

CHAPTER VI

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The experiment results from cracking of polybutene-1 by Fe/Activated carbon catalyst by varying the parameters: percent of Fe loading, reaction temperature, initial hydrogen pressure and reaction time would be concluded as follows:

1. Fe on activated carbon catalyst is the suitable catalyst for cracking of polybutene-1 to liquid fuels.

2. From the experimental results obtained from this study, it could be concluded that, suitable conditions are as follows:

- 1.1 Suitable temperature is 410°C
- 1.2 Suitable catalyst amount is 0.3 g
- 1.3 Hydrogen pressure is 40 kg/cm^2
- 1.4 Time for reacting is 60 min
- 1.5 Percentage of iron on activated carbon does not affect oil composition

At temperature 410°C , hydrogen pressure 40 kg/cm^2 , reaction time 60 min with 5%Fe/AC the oil yield 88.57%, gas yield 6.86%, naphtha 45.76%, kerosene 13.77%, gas oil 9.59%, long residues 12.56% and solid was 4.57%.

Recommendation

1. Study of coprocessing with aromatic polymer in order to increase the octane number of oil product.
2. Study of the experimental in large scale for applying in industry.