

CHAPTER 5

CONCLUSIONS AND FUTURE SUGGESTION

5.1 CONCLUSIONS

The main conclusions of the present work are as follows :

- 1) Regarding the temperature effect, more n-hexane was converted as the reaction temperature rose. The temperature effect, however, became "saturated", i.e. less significant when the temperature sufficiently high, say, 320 °C and 340 °C.
- 2) The lower the pressure, the higher the conversion of n-hexane. This conforms to Le Chatelier's law, since the hydrocracking reaction results in an increase in the total moles.
- 3) For LPG production the hydrocracking of n-hexane should be operated at a high temperature. i.e. around 320 °C
- 4) For gasoline production the hydrocracking should be carried out at a moderate temperature, i.e. around 280 °C
- 5) The H-mordenite catalyst gave a higher n-hexane conversion as well as more LPG in the products than the H-Y catalyst. Therefore, the H-mordenite catalyst is

more suitable than H-Y catalyst to the production of LPG from n-hexane, and the suitable temperature was 320 °C or 340 °C.

6) For gasoline production, the H-Y catalyst is more suitable than the H-mordenite catalyst and the suitable temperature was 260 °C to 280 °C.

7) The H-mordenite gives 1-3 times higher n-hexane conversion than the H-Y catalyst in the hydrocracking of n-hexane.

5.2 FUTURE SUGGESTION

1) It would be interesting to extend the study to the hydrocracking of other hydrocarbons (not too long chain hydrocarbons), such as cyclohexane, heptanes and octanes to see the activity and selectivity of the catalysts.

2) Though the activity of the H-mordenite catalyst is higher, attempt should still be made to enhance its performance by adding such promoters as Pt, Pd, etc. on to it.