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An overview on fuel properties and prospects of Jatropha biodiesel as fuel for engines

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Abstract

The demand for energy is ever increasing since the establishment of human society. In recent years, the demand for energy is steadily increasing due to growth of population and industrial development. As conventional sources of energy are on the verge of extinction and are considered threat to the environment, search for alternative forms of energy is increasing. Biodiesel is one of the sources that can play a pivotal role for future energy, especially in transportation sector, as an alternative to diesel fuel. Jatropha is regarded as one of the best options for biodiesel production in tropical and subtropical developing countries. In terms of fuel properties and emission factors, biodiesel from Jatropha has advantages over conventional diesel. In addition, Jatropha biodiesel when compared with other biodiesels is more environment friendly as there is less emissions of greenhouse gases. A review on performance of Jatropha as a fuel shows that, although emission of NOx is increased from 5.58 to 25.97%, PM is reduced by 50 to 72.73 %, CO by 50 to 73 %, HC by 45 to 67 % and CO_2 by 50 to 80 %. However, the future of the Jatropha biodiesel will also depend upon the establishment of low-cost and competent biodiesel production technologies.

Key words: Alternative energy, Biofuel, Biodiesel, Jatropha, Greenhouse gas emissions