

# Extraction of Biodiesel from Non-Biodegradable Plastic

Suresh D. Dhage

Department of Chemistry, SSJES, Arts, Commerce and Science College, Gangakhed, Parbhani, M.S., India  
dhage137@gmail.com

**Abstract:** High oil prices are growing concerns of this century, thus extraction of biodiesel from a nonbiodegradable substance is a boon to the society. The major available non-biodegradable substance in the society is plastic. The thermal and catalytic processes of converting waste plastics into fuels are promising techniques to eliminate the hazards which are harmful to the environment, and decrease the dependence on fossil fuels. Thermal degradation decomposes plastic into three fractions: gas, crude oil, and solid residue. Crude oil from non-catalytic pyrolysis is usually composed of higher boiling point hydrocarbons. The optimization of conversion parameters such as the choice of catalyst, reactor design, pyrolysis temperature, and plastic-to-catalyst ratio plays a very important role in the efficient generation of gasoline and diesel grade fuel. The catalyst helps to lower the energy required for conversion, and the catalyst choice is very necessary for efficient fuel production. The specific and selected catalyst helps to increase the yield of crude oil with lower hydrocarbon content. Co-pyrolysis of plastics with coal or shale oil improves crude oil quality by decreasing its viscosity.

**Keywords:** Plastic, Pyrolysis, Carcinogenic, Biomass, Gasoline, Hydrocarbons, Industrial Plastics, Viscosity.

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