CHAPTER V

CONCLUSIONS

The reactions were studied under low hydrogen pressure and carried out with a mixture of reactant, NGL, on Pt-F/Al_2O_3 and Pt-F/4A molecular sieve catalysts. Aromatization of NGL occurred well at a temperature of about 430°C and a hydrogen pressure of about 40 psi. Under this condition, the production of aromatics appeared to be high yield of toluene and benzene, with small amount of xylenes.

There were many factors that have had the influence on the aromatization of NGL. The temperature had the most influence. The supported metal played the major role in the reaction. From the experiments, it indicated that the suitable catalyst for aromatization of NGL was 0.6%Pt and 0.5%F/Al_2O_3 catalyst at 430°C and 40 psi of hydrogen pressure. The obtained product had 93 % by weight of total aromatics. The percent total conversion was 88 % by weight and the percent yield of aromatics related to total conversion was 95 %. The suitable solid support for aromatization of NGL was alumina when compared with 4A molecular sieve.

The studies of the activities of the used catalysts and the reproducibility indicated that there was a reproducibility of aromatization reaction. However the activity of catalyst was reduced after the second time of regeneration of the catalysts. When compare the first regeneration of catalyst with the second regeneration of catalyst, the total conversion decreasing from 70.55 % to 24.04 % at 430°C and 40 psi of hydrogen.

Suggestions for Future Works

1. The products from using molecular sieve as solid support are mostly the branched-chain paraffins. This is perhaps the way leading to an improvement in the octane number of gasoline by using a mild condition in operation.
2. The injection system of the reaction unit should be further developed in order to continuous feeding of NGL. In addition, should be ease to introduce the feedsteam at a high pressure.
3. The reactor should be modified that can be operated at high pressure because reaction at high pressure made a short cycle of regeneration at catalyst.