

EXPERIMENTAL INVESTIGATION OF EFFECT OF CNG BLENDING ON PERFORMANCE AND EMISSION CHARACTERISTICS OF CI ENGINE

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Abstract

Small diesel engines are widely used all over the world. Apart from conventional use in irrigation, power generation and river transportation, they are having many alternative applications. Running such engines in dual fuel mode with indigenous natural gas could have a significant impact on the imported diesel consumption. The objective of this work is to evaluate dual fuel operation of small diesel engines with simplest possible change of hardware. For using CNG a cross-flow gas mixing chamber is going to add to the air intake. Here the effort has been done to determine the performance and emission characteristics of CNG blend in CI engine. The maximum achievable diesel replacement by natural gas was found to vary with engine loads. The engine showed very similar performance compared to diesel only operation near up to 90% of rated load with up to 54% replacement of diesel by natural gas being possible.

Keywords : Dual fuel, Small diesel engines, Natural Gas, Performance and emission characteristics