we are Thanks to ALMIGHTY ALLAH, who granted us with the wisdom, the strength and the courage to complete this project,

Secondly and foremost we sincerely salute our estimated Institution University of Management and Technology for giving this golden opportunity for fulfilling our warm dreams of becoming engineers.

Also we would like to thank our project advisor Mr.salman Khalid who continuously enlightened our minds and lit our paths throughout the course of the project. We consider ourselves extremely fortunate to have him as our advisor and be able to gain from his banks of knowledge.

ABSTRACT

In present days the power semiconductor devices have completely revolutionized the control of drives especially in the area of control usage of Thyristors IGPT's power MOSFET etc., has increased. The project reveals the digital closed loop control system for speed control of DC motor using PWM technique.

The digital circuit can be interfaced with microcontroller, so that the speed can be controlled by Micro-controller even more easily. PWM technique to the digital circuit drives the component correspondingly, speed will change.

The project basically consists of Micro-controller (AtMega-16), Motor driver (TLP-250), Dot matrix LCD (JHD-164) display, Rotation feedback sensor (optical encoder), MOSFET's (irf-740), Resistors, and Capacitors. We program the Micro-controller to take the input values from the user, and then rotate the motor by placing 25% to 40% duty cycle pulse on the motor. The motor is rotated at X RPM speed, can be detected by using feedback sensor and micro controller. If the speed is above the specified speed then the micro controller continuously reduces the duty cycle till the speed comes to a predetermined level. If the detected speed is less than the pre determined speed then the micro controller continuously increases the duty cycle till the determined level. The micro controller keeps on tracking the determined speed by varying duty cycle in a closed loop control system.

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