

**DEVELOPMENT OF A VARIABLE SPEED HOLLOW CONDUCTOR LOOP
APPARATUS TO BE IMPLEMENTED FOR LEYBOLD INDUCTION BY
MEANS OF A VARIABLE MAGNETIC FIELD EXPERIMENTAL MODULE**

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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

DEVELOPMENT OF A VARIABLE SPEED HOLLOW CONDUCTOR LOOP APPARATUS TO BE IMPLEMENTED FOR LEYBOLD INDUCTION BY MEANS OF A VARIABLE MAGNETIC FIELD EXPERIMENTAL MODULE

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When an inductor coil is moving relative to a magnetic field, there is an induced voltage produced within the inductor coil. This paper discusses the development of an experimental module designed to test the relationship between the speed, the number of coils of the moving inductor coil and the induced voltage produced. A horizontally oscillating moving bed is built to adapt to the Leybold Induction by means of a variable magnetic experimental module, allowing for the electromagnetic induction to occur. A separate microvolt meter is also built to record the induced voltage which can be seen using the complimentary Android application.

To conclude, the inefficiency of the power transmission and noise produce in the sensor system prevents large data sample to present clear relationship between the speed of the moving inductor coil and induced voltage produced. Nevertheless, the phenomenon can be tested using the development module.

Keywords: Electromagnetic induction, Flux change, Induced voltage, Variable magnetic field, IOT, Horizontally oscillating moving bed, App Inventor, Microvolt meter



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DEDICATION

I dedicate this work for my loving God, beloved family and friends, my most esteemed advisor and co-advisor, without whom this work would be incomplete, the people around the world suffering due to the Covid-19 pandemic, and the future of Indonesia and the world.



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TABLE OF CONTENTS

	Page
STATEMENT BY THE AUTHOR.....	2
ABSTRACT.....	3
DEDICATION.....	5
ACKNOWLEDGEMENTS.....	6
TABLE OF CONTENTS.....	7
LIST OF FIGURES.....	10
LIST OF TABLES.....	12
CHAPTER 1 - INTRODUCTION.....	13
1.1. Background.....	13
1.2. Objectives.....	14
1.3. Hypothesis.....	14
CHAPTER 2 - LITERATURE REVIEW.....	15
2.1. Leybold Induction by Means of a Variable Magnetic Field.....	15
2.2. Theoretical Perspectives.....	16
2.3. Previous Studies.....	17
2.3.1. Electrostatic charges in $v \times B$ fields and the phenomenon of induction.....	17
2.3.2. Magnetic fields in moving conductors: four simple examples.....	18
2.3.3. Using ChemDuino, Excel, and PowerPoint as Tools for Real-Time Measurement Representation in Class.....	19
2.3.4. Smart Energy Meter based on Arduino and Internet of Things.....	20
CHAPTER 3 - RESEARCH METHODS.....	22
3.1. Mechanical Design.....	22
3.1.1. Moving Mechanism.....	22
3.1.1.1. Linear Rail.....	24
3.1.1.2. Slider.....	26
3.1.1.3. Motor Stand.....	27
3.1.1.4. Mountings.....	29
3.1.1.4.1. Motor Mount.....	30

3.1.1.5. Encoder Mount.....	30
3.1.1.6. Power transmission	31
3.1.1.6.1. Gear System	31
3.1.1.6.2. Pulley	32
3.1.2. Microvolt Box	32
3.2.1.1. Battery.....	34
3.2.1.2. L298N H-Bridge Motor Driver.....	35
3.2.1.3. LM393 Sensor Module	35
3.2.1.4. Microcontroller	35
3.2.1.5. Motor.....	36
3.2.2. Microvolt Box	37
3.2.2.1. Battery	37
3.2.2.2. HC-05 Bluetooth Module	38
3.2.2.3. HX711 24-bit ADC.....	38
3.2.2.4. Microcontroller	39
3.3. Program Design	39
3.3.1. Moving Mechanism	39
3.3.2. Microvolt Box	40
3.3.3. Mobile Application	41
CHAPTER 4 - RESULTS AND DISCUSSIONS	43
4.1. Result	43
4.1.1. Moving Mechanism	43
4.1.2. Microvolt Box	44
4.1.3. Mobile Software.....	45
4.2. Individual Component Test.....	46
4.2.1. Battery	46
4.2.2. HC-05 Bluetooth Module	46
4.2.3. HX711 24-bit ADC.....	49
4.2.4. Mechanical Structure	50
4.2.5. Mobile Software.....	50
4.2.6. Potentiometer	51
4.2.7. Power Transmission.....	53
4.3. Full System Test	57
4.4. Revised Full System Test.....	58

