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Experimental Investigation on Lubricating Oil by Using Bio-Diesel as Fuel in Ci Engine

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Abstract:Biodiesel is an alternative fuel that can be produced from renewable feedstock such as edible and not- edible, vegetable oils and animal fats. Various properties of bio-diesel and diesel fuel are found to be comparable according to the past research. The increased use of biodiesel fuels has raised concerns over the impact of the fuel on the engine performance. In searching of the new source, cardanol has been selected as the alternative fuel. A four stroke diesel compression-ignition (CI)engine was subjected to run in on- road tests, fuelled by optimized biodiesel blend (40% cardanol oil) and diesel oil respectively. Varioustribological studies on lubricating oil samples, drawn in the service the interval for the single cylinder engine was conducted, in order to correlate the comparative performance of the two fuels (diesel and B40%) and the effectof fuel on lubricating oil performance. A number of tests were conducted in order to evaluate comparative performance of the fuels such as density, viscosity, flash point, ash content, moisture content, Total base number(TBN), Total Acid number(TAN), acid value and volatile matter determination, etc.Wear properties of lubricants are presently determined by the pin on disc wear tests. All these tests were. are carried out as per the ASTM methods. Performance of B40 is found to be superior to that of diesel fuel and the lubricating oil life is found to have increased while operating the engine on this fuel and the operating cycle can be increased.

Key words :Bio diesel,lubricating oil, properties.

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