

PRODUCTION OF WASTE POLYETHYLENE BAGS IN TO OIL AND STUDIES PERFORMANCE, EMISSION AND COMBUSTION CHARACTERISTICS IN DI DIESEL ENGINE

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ABSTRACT

Fast demanding of conventional fossil fuels, rising costs and environmental issues are the major problems for alternate fuel. On the other hand waste plastic poses very serious environmental challenges because of their disposal problems all over the world. The oil obtained by pyrolysis of waste plastics and analyzed properties of the oil were found that it has properties similar to that of diesel. It can be utilized as an alternate fuel for diesel engine without any modifications to the engine which results, Oxides of nitrogen (NO_x) was higher by about 17ppm and carbon monoxide (CO) increased by 0.07% for waste plastic oil (WPO) operation compared to diesel. Unburnt Hydrocarbon (UBHC) was higher by about 14ppm and Smoke increased at full load with WPO compared to diesel. The exhaust gas temperature (EGT) was higher at all loads compared to diesel.

KEYWORDS: Waste Plastic Oil, Pyrolysis Process, Diesel Engine, Performance, Emission