

Reduction of NO_x Emissions via Diesel Water Emulsion Fuel: An Overview

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Abstract:

In terms of pollution and the depletion of diesel fuel resources, the increased use of diesel vehicles and equipment presents significant issues. Over the past 20 years, significant reductions in diesel emission levels have been made. One difficult research goal is to develop diesel engines that can use renewable fuels and comply with new pollution standards. The primary pollution from diesel engines is nitrogen oxides (NO_x). The reduction of high temperatures caused by evaporated water during combustion is the source of NO_x reduction. Additionally, micro explosions that result in secondary atomization of diesel fuel increase performance. Research and development of water-in-diesel (W/D) emulsion fuels has been ongoing in an attempt to achieve efficient energy development with less pollution from current diesel engines. It could concurrently lower nitric oxide (NO_x) emissions and raise performance levels. The current conversation covers the fundamentals of W/D emulsion fuel as well as the impact of micro-emulsion on the fuel's emission and rate of combustion.

Keywords:

Diesel Engine, Emissions, Diesel Water Emulsion.