

ELECTRONIC CONTROL UNIT FOR ELECTRIC MOTORCYCLE

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STATEMENT BY THE AUTHOR

I hereby declare that this submission is my own work and to the best of my knowledge, it contains no material previously published or written by another person, nor material which to a substantial extent has been accepted for the award of any other degree or diploma at any educational institution, except where due acknowledgement is made in the thesis.



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ABSTRACT

Electronic Control Unit for Electric Motorcycle

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This thesis aims to enhance driving performance, specifically focusing on slow-speed driving and slope starting. The existing system comprises a BLDC motor control along with switches for lights, brakes, and a display gauge cluster. To introduce new functionalities, an Electronic Control Unit (ECU) will be integrated into the current system. The additional system will offer easy programmability and enable precise adjustment of the motor's acceleration, particularly at low speeds. It will incorporate modes such as slow acceleration, fast acceleration, and hill start assist. A microcontroller will govern the electronic control unit's operations. Furthermore, the electronic control unit will store essential data, including angle, RPM, and current exert to the motorcycle's wheels. This data can be conveniently retrieved using an SD card, facilitating future utilization or adjustments to the motor's acceleration.

Keywords: Electric Motorcycle, Electric Vehicle, Electric Control Unit, BLDC Motor, Hill-Start Assist, Teensy.

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DEDICATION

I dedicate this works to God

I dedicate this works to my family and friends

I dedicate this works the future of my country



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I would like to express my gratitude to God, who has consistently blessed me throughout this thesis. With His grace, I have been able to complete my work. I am also deeply thankful to my family for their unwavering support and presence by my side. In particular, I am grateful to my father, who steadfastly believed in my ability to finish this thesis and continuously motivated me during times when I desperately needed assistance.

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TABLE OF CONTENTS

	Page
STATEMENT BY THE AUTHOR.....	2
DEDICATION.....	5
ACKNOWLEDGEMENTS.....	6
TABLE OF CONTENTS.....	7
LIST OF FIGURES.....	11
LIST OF TABLES.....	13
CHAPTER 1 – INTRODUCTION.....	14
1.1 Background.....	14
1.2 Research Problems.....	15
1. The start of the electric motor is an instance.....	15
2. To start the motorcycle in slope condition, the motorcycle tends to roll down. 15	15
3. The system is mechanically controlled.....	15
4. When being driven at a low speed, a jerking motion occurs.....	15
1.3 Research Objectives.....	15
1. To integrate a microcontroller for an electric motorcycle system.....	15
2. To improve driving experience in low speed conditions.....	15
3. To implement hill start features in an electric motorcycle.....	15
1.4 Significance of Study.....	15
1. By introduce microcontroller to an existing BLDC motor controller in an electric motorcycle, it wlll improve driving experience on slopes.....	15
2. By introducing a modes feature, it will improve the driving experience at both fast and slow speeds.....	15

1.5	Research Questions	16
1.6	Hypothesis	16
CHAPTER 2 - LITERATURE REVIEW		17
2.1	Electronic Control Unit	17
2.2	Hill Start Assist.....	18
2.3	Driving Mode	19
2.4	Types of an Electric Vehicle Motor	20
2.4.1	DC Motor.....	20
2.4.1.1	Control Algorithm.....	23
2.4.1.2	Electrical control	24
2.4.2	AC Motor.....	24
2.5	Current Sensor.....	24
2.6	Angle Sensor	25
2.7	Microcontroller.....	25
2.7.1	Arduino	26
2.7.2	Teensy.....	26
2.8	Previous System	26
CHAPTER 3-RESEARCH METHODS		28
3.1	Design Overview	28
3.1.1	Previous System.....	28
3.1.1.1	Driving Mode.....	30
3.1.2	Hill Start Assist.....	30
3.2	Electrical Schematic	31
3.2.1	Microntroller Input and Output.....	32
3.2.2	Button Mode	33
3.2.3	LED Indicator	33
3.2.4	Current Sensor	34

