

UNIVERSITI TEKNOLOGI MARA

**DESIGN AND FABRICATION OF
PAPER SHREDDER MACHINE**

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ABSTRACT

This paper deals with the design of a paper shredder machine that will safely, efficiently, and without wastes shred documents. Much information is very private in nature, so it must be protected with the advent of information technology; hence, efficient destruction by way of document shredding remains a need at offices and personal levels. The goal is the realization of an affordable, user-friendly machine able to shred paper into small, unreadable pieces to ensure all useful data are destroyed, thus preventing unauthorized disclosure of any information. The project is intended to address the current weaknesses in document disposal methods, including inefficient manual tearing and unsafe burning implications on the environment. These will incorporate a detailed mechanical design phase, careful choice of materials and components, rigorous testing aimed at ensuring operational safety and efficiency, and complete documentation of the process from the development of a concept to the constructed prototype. The result should be an operative paper shredder that has predefined shredding capacities and is constructed ensuring noise reduction with a little disturbance effect, also including all the necessary precautions as to its safe use, and applicable in all situations where one needs a practical means for the secure disposal of documents. Such a project does not only meet particular technical requirements but also helps raise awareness with respect to data security and further track sustainable waste management practices in modern society.

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CHAPTER ONE

INTRODUCTION

1.1 Background of Study

Until there was modern paper, people communicated ideas through images and symbols chiseled on tree bark, daubed on the cave walls, and inscribed on papyrus and clay tablets. Before about 2,000 years ago, Chinese inventors created cloth sheets to write and draw on. That invention became the paper we use today.

Papermaking was probably invented by Ts'ai Lun, an officer in the Chinese court, in Lei Yang, China. He likely mixed together hemp, rags, and mulberry bark with water to a pulp and then skimmed off the pulp and dried it into thin sheets. It wasn't until some 300 years later, during the 8th century that this papermaking skill made its way to the Middle East. Some 500 more years passed before it reached Europe. Since one of the earliest paper mills was in Spain, it made paper production fairly common throughout the continent. The production also flourished in England, supplying its colonies with an enormous quantity well into the late 15th century. In America, the first paper mill came into being in Pennsylvania in 1690, from rags and worn-out clothes to tree fibers as demand increased.

In 1908, Abbot Augustus Low, of New York, invented the first paper-shredding machine under the name "Wastepaper Receptacle." He died in 1912 after having managed to make only one prototype of his invention, after which it was generally forgotten.

In the 1930s, a German toolmaker named Adolf Ehinger opposed the Nazi regime and sought a much more discreet method of disposing of sensitive materials. Using a pasta maker for inspiration, Ehinger designed a manual paper shredder and later improved it with an electrical motor. In 1936, during World War II secrecy, Ehinger patented the invention and sold the products nationally and internationally. But the demand for such a device only rose in the Cold War of the 1950s.