

Simultaneous Transesterification of Baobab Seed (*Adansonia digitata*) Oil Using Heterogeneous Zn/SiO₂ Supported Catalyst

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Abstract

*Using heterogeneous Zn/SiO₂ supported catalyst, simultaneous transesterification of Baobab seed (*Adansonia digitata*) was investigated. Parameters such as temperature, catalyst loading, water dilution, acid concentration and methanol seed ratio were investigated. The results show that Baobab seed oil was successfully converted to methyl ester with the highest yield of 50.9 % at the temperature of 70 °C, catalyst loading of 1 wt. %, water dilution of 50 mL, at 2 h reaction time, methanol seed ratio of 15:1 and 1 M of acid concentration. The properties of the Baobab seed methyl ester gave the following: specific gravity, 0.87, pour point, -6 °C, cloud point, 2 °C, flash point, 150 °C, Cetane number, 49, which is comparable with the ASTM D6751 standards for methyl esters.*

Keywords: Heterogeneous catalyst, Simultaneous transesterification, Baobab seed, Methyl ester

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