

# Renewable Energy and Resources & Energy Materials and Fuel Cell Research

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## Performances and emissions characteristics of methanol blended with vegetable oils as alternative fuels in compression ignition engine

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In view of increasing pressure on crude oil reserves and environmental degradation as an outcome, fuels like Methanol blended with Apricot oil, Pogamia oil, Cottonseed oil may present a sustainable solution as it can be produced from a wide range of carbon-based feedstock. The present investigation evaluates Methanol blended with Apricot oil, Pogamia oil, Cottonseed oil as a diesel engine fuel. The objectives of this paper are to analyze the fuel consumption and the emission characteristic of a twin cylinder diesel engine that is using Methanol blended with Apricot oil, Pogamia oil, Cottonseed oil & compared to the usage of ordinary diesel that is available in the market. A Twin cylinder diesel engine was adopted to study the brake thermal efficiency, brake specific energy consumption, and emissions at zero load & full load with the fuel of Methanol. In this study, the diesel engine was tested using Methanol blended with Apricot oil, Pogamia oil, Cottonseed oil. By the end of the experiment, the success of the experiment has been started which is Diesel engine is able to run with Methanol blended with Apricot oil, Pogamia oil, Cottonseed oil but the engine needs to run by using diesel fuel first, then followed by Methanol blended with Apricot oil, Pogamia oil, Cottonseed oil and finished with diesel fuel as the last fuel usage before the engine turned off. The performance of the engine using Methanol blended with Apricot oil, Pogamia oil, Cottonseed oil fuel compared to the performance of the engine with diesel fuel. Experimental results of Methanol blended with Apricot oil, Pogamia oil, Cottonseed oil and Diesel fuel are also compared.

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