



## Pyrolysis of palm oil in a continuous flow microchannel reactor

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Palm oil is considered as a potential feedstock for biofuel production in Thailand due to its property and availability. In recent years, there has been increased attention on upgrading of palm oil to biofuels using various technologies. One of the most promising technology is pyrolysis, in which palm oil is heated at the temperature in the range of 400 to 500 °C under oxygen-free atmosphere. In the present study, the pyrolysis of palm oil for biofuel production at temperature of 400-500 °C with various catalysts (MgO, Al<sub>2</sub>O<sub>3</sub>) in a continuous flow microchannel reactor was investigated. The composition of pyrolysis products were analyzed by GC-FID and GC-MS. Liquid yield solid yield and gas yield were investigated in a flow rate of palm oil in range 2-6 ml/hr. Weight of catalysts (MgO, Al<sub>2</sub>O<sub>3</sub>) approximate 21 g/m<sup>2</sup>. The experimental results showed that the pyrolysis liquid products composed of hydrocarbons, free fatty acids, and other oxygenated compounds. The main of free fatty acid compose of palmitic acid and oleic acid which come from cracking reaction of triglyceride. Product selectivity of palm oil pyrolysis was depend on flow rate of palm oil temperature and catalyst type.

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