

International Energy Journal, Volume 13, Issue 2, June 2012[HOME](#) | [ABOUT](#) | [USER HOME](#) | [SEARCH](#) | [CURRENT](#) | [ARCHIVES](#)[Home](#) > [Volume 13, Issue 2, June 2012](#) > [Venkateswarlu](#)

Improvement of Engine Performance and Emissions with Ethyl Hexyl Nitrate and Diesel-Biodiesel Blends

K. Venkateswarlu, K. Ramakrishna, K. Vijaya Kumar

Abstract

Diesel-biodiesel blends improve the performance and reduce the emission effects in a compression ignition engine except NO_x . Cetane improvers reduce the ignition delay, which in turn reduces the combustion temperatures thereby reduces NO_x emissions. The present work was aimed at an experimental investigation of Ethyl Hexyl Nitrate (EHN) as an additive to the diesel-biodiesel blends. Experiments were conducted on a 4-stroke single cylinder diesel engine by varying the percentage by volume of EHN in diesel-biodiesel blends. The effect of EHN on Brake Thermal Efficiency (BTE), Brake Specific Fuel Consumption (BSFC), cylinder pressure and exhaust emissions was studied. It is found that cylinder pressure was lower at higher EHN percentage which was accompanied by an increase in BTE and smoke density. Further CO and NO_x emissions were reduced with increase in EHN percentage.

Full Text: Subscribers Only