



# **THE WASTE OIL BURNER**

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## **ABSTRACT**

The physical phenomena and experimental studies have been carried out to determine the characteristics of a burner using waste oil as fuel. The objective of this project is to burn waste oil that is left over cooking oil and used lubricant oil. The long term objective is to use the heat or energy produce from the burning process for other purpose such as for water heater. But the long term objective will be carried out by next student project. The objective is only to burn the waste oil. Waste oils such as cooking oil or lubricant oil is one of the elements that pollute the environment. So, to minimize this problem, the burner was design with a hope to minimise this problem. Using of the Babington atomizer concept, oil will be atomize before burning it. The Babington atomizer concept has been used because the waste oil contains water, dirt, or other particulate matter. If other concepts of atomizer using are used, it was too difficult to burn the waste oil. The atomization process is to change liquid oil into small particles. Small particle form of oil is easy to burn. High pressure compress air is applied to give high velocity of air to atomize the waste oil. The oil is dropped at Babington atomizer and it wills from a surface tension, the thin film surface of oil is formed. Then high pressure of air is blown through this film of oil. In the process, the waste oil will change into vary small particle of oil. A flame will be supplied to give a required heat for the small particle of the oil start burning. Once if started it continue burning without applying any a heat source. During the burning process, the pressure and temperature data will be collected and analyses will be doing base on the burning process.

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## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 Oil Pollution**

It is important that oil used or stored in your home is managed carefully. Oil is one of the most common causes of water pollution. Because of the way it spreads in water even a small quantity can cause a lot of harm.

The waste oil forms a film on the surface of rivers and lakes which can reduce the level of oxygen in the water, making it difficult for fish to breathe. It can also coat plants and animals that come into contact with it. Large quantities of water are taken from rivers and groundwater for use as drinking water or for irrigation. Waste oil contamination can make the water unfit for these purposes. But waste oil not only effect to water but whole of environment. It can give bad effect for soil cause of waste oil. It will be effect to agriculture industry that the soil is most important element to agriculture.

As our responsibility to society is to make sure our environment or more specific is preventing oil pollution at home. One of the purposes is when you drain your engine oil put a drip pan beneath the vehicles oil pan. Do not tip the used oil down the drain. Many drains are connected directly to a river or stream and pollution will occur, and even small amount can cause serious environmental problems. Also make sure any oil stored around your home is labelled correctly.