

UNIVERSITI TEKNOLOGI MARA

**DEVELOPMENT OF A
FLOATATION PLATFORM FOR A
WATER TRASH COLLECTOR**

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ABSTRACT

Our world is facing a major problem which is water pollution. Based on study, plastic is the main reason to this pollution. But there is still minimal amount of effort by society to clean the river due to lack of awareness. There is also low amount of water trash collector product are developed in the country. The objectives are to design a floatation platform of water trash collector and to fabricate and develop a working prototype of water trash collector floatation platform. While for scope of project, the design should be large enough to accommodate the water propeller, conveyor belt and the storage tank to fit in it. Furthermore, the design of the platform is based on the capability of the researcher to fabricate the platform in the UiTM Labs. Moreover, the design is limited to a 1 m length to be used in pond. For methodology, students are started with designing 3 sketches design and choose the best design that can fit with the scope of work. Then, the fabrication process also needs to be stated to ease students to make a prototype based on their list of fabrication process. The expected result that designs proposed can carry up to 5kg of trash. This project will give many benefits to the society such as be a good assistance to relieve physical labour on garbage cleaning task. As conclusion, a newly design of water trash collector are expected can be used widely around the country to clean the pond and river for a healthy water resource for society and mother nature.

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CHAPTER ONE

INTRODUCTION

1.1 Background of Study

Pollution is getting worse as it has become major problem around the world [1]. One of it is plastic pollution that floating on the water surface [1]. One of the main reasons to this pollution is festival that held near a river or ocean [2]. The people then throw away the leftover in the river as it is saving cost for them for cleaning after the festival [2]. The other reasons for the pollution are domestic waste disposal into the rivers and ocean [3]. Some of the industries are too desperate to gain profit that made them to ignore about environmental care [4]. To overcome this problem, a garbage collector robot that float on water are designed to collect garbage floating in the ocean [5]. This can also be environmental-friendly by using solar power as its source to reduce manpower and time consumption for cleaning [6]. It can also store the energy in the battery and can be used later for cleaning with the help of chain drive arrangement and motor [7]. This device can also be a good assistance to relieve dustman's physical labour on garbage cleaning task [8]. To make the machine always work well, electronic circuit and motors have been placed on the platform [9]. This is the reason for a study on a water trash collector that is capable to be used in small river and ponds. This water trash collector is designed by two different departments which are Mechanical Engineering dan Electrical Engineering. A combine group of five students are involved in this development. The focus of this study is the design of the floatation platform.

1.2 Problem Statement

Nowadays, pollution have become major problem as all country around the globe are facing the same problem as it is getting worse every day [1]. After some research, it has confirmed that one of the factors to the problem is plastic pollution [1]. Moreover, the reason that led to this problem is festival that been held near a river or ocean [2]. When the festival is over, the 2 | Page people take the easy ways to disposal the trash by throwing it into the river as it is saving in cost [2]. Furthermore, domestic waste disposal into the river and ocean are the reasons to the pollution [3]. Due to