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**MEC299**

**WATER VACUUM CLEANER**

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## **ABSTRACT**

Vacuum is one of the most useful scientific phenomena in life today. It is very usable in many mechanical system and very useful to solve any daily problem. Overflow water on the floor was a most problem occurred in some industry but there's a certain method that used by cleaner to solve this problem. For example, they use water sweeper or mop to flow out the stagnant water from that region. Sometimes, this method is not suitable to solve overflow water in large scale and will taking more time. The objective of this project is to design and fabricate water vacuum cleaner. This equipment can be made using the limited material in laboratory only. Before fabrication process, I need to design the product using solid work from at least 3 design idea and I have to choose the suitable material to optimum the product's function and reduce cost. After that, the product will be try run by cleaner UITMBB to gain data from effectiveness's of product. This product is created to help cleaner of UITMBB to solve the water smudges at any floor in this campus.

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## **CHAPTER 1 : INTRODUCTION**

### **1.1 Background of Study**

Vacuum is one of the most useful scientific phenomena in life today. It is very usable in many mechanical system and very useful to solve any daily problem.

In study case of atmospheric pressure, one of the British engineer, Hubert Cecil Booth, already invented the first powered vacuum cleaners in 1901 [1]. His vacuum has been the mainstay for the creation of modern vacuums in this day and age. But this machine is only capable of sucking up small particulate matter and is not capable of being used for cleaning liquid dirt or stagnant water in the stagnant Area. This begs the question of how to solve the problem in various large scale places?

To solve this problem, the vacuum machine needs to be modified to allow it to function to inhale various types of liquids. The project will be more focused on the Area on a large scale to facilitate and expedite the work. Last but not least, this project is more on the improvement from the exist product.

### **1.2 Problem Statements**

There are various problems that can be solved with this water vacuum. Among the common problems in the industry are pipe leaks that cause water stains [2]. Also, another problem that requires this tool is to solve the problem of using a lot of manpower as opposed to using a manual tools and causing tiredness [3]. Therefore, by shifting the cleaning work time will also be able to be shortened.

### **1.3 Objective**

- 1 To design a water vacuum cleaner that suck the overflow water.
- 2 To fabricate these water vacuum cleaners by using motor as the main mechanism work.

#### **1.4 Scope of Work**

For this project, a water vacuum cleaner was created on the basis of simplifying and speeding up cleaning work involving water or other liquids. Therefore, UITM Bukit Besi cleaner are the first choice as the main job that uses this product.

It is only use in the area of UITMBB like in the toilet. Moreover, its only uses to suck stagnant water and not suitable to suck out the water from depth area like pool or aquarium. However, the effectiveness of the function and success of this project depends on the use of limited materials and can only use materials that are only available in the laboratory.

#### **1.5 Significance of Study**

The product has handle to make it easy to use and the stick from the old tool will be replace with iron pipe to make the water can through to rubber pipe. From the use of rubber in water shovels to the use of rubber fans with little use of mechanical energy from the motor and electrical energy to move it for the purpose of helping the suction process. Water jet is also used as the main tool to make this tool work. Basically, this project is carried out to optimize the use of water jets for cleaning purposes.