3.2.5	Logic Level Circuit	35
3.2.6	Tilt Sensor	35
3.2.7	Analog Input	36
3.2.8	SD Card Reader	37
3.3	Electrical Component	37
3.3.1	LM2596	37
3.3.2	AMS1117	38
3.3.3	NPN Transistor	38
3.3.4	Bi-directional Logic Converter	39
3.3.5	Teensy 4.0	40
3.3.6	DFrobot Bluno Nano	41
3.3.7	MPU6050	42
3.3.8	DS3231	43
3.3.9	SD to SPI Converter	44
3.3.10	ECGO 2 Motorcycle	45
3.3.11	ADS1115(ADC)	46
3.3.12	ACS758	47
3.4	Software	48
3.4.1	Arduino IDE	48
3.4.2	Algorithm	49
3.4.2.1	Main Program Flowchart	50
3.4.2.2	Flowchart Angular Velocity Measurement	52
3.4.2.3	Throttle Mapping	53
3.4.3	I2C Device Setup	53
CHAPTER 4-RESULT AND DISCUSSIONS		55
4.1	MPU6050 Test	55
4.2	RPM Hall sensor test	55

4.3	Input Throttle.....	56
4.4	Motor Velocity	57
4.5	Speed in PWM correlation	60
4.6	Problem in hall sensor	62
4.7	Data.....	62
CHAPTER 5 – CONCLUSIONS AND RECOMMENDATIONS		65
5.1	Conclusions	65
5.2	Recommendations	65
GLOSSARY		66
REFERENCES		67
Appendix A Datasheet		69
Appendix B Program Codes		82
Appendix C Bill of Materials.....		91
CURRICULUM VITAE.....		92

LIST OF FIGURES

Figures	Page
Figure 1.Three phase's Trapezoidal signal	21
Figure 2.BLDC motor equivalent circuit	22
Figure 3.BLDC motor Voltage	22
Figure 4.BLDC motor control.....	23
Figure 5.Previous Schematic.....	26
Figure 6.Electric Speed Control Unit.....	29
Figure 7.Main Schematic	31
Figure 8.Microcontroller I/O.....	32
Figure 9.Input Circuit.....	33
Figure 10.LED Indicator	33
Figure 11.Hall Current Sensor	34
Figure 12.Output Driver Circuit	35
Figure 13.Accelerometer and Gyroscope	35
Figure 14.Analog Input Circuit.....	36
Figure 15.SD Card Reader Circuit.....	37
Figure 16.LM256	37
Figure 17.AMS1117	38
Figure 18.NPN Transistor	38
Figure 19.Bi-directional Logic Converter.....	39
Figure 20.Teensy 4.0.....	40
Figure 21.DFrobot Bluno Nano	41
Figure 22.MPU6050	42
Figure 23.DS3231	43
Figure 24.SD to SPI Converter	44
Figure 25.ECGO 2	45
Figure 26.ADS1115	46
Figure 27.ACS758	47

Figure 28.Arduino IDE	48
Figure 29.Main Program Flowchart.....	50
Figure 30.Angular Velocity Measurement Flowchart	52
Figure 31.Throttle Mapping Configuration	53
Figure 32.I2C Connection Datalog	54
Figure 33.Motor Characteristic	59
Figure 34.Regression line PWM and Velocity corelation	61
Figure 35. Modes Acceleration.....	62
Figure 36.Angle Hill start	63
Figure 37.Current Hill-Start.....	63



LIST OF TABLES

Table	Page
Table 1. Bi-directional Logic Converter	39
Table 2. Teensy 4.0	40
Table 3. DFrobot Bluno Nano	41
Table 4. MPU6050	42
Table 5. DS3231	43
Table 6. SD to SPI Converter	44
Table 7. ECGO 2	45
Table 8. ADS1115	47
Table 9. ACS758	48
Table 10. Angle Test	55
Table 11. Velocity Read Test	56
Table 12. Throttle Measurement	56
Table 13. Motor Characteristic	58