

UNIVERSITI TEKNOLOGI MARA

**DEVELOPMENT OF A DESIGN,
ANALYSIS AND FABRICATION FOR
SHREDDER PAPER MACHINE**

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ABSTRACT

A machine that shreds paper into small pieces is known as an abstract shredder paper machine. It is frequently employed in workplaces, educational institutions, and other places where it is necessary to remove sensitive data. Paper is fed into a shredding mechanism in these machines, which then cuts it into thin strips or confetti-like pieces. After that, the paper waste is gathered in a bin or bag for disposal. Small desktop variants to significant, industrial-grade machines that can shred hundreds of sheets of paper at once are all examples of abstract shredder paper machines that come in different sizes and capacities. The design and development of a shredding machine for recycling waste are described in this study. For efficient trash recycling, the shredder must be designed, while various adjustments can be made to improve its efficiency. The past research on shredders has been discussed in this study, and it has been determined that they are crucial to and efficient in the recycling of garbage. Small- and medium-sized business owners may find it advantageous to construct small-scale shredders. Small-scale shredders may be advantageous because commercial shredders are highly expensive. Additionally, modifications to the feed rate, transmission system, and cutter blade design are crucial elements to consider while designing and developing shredder machines.

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CHAPTER ONE

INTRODUCTION

1.1 Background of Study

In 1909, a New Yorker by the name of Abbot Augustus Low invented the first shredder. He planned to create a wastepaper bin that would facilitate the proper disposal of paper products [1]. A paper shredder is a mechanical device used to cut paper into chad, typically either strips or fine particles.[1] There are many different forms of paper cuts, including strip cuts, cross cuts, particle cuts, cardboard cuts, pierce cuts, grinders, and disintegrators and granulators. However, the majority of shops that sell paper shredders concentrate on using cross cut and strip shredders.

Paper is a difficult material to dispose of. This is due to the fact that paper is formed of long fibres, which become shorter with each recycling, making recycling more difficult. The previous methods of disposing of paper are still available, but they will take far longer than the paper shredder machine itself. Some people still choose to burn the paper. Little do they know that numerous poisons and chemicals that are potentially harmful are created when open burning occurs.

Therefore, using a shredder paper machine is one way to save a lot of time and energy while avoiding a lot of work, toxins, and chemicals. It can help stop the worsening condition of our ecosystem. It can also help you get rid of private, confidential, or otherwise delicate papers. The shredder paper is extremely lightweight and portable. It is practical to use, especially when working.

This project aims to improve the paper shredder machine. The chosen concept will be generated using SolidWorks, and the design will be carried out by making use of a typical engineering process. And it can have reverse function to avoid the paper from jam or stuck between the blade by using motor gear and fanned in between the blades.