INTRODUCTION:

Plastic were invented in 1860, but have only been widely used in the last 30 years plastic are light, durable, modifiable and hygienic. Plastic are made of long chain of molecule called Polymers. Polymers are made when naturally occurring substance such as crude oil or petroleum are transformed into other substance with completely different properties. These polymers can then be made into granules, powders and liquids, becoming raw materials for plastic products.

Plastics have become an indispensable part in today's world. Due to their light weight, durability, energy efficiency, coupled with faster rate of production and design flexibility, these plastics are employed in entire gamut of industrial and domestic areas. Plastics are produced from petroleum derivate and are composed primarily of hydrocarbons but also contain additives such as antioxidants, colorants and other stabilizers. Disposal of the waste plastics poses a great hazard to the environment and effective method has not been implemented. Plastics are non-biodegradable polymers mostly containing carbon, hydrogen, and few other elements like nitrogen. Due to its non-biodegradable nature, the plastic waste contributes significantly to the problem of waste management. According nationwide survey which was conducted in the year 2000, approximately 6000 tones of plastic were generated in India, and only 60% of it was recycled, the balance of 40% could not be disposed off. Today about 129 million tones of plastics are produced annually all over the world, out of which 77 million tones produced from petroleum.

In India alone, the demand for the plastics is about 8 million tones per year. More than 10,000 metric tones per day plastics are produced in India and almost the same amount is imported by India from other countries. The per captia consumption of plastics in India is about 3kg when compared to 30kg to 40kg in the developed countries. Most of these come from packaging and food industries. Most of the plastics are recycled and sometimes they
are not done so due to lack of sufficient market valve. Of the waste plastics not recycled about 43% is polyethylene, with most of them in containers and packaging.

**OBJECTIVES**

This project attempts to show how human has been utilizing the energy and explore prospects of optimizing the same one of the alternative fuels is household plastic waste oil. Fuel obtained from pyrolysis process shows nearly same properties as that of diesel fuel. So we can use plastic oil as alternative fuel. The objectives of this project are given below.

- To collect the household plastic waste from different places.
- Drying and Storing of plastic waste.
- To develop and fabricate the pyrolysis unit to produce liquid fuel from plastic waste.
- Conversion of household plastic waste in to liquid fuel.
- To purify the produced liquid fuel by water washing method.
- To conduct the different experiments to determine the different properties of liquid fuel.
- Compare the properties of liquid fuel with diesel fuel.

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