4.4.1. Induced voltage over Time	59
4.4.2. Translational Speed.....	61
CHAPTER 5 - CONCLUSIONS AND RECOMMENDATIONS.....	62
5.1. Conclusions.....	62
5.2. Recommendations.....	63
GLOSSARY	65
REFERENCES	66
APPENDIX A - ADDITIONAL DATA.....	67
APPENDIX B - MECHANICAL COMPONENTS	84
B.1. Encoder Mount.....	84
B.2. Linear Rail.....	85
B.3. Motor Mount	86
B.4. Motor Stand.....	87
B.5. Pulley.....	88
B.6. Slider	89
B.7. Worm.....	90
B.8. Worm Wheel	91
B.9. μ Volt Box.....	92
APPENDIX C - ELECTRICAL COMPONENT	93
C.1. Arduino Mega 2560	93
C.2. HC-05 Bluetooth Module.....	98
C.3. HX711 Load Cell 24-bit ADC	115
C.4. L298N H-Bridge Motor Driver.....	124
C.5. LM393 Sensor Module.....	137
APPENDIX D - PROGRAMMING CODE	139
D.1. Android	139
D.2. Arduino – Microvolt Box.....	141
D.3. Arduino – Moving Mechanism	143
APPENDIX E - BILL OF MATERIAL	145
CURRICULUM VITAE.....	147

LIST OF FIGURES

Figures	Page
Figure 2.1. Leybold Measuring the induction voltage in a conductor loop moving within a magnetic field experimental setup	15
Figure 2.2. Calculation and diagram of induced voltage in moving conductor.....	16
Figure 2.3. Theoretical relationship between the induced voltage and the speed of the moving conductor loop	16
Figure 2.4. Effect of electrostatic charge affects the induced voltage produced	18
Figure 2.5. Net magnetic field of rectangular copper moved to the right at constant velocity without rotating	18
Figure 2.6. PLX-DAQ Interface	19
Figure 2.7. Chart Produced Using Data Collected by PLX-DAQ	20
Figure 2.8. Smart Energy Meter System Design	21
Figure 3.1. Moving Mechanism of the Proposed Experimental Module Extension....	22
Figure 3.2. Linear Rail Design in SolidWorks	25
Figure 3.3. Free Body Diagram of Forces Acting on Linear Rail when Oscillating Backward in the Large Cylindrical Coil	26
Figure 3.4. Slider Design in SolidWorks	26
Figure 3.5. Free Body Diagram of Forces Acting on Slider when Oscillating Backward in the Large Cylindrical Coil	27
Figure 3.6. Motor Stand Design in SolidWorks	28
Figure 3.7. Free Body Diagram of Forces Acting on Motor Stand when Oscillating Backward in the Large Cylindrical Coil	29
Figure 3.8. Motor Mount Design in SolidWorks	30
Figure 3.9. Encoder Mount Design in SolidWorks.....	30
Figure 3.10. Worm Design in SolidWorks	31
Figure 3.11 Worm Wheel Design in SolidWorks	31
Figure 3.12. Pulley Design in SolidWorks	32
Figure 3.13. Microvolt Box Structure Design in SolidWorks	32
Figure 3.14. Microvolt Box Cover Design in SolidWorks	32

Figure 3.15. Forces Acting on Microvolt Box Structure	33
Figure 3.16. Electrical Circuit of Moving Mechanism	34
Figure 3.17. Electrical Circuit of Microvolt Box.....	37
Figure 3.18. Flow Chart of Moving Mechanism Program.....	40
Figure 3.19. Flow Chart of Microvolt Box Program	41
Figure 3.20. Flowchart of Mobile Application Program	42
Figure 4.1. Result of Linear Rail	43
Figure 4.2. Result of Slider	44
Figure 4.3. Result of Motor Stand	44
Figure 4.4. Result of Microvolt Box	45
Figure 4.5. Result of Mobile Software.....	45
Figure 4.6. Baud Rate 1200	47
Figure 4.7. Baud Rate 2400	47
Figure 4.8. Baud Rate 4800	47
Figure 4.9. Baud Rate 9600	48
Figure 4.10. Baud Rate 19200	48
Figure 4.11. Baud Rate 38400	48
Figure 4.12. Baud Rate 57600	48
Figure 4.13. Chart of HX-711 24-bit ADC Testing Experimental Data.....	49
Figure 4.14. Save File as CSV	51
Figure 4.15. CSV File in Internal Storage	51
Figure 4.16. Content of CSV File	51
Figure 4.17. Chart of Potentiometer Testing Experimental Data	52
Figure 4.18. Chart of L298N Motor Driver Testing Experimental Data	54
Figure 4.19. Chart of Gear System Testing Experimental Data	54
Figure 4.20. Chart of Motor Relative to PWM Testing Experimental Data.....	55
Figure 4.21. Chart of Gear Relative to Supplied Voltage Testing Experimental Data	55
Figure 4.22. Chart of Gear Efficiency Testing Experimental Data	56
Figure 4.23. Chart of Full System Testing Experimental Data.....	58
Figure 4.24. Table of Full System over Time Testing Experimental Data.....	60
Figure 4.25. Chart of Moving Mechanism Performance Testing Experimental Data	61

LIST OF TABLES

Table	Page
Table 4.1. Table of Battery Testing Experimental Data	46
Table 4.2. Table of HC-05 Bluetooth Module Testing Experimental Data.....	47
Table 4.3. Table of Mechanical Structure Testing Experimental Data.....	50
Table 4.4. Table of Battery Testing Potentiometer Data	52
Table 4.5. Table of Power Transmission Testing Experimental Data	53
Table 4.6. Table of Full System Testing Experimental Data.....	57
Table 4.7. Table of Full System Testing over Time Experimental Data	59
Table 4.8. Table of Moving Mechanism Performance Testing Experimental Data	61



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