



CHAPTER V CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

The performance of Pd supported on various types of carbon support which are Pd/carbon aerogel, Pd/activated carbon, and Pd/granule activated carbon in the partial hydrogenation of polyunsaturated FAME was studied. Moreover, the effect of types of carbon support, hydrogen partial pressure, temperature, and hydrogen flow rate were studied.

Partial hydrogenation over 2 wt. % Pd/granule activated carbon under pressure 4 bar, 50 ml/min of H₂ flow rate, 120°C, 500 rpm of stirring rate, and 1.5 wt. % of catalyst compared to starting oil is enough to improve the oxidation stability of the resulting. It biodiesel exhibited better property in term of partial hydrogenation compared to Pd/aerogel, Pd/activated carbon (850µm) and Pd/activated carbon (40µm) by biodiesel product after 1.0 h.

5.2 Recommendations

Variation of percentage of Pd loading on carbon support and other reaction conditions such as amount of catalyst are required for further study. And finding the new type of support with high surface area and low-cost is another attractive study.