

UNIVERSITI TEKNOLOGI MARA

**DESIGN AND FABRICATION OF AUTOMATIC
FLOUR FILTER**

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ABSTRACT

The "Design and Fabrication of an Automatic Flour Filter" project is focused on developing a machine that will reduce the amount of power needed to filter flour, which is used in many kitchen operations. Due to the strainer's small surface area, the filtering process must be repeated until all of the flour is filtered, inspiring this project's conception among those working in food-related SMEs. Filtering the flour takes a significant amount of time. The goals of this project, on the other hand, are to develop an automatic flour filter using the "SolidWorks" software, fabricate a flour filter, and study how the strainer is rotated using the power window. The strainer in this product can be moved horizontally due to a power window coupled to a circular plate. Additionally, a converter is included for switching between DC and AC power. This project uses the mechanical engineering principle of power window rotation. At the end of the course, this project is able to design an automatic flour filter, fabricate this flour filter, and then analyze the motor's rotation as it moves the strainer.

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CHAPTER ONE

INTRODUCTION

1.1 Background of Study

As our industry evolves to IR 5.0, there are numerous new technologies and solutions that can help any work more efficient. However, several technologies and machinery are primarily targeted at large companies due to their size, price range, and significant maintenance expenses. As a result, the technologies are unsuitable for those who own small enterprises or work from home. Those who work in small and medium-sized businesses (SMIs) and associated industries anticipate that new technology will make their tasks easier, as one of their responsibilities is to prepare a significant volume of food for their clients. To be sure, completing the work requires considerable effort.

There are many reasons the small – scale industry cannot afford to buy a big machine due to its cost, size, and cost of maintenance. Besides that, the place where the business runs is not suitable to put a big machine as an example, in the house or small space. So, to filter the flour, the only method that can be used is by using a hand flour filter which required a lot of energy and time consumption to accomplish the job. It is because, a small-scale industry always deals with a huge quantity of flour to filter. This will require a machine that can filter the flour with less time and a lot of flour can be filtered at one time without having to do the same process continuously. By developing a machine that can filter flour in huge quantity in one time can give an advantage for people who work in small – scale industry.