

عنوان مقاله:

An Experimental Study on Producing a Sustainable Diesel-like Fuel from Waste Engine Oil

محل انتشار:

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خلاصه مقاله:

Used engine oil is one of the most environment pollutants that is produced in large quantities. Methods of recycling and reuse of the oil are important for sustainable environment. In this work, a new experimental method is proposed for producing diesel-like fuel from the waste engine oil. The study proposes new physical and chemical treatment methods to produce diesel-like fuel from the used engine oil. The produced oil is chemically analyzed to characterize the produced engine oil fuel for application in a diesel engine, to calculate the power produced, to measure the gaseous emissions and to compare with the standard diesel fuel. The diesel-like fuel properties are investigated including viscosity, flash point, pour point, energy content, and gaseous emissions. The diesel-like fuel proves to emit less gaseous pollutants such as NO_x than the diesel fuel. The diesel-like fuel is tested in a diesel engine which provided the efficiency of 22.4%. The proposed experimental approach proves sustainable for producing diesel-like fuel from waste engine oils and protects the environment from the abundant amount of the waste engine oil.

کلمات کلیدی:

air pollution, Engine oil, Environmental management, Fuel, Waste

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