

UNIVERSITI TEKNOLOGI MARA

**DEVELOPMENT OF PLASTIC
BOTTLE RECYCLING MACHINE**

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ABSTRACT

Plastic is used by people around the world and plastic is also one of the materials that cause the most pollution on earth. Many products can be produced using plastic as materials such as plastic bottles. Most people use plastic bottles to store water and drink when they feel thirsty. After using the plastic bottle, they will throw the plastic bottle into the dustbin. However, some people irresponsibly do not manage plastic bottles properly after using them. For example, they will throw anywhere they want at their will even though they know what they are doing is wrong. Having a good tool to manage plastic bottles is needed to save the environment. The main objectives of this project are to design a plastic bottle recycling machine and to develop a motorized plastic cutter machine. In making a Plastic Bottle Recycling Machine, I need to research to create a proper and the best design with the limitations of the machines provided in UiTM and within my budget. Then, propose selected panels to approve my design and concept of the machine. After getting approval, I started to create the machine based on my approved design and made some advancements. Next, I will present to people my project after the machine fully operates. Lastly, make a report on the whole development of the Plastic Bottle Recycling Machine. This machine will benefit people by encouraging their recycling spirit and the machine has easy maintenance.

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CHAPTER ONE

INTRODUCTION

1.1 Background of Study

Plastic bottles have become an integral part of our daily lives, offering convenience and versatility in various applications. These bottles are made from a type of plastic called polyethylene terephthalate (PET) or other similar materials. The process of creating plastic bottles typically starts with the extraction and refining of petroleum or natural gas, from which the necessary raw materials for plastic production are derived. These raw materials undergo a series of chemical processes to create the polymer resin, which is the primary building block of plastic bottles.

In 2023, figure 1.1 shows Malaysia has ranked 3rd in the list of countries that are the main contributors to plastic pollution in the ocean [1]. Furthermore, there are just a few recycled dustbins found in Malaysia. This problem may give advantages for Plastic Bottle Recycling Machines in the market because this machine is the one of methods to reduce plastic pollution in Malaysia. It will attract people with its simple look and how the machine runs. It can be used by parents at their house because this machine only can be used for 1 bottle per running.



Figure 1.1 Highest Ocean Plastic Waste Polluters