

EMISSION CHARACTERISTICS OF A HIGH SPEED DIESEL ENGINE

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ABSTRACT

The investigation of emission characteristic of single cylinder using normal diesel and high speed diesel is done. The engine is run at different loading conditions and time required for the consumption of metered quantity of fuel is measured which the emission readings were taken to avoid ambiguity and to achieve consistency in results. The loading of the engine is done with the help of an alternator coupled with it. The output of this alternator is fed to the series of light-bulbs of different wattages. Before taking any measurements the engine is allowed to run for 5 to 7 minutes and then by gradually putting each bulb on the engine is made to run on a particular load. The engine emissions were recorded by MRU GMBH DELTA 1600 L exhaust gas analyzer. The HC, NO_x, CO₂ emissions characteristics shown by the engine for both fuels are diverging indicating better combustion efficiency at higher loads for high speed diesel than normal diesel. The results show that the use of high speed diesel is recommended in automotive applications.

KEYWORDS: High Speed Diesel (HSD), Normal Diesel (ND), Exhaust Gas Analyzer (EGA), Hydrocarbon (HC), Direct Initiation (DI), Exhaust Gas Recirculation (EGR)