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Modelling of a three-shaft high-bypass-ratio engine performance and emission prediction using hydrogen fuels (Article)

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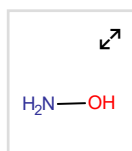
Abstract

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The price of oil has seen an unprecedented increase and the resulting demand for oil, especially from the transportation industries. The pollution emits from the vehicle has affected human health and environmental problems especially aviation industries because the emission covers much broader spectrums. Drop-in alternative fuels such as liquefied hydrogen fuel are believed to offer better engine performance and reduce the emission. An in-house computer tool, PYTHIA was used to model the performance of RB211 engine at a wide range of flight operations. Liquid hydrogen fuel will increase the thrust and the specific fuel consumption up to 63.9% reduction at higher speed. Liquid hydrogen fuel resulted in higher burning temperature which encourage the formation of NOx. At the sea level, it was found that EINOx was increased to about 5.5% when 20% blended ratio was used. © BEIESP.

Chemistry database information

Substances



Author keywords

[Emission](#) [Engine performances](#) [Hydrogen biofuel](#) [Jatropha biofuel](#)

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