The analysis of combustion of reactivity controlled compression ignition (RCCI) engine with different biodiesels

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1. Abstract

The main purpose of this paper is to highlight the latest improvements in (IC) engine fuel efficiency and combustion performance. Increasing fuel prices and stringent emissions requirements now require cleaner combustion and improved fuel efficiency of IC engines. This increased efficiency requirement places the compression ignition (CI) engine at the forefront compared to spark ignition (SI) engines. However, the relatively high emissions of nitrogen oxides (NOx) and particulate matter (PM) emitted by diesel engines increase their cost and increase environmental barriers that hinder their widespread use in certain markets, and affect the environment, resulting in unnecessary Environmental pollution. Therefore, the desire to improve the fuel efficiency of IC engines while meeting emission requirements has led to considerable research. The progress of diesel or CI engine fuel efficiency is improved primarily by simulating advanced combustion and fuel research. This paper studies the simulation study of RCCI of the engine, and compares the simulation studies of traditional fuels and alternative fuels (natural gas, ethanol and biodiesel, etc.) before combustion.

Keywords: RCCI engine, Alternative fuels, Efficiency, Particulate matter, oxides of nitrogen.