

**UNIVERSITI TEKNOLOGI MARA**

**[MOTORIZED CLOTHES HANGER]**

**MOHAMAD MUSTQIM BIN MUSTHAFAH  
(2019263672)**

Dissertation submitted in partial fulfillment  
of the requirements for the degree of  
**Diploma**  
**(Mechanical Engineering)**

**College of Engineering**

**March 2022**

## **ABSTRACT**

People in the modern era still hang their clothes on a clothesline, just like they did in the 1990s. Despite the availability of dryers, some people still prefer to dry their clothes in the sun after they have been washed. However, when it begins to rain, it will become a burden for them. They must leave their house to manually save their clothes on the clothesline. Many people will be irritated because of this. As a result of this, a motorised clothes hanger was created. The primary goal of this research is to improve the household clothes hanger of today and to develop novel methods of drying clothes.

## **ACKNOWLEDGEMENT**

First, I am grateful to Allah S.W.T for giving me the opportunity to embark on my diploma and for completing this subject, Final Year Project 2 (MEC300).

My gratitude and thanks go to my supervisor, Madam Nur Aini Sabrin Binti Manssor. For giving me advice and guidance to complete my final year project. With her proper guidance and brilliant advice, I manage to improve my final year project. Without her, I would never accomplish this dissertation. All the experience and knowledge I gain from this final year project will be useful for me to face more challenges in the future.

Special thanks to my family members that always give me support and helping me to complete this dissertation. They had spent their money and time for me to finish my study. Also, I am grateful to my classmate that always share their knowledge with me to complete my dissertation successfully.

Finally, this dissertation is dedicated to my father and mother for the vision and determination to educate me. This piece of victory is dedicated to both of you. Alhamdulillah's.

## TABLE OF CONTENTS

	<b>Page</b>
<b>CONFIRMATION BY SUPERVISOR</b>	<b>1</b>
<b>AUTHOR’S DECLARATION</b>	<b>2</b>
<b>ABSTRACT</b>	<b>3</b>
<b>ACKNOWLEDGEMENT</b>	<b>4</b>
<b>TABLE OF CONTENTS</b>	<b>5</b>
<b>LIST OF TABLES</b>	<b>7</b>
<b>LIST OF FIGURES</b>	<b>8</b>
<b>LIST OF ABBREVIATIONS</b>	<b>11</b>
<b>CHAPTER ONE : INTRODUCTION</b>	<b>ERROR! BOOKMARK NOT DEFINED.</b>
1.1 Background of Study	<b>Error! Bookmark not defined.</b>
1.2 Problem Statement	<b>Error! Bookmark not defined.</b>
1.3 Objectives	<b>Error! Bookmark not defined.</b>
1.4 Scope of Work	<b>Error! Bookmark not defined.</b>
1.5 Significance of Study	<b>Error! Bookmark not defined.</b>
<b>CHAPTER TWO : LITERATURE REVIEW</b>	<b>ERROR! BOOKMARK NOT DEFINED.</b>
2.1 Information on existing product, patents, standards	<b>Error! Bookmark not defined.</b>
2.2 Product design based on literature review	<b>Error! Bookmark not defined.</b>
<b>CHAPTER THREE : METHODOLOGY</b>	<b>9</b>
3.1 Introduction	<b>9</b>
3.2 Prototype drawing and bill of material (BOM)	<b>10</b>
3.3 Calculation and computational analysis	<b>27</b>
3.3.1 Equipment and tools	<b>38</b>
3.3.2 Step by step fabrication process	<b>41</b>
3.4 Fabrication process	<b>38</b>
3.5 Final fabrication working prototype	<b>38</b>

# CHAPTER ONE

## INTRODUCTION

### **1.1 Background of study.**

In this modern day and age, most of our work are done with machine help. For example, when we do the laundry, we just put the clothes into the washing machine and add in detergent and the washing machine will wash the cloth and rinse it. But after that we still need to dry the cloth by hang up cloth at the household drying cloth. Some of us maybe have the dryer machine to dry their cloth but for some people dryer is too expensive and use a lot of energy and will increase the bills. Because of this, people still need to move around the household drying cloth to dry their cloth and for senior citizen it can be a tiring work for them. Beside that we still need to rush out to save the clothes on the hanger when the day starts raining. Until this day's most of the people still using the normal household drying cloth that same as people years before.

Therefore, I decide to create a household drying cloth with a motor help people hang up clothes easier. Especially to elder citizen, pregnant women and deficient people. This product will use the motor to move the household drying cloth away to save the clothes when raining. With this motor help, user no longer need to rush out to save the clothes. This motors movement can be controlled manually with the button at the clothes hanger either move forward or backward.