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Combustion heat release models of biodiesels

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Fossil fuels such as standard gasoline and diesel fuel are the most important source of energy for our society today, providing the bulk of global energy requirements for transportation, construction, heating, and agriculture. Many new developments in technology have made alternative sources of energy more economically feasible including advances in solar, wind, geothermal and nuclear energy. It is a domestic, clean-burning, renewable liquid fuel that can be used in compression-ignition engines instead of petroleum-based diesel with little or no modifications. Bio-diesel blends are more commonly used than pure B100 fuels. The main reason for this is that running 100% bio-diesel sometimes requires modifications to the engine, due to the higher content of alcohol present in bio-diesel. These modifications require fuel lines to be changed to steel, as alcohol will corrode the rubber lines more commonly used. The letter "B" designates the type of fuel, in this case Bio-diesel, while the number after it designates the percentage of bio-diesel. B5 contains 5% bio-diesel mixed with 95% petroleum diesel. Following this rule, B20 has 20% bio-diesel and 80% petroleum diesel. The aim of this research is to investigate the viability of using bio-diesel as an alternative, or additive, to basic diesel fuel. The engine performance is to be evaluated along with the emission characteristics for an engine running with bio-diesel and traditional fuels.

Biography

Abdullah Abuhabaya has graduated from Um-Alqura University with Bachelor's degree in Mechanical Engineering in 2002, and the University of Huddersfield in UK with Master of since in automotive system design and analysis and then PhD in Mechanical Engineering in 2012. His research interests are in Biofuels, Engine performance and exhaust gas emission analysis, also in design and analysis of machines. He participated in a number of international conferences and workshops in UK, China, Turkey and Cyprus and published a lot of work papers in alternative fuels for internal combustion engines.

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