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EXPERIMENTAL INVESTIGATION PROPERTIES OF CRUDE & DISTILLED TPO & PPO

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ABSTRACT

Conventional fuels petrochemicals are available in limited sources. And increase in demand of such fuels is extremely high, so it might result in energy crises. So it is our duty to fulfill essential engineering need of society. In order to do that we are finding new economical easily available resources to replace conventional fuel. Plastic is such a material which cannot get destroyed about 400 years, if we burn plastic it may emit hazards gases which are also negatively affect on environment. Similarly waste tire is available in abundant quantity. One of the surveys says that US alone, over 290 million car tires are discarded annually. Hence we decided to use tire and plastic waste for making alternate fuel.

Pyrolysis - The word "Pyrolysis" is originally obtained from Greek language, Pyro means 'Fire' and Lysis means 'separating'. Pyrolysis is a thermo chemical decomposition of organic material at elevated temperatures in the absence of oxygen or any kind of halogen. It involves the simultaneous change of chemical composition and physical phase, and is irreversible. Pyrolysis is usually the first chemical reaction that occurs in the burning of many solid organic fuels and also of some kinds of plastic.

Distillation - It is a process of separating the component substances from a liquid mixture by selective evaporation and condensation. Distillation may result in essentially complete separation nearly pure component, or it may be partial separation that increases the concentration of selected components of the mixture. In either case the process exploits differences in the volatility of mixture's components. In industrial chemistry, distillation is unit operation of practically universal importance, but it is physical separation process and not a chemical reaction.

The main objective of this abstract is to compare the thermo physical properties of distilled and crude Tyre Pyrolysis oil and Plastic Pyrolysis oil with different proportions of diesel.

KEY WORDS: Pyrolysis, Distillation, Blend, TPO, PPO, Thermo physical properties.