

An Overview of Spark Ignition Engine Operating on Lower-Higher Molecular Mass Alcohol Blended Gasoline Fuels

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ABSTRACT

This paper reviews the utilization of lower and higher molecular weight alcohols as fuel for spark ignition engine. As an alternative fuel for spark ignition engine, alcohol is widely accepted as comparable to gasoline. It is due to its ability that can be produced from biological matter through the current available and new processes. Moreover, alcohol is also considered as fuel additive due to its physical and chemical properties compatible with the requirements of modern engines. The objective of this paper is to provide an overview of these fuels by highlighting on the fuel properties and spark ignition engine responses. The first part of this review explains the importance of alcohol fuel properties related to the engine performance and emissions, and the difference of these properties for each type of alcohol. The second part discusses recent advancements in research involving lower and higher molecular weight alcohols mainly responses from spark ignition engine.

KEYWORDS: Engine performance, emission, methanol, butanol, spark ignition engine

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