

EMISSION ANALYSIS OF CI ENGINE USING SOYA OIL AND THEIR ESTERS

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Abstract

This paper deals with performance Analysis of Compression Ignition Engine using alternative fuels as Soya oil and their ester after esterification for different engine load from 1.8 kg to 6.6 kg and different blending ratios like B0,B25,B50,B75,B100 and BO0,BO10,BO20,BO50,BO75,BO100 . Alternative fuels are typically produced through the reaction of a vegetable oil or animal fat with alcohol in the presence of the catalyst to produce their esters for improving the properties of alternative fuels. With the help of above fuels and different load we found the basic specific fuel consumption, brake thermal efficiency, and comparative performance analysis of both the fuel i.e. bio-fuels and their ester. After finding out the emissions i.e. HC emissions, CO emissions, smoke density and exhaust gas temperature for different blend ratios of soya oil and their ester with the variation of engine load to validate the new fuels as an alternative fuel for CI engine.

Keywords : Alternative Fuels, Esterification, Soya oil, soya oil blends, Emissions, CI Engine