



Experimental Investigation of effect of n-butanol to Diesel on the Performance and Emission characteristics in Diesel engine

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Abstract : An Experimental investigation of diesel-butanol blends in various proportions is conducted in a diesel engine. Nitrogen oxides and smoke emission are the most significant emissions for the diesel engines. Especially, fuels containing high-levels oxygen content can have potential to reduce smoke emission significantly. The aim of the present study is to evaluate the influence of *n*-butanol/diesel fuel blends of higher *n*-butanol content (as an oxygenation additive for the diesel fuel) on engine performance and exhaust emissions in diesel engine. Blends take for this study are 30% and 45% of *n*-butanol along with diesel. Properties of the two blends are determined as per ASTM standards and tested in a diesel engine. The results are compared with diesel as base fuel. The results showed that for both blends there is a decrease NO_x emissions for both blends at all loads compared to diesel and decrease of CO emissions at higher loads. However, there is a decrease of BTE and increase of BSFC, emissions of HC.

Keywords: *n*-butanol, diesel, performance characteristics, emission characteristics, diesel engine.

B. Prabakaran *et al* /International Journal of ChemTech Research, 2016,9(5),pp 500-506.
