

Influence of Binary and Ternary Fuels on the Performance and Emission Characteristics of DI Diesel Engine – A Review

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Abstract: *World transportation mainly depends upon fossil fuels at the same time demand of fossil fuel and price of the same increases day by day. Strict environmental regulations are implemented over the years to restrict exhaust emissions for protect the environment from the harmful exhaust by fossil fuel. Keeping these things in mind, the past several decade researchers gave lots of effort to search for alternate fuels to overcome the reliance on fossil fuel. From this perspective, many alternate fuels such as alcohol fuels, vegetable oils, Di ethyl or methyl ether, and biodiesel etc., have been widely analyzed. This review shows that engine emission and performance is dependent on some factors such as engine operating condition, bio fuel types, blending etc. Both binary blends (alcohol/diesel, vegetable oil/diesel, biodiesel/diesel, ether/diesel) and ternary blends (biodiesel/alcohol/diesel, vegetable oil/alcohol/diesel, ether/vegetable oil /diesel, biodiesel/ ether /diesel) has a major role in increasing the performance characteristics like brake thermal efficiency (BTE), brake specific fuel consumption (BSFC) and reducing the exhaust gas emission such as carbon monoxides(CO), hydrocarbons (HC), particulate matter(PM) in DI diesel engine. Ergo, this review offers potential approach for the researchers for improving the engine performance and emission characteristics by using the binary and ternary blends with beneficial results.*

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