

柴油机燃烧生物油/柴油乳化燃料的负荷特性 Bio-oil/Diesel Emulsion Fuel Load Characteristics of Diesel Engine

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关键词: 柴油机 生物油 乳化燃料 负荷特性

摘要: 将玉米秸秆粉热解液化得到的生物油和0号柴油以及适量的乳化剂混合均质, 得到不同配比的2种生物油/柴油乳化燃料。在ZS1110型柴油机台架上进行2种生物油/柴油乳化燃料和纯柴油的发动机台架实验, 获得乳化燃料和纯柴油的柴油机负荷特性曲线。研究表明: 2种乳化油的有效热效率均高于纯柴油, 且生物油浓度为15%的生物油/柴油乳化燃料较纯柴油有明显的节油效果。但乳化燃料使柴油机喷嘴发生积碳现象。 Emulsified fuel was produced by mixing bio-oil pyrolyzed corn stalk with commercial No.0 diesel oil as well as surfactants using a homogenizer. The performances of bio-oil/diesel oil emulsified fuels with two different bio-oil/diesel oil ratios were tested on a ZS1110 diesel engine. The load characteristic curves of the diesel engine were determined. The experimental results showed that the effective thermal efficiency of two kinds of emulsified fuel was higher than that of the pure No.0 diesel oil. For emulsified fuel at bio-oil concentration of 15%, the specific fuel consumption was lower than that of No.0 diesel oil. However, there was often carbon deposition surrounding the diesel injector nozzle when using emulsified fuel.

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