VISVESVARAYA TECHNOLOGICAL UNIVERSITY

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The Project Report on

"PERFORMANCE AND EMISSION ANALYSIS OF SINGLE CYLINDER DIESEL ENGINE WITH VARYING INJECTION PRESSURE AND TIMING FUELLED WITH MESUA FERREA OIL AS BIO-DIESEL"

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ABSTRACT

Import of petro-diesel products is major drain on our foreign exchange sources and with growing demand in future years the situation is likely to become even worse. Fossil fuels operated engines are the main sources of carbon monoxide, un-burnt hydrocarbon and other emissions which increase the pollution levels in the atmosphere that leads to problems like global warming and greenhouse effect. The world is on the brink of energy crises due to various reasons and faster degradation of conventional fuels also. Hence, Biodiesel is considered as one of the most promising alternate fuel for diesel engines.

Preparation of biodiesel fuel (mesua ferrea) by using trans-esterification process will be done as per the standards. The various performance characteristics of the engine like thermal efficiency, Brake specific fuel consumption, mechanical efficiency and emissions like carbon monoxide and hydrocarbons are studied by using neat mesua ferrea biodiesel as an alternate fuel with varying injection pressure and time at various loading conditions. After that various blends of biodiesel and diesel varying from (10%-30%) will be studied at same conditions to analyze the performance and emission characteristics on the diesel engine. Hence, it is expected that performance will be enhanced and emissions of mesua ferrea biodiesel and blended biodiesel fuel will be lower compared to diesel fuel Engine.