

**UNIVERSITI TEKNOLOGI MARA**

**PORTABLE WRAPPING MACHINE**

**MUHAMMAD HAKIM BIN HISAM**

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

**College of Engineering**

**February 2023**

## **ABSTRACT**

This project is presenting a portable wrapping machine that has been improvised by adding new feature such as make it portable that is easy to operate and it is user friendly. The Objective of this machine is to increase the production rate for home sellers and ease their job. The design of the machine is fit for small cylinder or box within the machine size. A motor has been installed in the to wrap the object. There is a power supply that will covert ac current to dc current to supply electricy to the motor. The potential in commercial the portable bubble wrapping machine is very high because portable wrapping machine in the current market is not well establish.

## **ACKNOWLEDGEMENT**

Assalamualikum , I am grateful to Allah SWT for the good health and wellbeing that were necessary to complete this final year project. I wish to express my sincere thanks to Dr Siti Khadijah Binti Alias, Principal of the Faculty Mechanical Engineering, for providing me with all the necessary facilities for the research. I place on record, my sincere thank you to En Miqdad Bin Khairulmaini my supervisor, for the continuous encouragement. I am also grateful to DR Wan Muhammad Syahmi Bin Wan Fauzi, lecturer, in the Head of Final Year Project 2. I am extremely thankful and indebted to him for sharing expertise, and sincere and valuable guidance and encouragement extended to me. I take this opportunity to express gratitude to all of the Department faculty members for their help and support. I also thank my parents for the unceasing encouragement, support and attention. I am also grateful to my partner who supported me through this venture. I give an honor my parents for always stay with gives courages and moral support to continue the FYP. I also place on record, my sense of gratitude to one and all, who directly or indirectly, have lent their hand in this venture.

# TABLE OF CONTENTS

	<b>Page</b>
<b>CONFIRMATION BY SUPERVISOR</b>	<b>ii</b>
<b>AUTHOR'S DECLARATION</b>	<b>iii</b>
<b>ABSTRACT</b>	<b>iv</b>
<b>ACKNOWLEDGEMENT</b>	<b>v</b>
<b>TABLE OF CONTENTS</b>	<b>vi</b>
<b>LIST OF TABLES</b>	<b>viii</b>
<b>LIST OF FIGURES</b>	<b>ix</b>
<b>LIST OF ABBREVIATIONS</b>	<b>x</b>
<b>CHAPTER ONE : INTRODUCTION</b>	<b>1</b>
1.1 Background of Study	1
1.2 Problem Statement	2
1.3 Objectives	3
1.4 Scope of Study	3
1.5 Significance of Study	4
<b>CHAPTER TWO : LITERATURE REVIEW</b>	<b>5</b>
2.1 Benchmarking/Comparison with Available Products	5
2.2 Related Manufacturing Process	6
2.3 Sustainability/Ergonomic Related Items	6
2.4 Patent and Intellectual Properties	7
2.5 Summary of Literature	8
<b>CHAPTER THREE : METHODOLOGY</b>	<b>9</b>
3.1 Overall Process Flow	9
3.2 Detail Drawing	11
3.3 Engineering Calculation and Analysis	14
3.4 Bill of Materials	15

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background of Study

Nowadays, product packaging is critical for product protection. Packaging is usually done with a wrapping machine. Automatic and semiautomatic wrapping machines[1]. Load, start, wrap, and unload are the steps in the automated wrapping machine's operation. The semi-automated version, on the other hand, requires receiving, moving, and unloading the rolls of wrapping material and the gluing apparatus. Bubble wrap is the most popular material used to wrap a product[2]. Bubble wrap is a translucent, malleable plastic film that is used to pack fragile things. Alfred Fielding and Marc Chavannes, two innovators, attempted to build a threedimensional plastic wallpaper in 1957[3]. Even though the plan failed, they discovered that the substance they created could be utilized as packaging material. Fielding was a cofounder of Sealed Air in 1960. Bubble wrap is now used all over the world as a protective material to keep products from being damaged[4].