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Enhancing diesel engine combustion using hydrogen enriched fuels – A Review

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Abstract: Hydrogen is hovering to become a chief constituent in the energy-mix in the coming years to meet the growing energy needs for world's economy, while protecting the environment and guaranteeing energy security. It is envisioned that hydrogen will be available for an extensive range of applications including power generation, portable, transport, and heating applications. The present paper analyses the enhancement of diesel engine combustion using hydrogen enriched fuels. In this analysis, three fuels enriched with hydrogen were selected. They are Liquefied Petroleum Gas (LPG), Methane, and Synthesis Gas (Syn gas). In all the analysis, the results obtained by lone diesel fuel operation was taken as a base line to examine the efficacy of the hydrogen enriched diesel fuel combustion. The analysis revealed that the use of hydrogen enriched fuel in a diesel engine combustion, enhances the combustion phenomena of diesel engine undoubtedly.

Keywords : hydrogen enrichment; dual fuel; brake thermal efficiency; NO_x emission

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