

Experimental Study on The Effects of Feedstock Composition on The Properties of Biodiesel

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Abstract. Biodiesel as an alternative diesel fuel holds promise for the future of alternative fuels. Biodiesel that derived from renewable resources such as vegetable oils and animal fat was used in this experimental study. The main objective of this study is to produce biodiesel from different initial feedstock and to study the composition and the quality of produced biodiesel. Biodiesels samples were produced from seven different types of vegetable oil (sunflower, peanut, walnut, beef tallow, rapeseed, hydrogenated coconut and hydrogenated copra oil). Then, biodiesel quality was tested according to the EU 14214. The results have related methyl ester profile to several specifications such as viscosity, density, flash point, cold filter plugging point, higher heating value, iodine value and oxidative stability. The results show that high degree of unsaturation will increase the higher heating value and density. On the other hand, large number of double bonds will lower the oxidation stability and reduce viscosity.