

**UNIVERSITI TEKNOLOGI MARA**

**DESIGN AND FABRICATION OF  
PESTLE AND MORTAR MACHINE**

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## **ABSTRACT**

This report presents information about the design and fabrication of pestle and mortar machines. A pestle and mortar are a set of two simple tools used to prepare ingredients or substances by crushing and grinding them into a fine paste or powder in the kitchen, laboratory, and pharmacy. The main problem with the pestle and mortar nowadays is that it is still used manually or by hand. This method uses a lot of human labour and takes a lot of time. The objective of this project is to develop a machine that can move a pestle and mortar automatically. This machine will use mechanical mechanisms, electric circuits, and other electric components to function. Hopefully, after this project is finished, it can help humans by converting human energy into electrical energy.

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# CHAPTER ONE

## INTRODUCTION

### 1.1 Background of Study

A pestle and mortar are tools used to prepare ingredients by crushing and grinding them into a fine paste or powder.[2] Pestle and mortar do a great job because they crush the ingredients instead of cutting them, and also, pestle and mortar do not produce heat that can damage the ingredients. The main problem with the pestle and mortar nowadays is that it is still used manually. This is why many people prefer other tools such as blenders instead of pestle and mortar. This problem can be solved by developing a pestle and mortar machine that can operate automatically.

### 1.2 Problem Statement

A pestle and a mortar are common tools in cooking. It has become a habit to have it in every home. The main problem with all pestles and mortars is that they are still used manually or by hand. This will use a lot of energy. Pestle and mortar are also heavy tools, so using them for a long period of time can give fatigue to the human body. Many people nowadays have turned to the use of blenders. This is because the pestle and mortar take a lot of time to complete work compared to the blender. But some of substances such as chemical substance is not suitable to use blender because the heat of blender. Some chemical substances are flammable, and the heat from the blender can damage the substance.