عنوان مقاله:

Conversion Efficiencies of Urea –SCR System for Mahua Methyl Ester Fuelled DI Diesel Engine

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خلاصه مقاله:

Stringent emission regulations on diesel-powered vehicles and some of biodiesel emissions have led to development of new technologies to reduce emission of nitrogen oxides (NOX). Out of the choices available,Selective Catalytic Reduction (SCR) has shown to be the most promising exhaust after-treatment system forreducing oxides of nitrogen in the near term in-use applications. SCRs use the ammonia containing compoundurea, as a reducing agent. This paper describes an experimental investigation of Urea-SCR,which has beendesigned for comparing efficiency of the SCR system for diesel and biodiesel. For this study, a SCR exhaustsystem was tested on a steady state, direct injection Kirloskar single cylinder diesel engine. Mahua MethylEster (MME) oil has used as a biodiesel. From the experimentation, it was concluded that the conversionefficiencies were higher for diesel comparable to biodiesel. The analysis also shows the Urea SCR system has a maximum of 93.4% NOX conversion efficiency of diesel fuel. For biodiesel, maximum NOX conversion efficiency of Urea-SCR was approximately 49%. This experimentation also revealed that the Urea-SCR system hasan excellent HC conversion efficiency at all engine loads and using both fuels.

کلمات کلیدی:

Selective Catalytic Reduction System DI Engine Mahua Oil Biodiesel CO2 NOX