

## CHAPTER V

### CONCLUSIONS AND RECOMMENDATIONS

This thesis investigated the catalytic activity of Pt/KL and PtCe/KL prepared by CVD method for n-hexane aromatization reaction.

The results indicated that the method of preparation strongly affected not only on the morphology and location of Pt cluster on L-zeolite, but also on the catalytic activity of the catalyst for n-hexane aromatization reaction. The Pt/KL prepared by CVD method showed higher %Pt dispersion than Pt/KL prepared by IWI method. The addition of Ce helped dispersing Pt metal clusters on the L-zeolite.

For the reaction studies, Pt/KL prepared by CVD method exhibited higher catalytic activity for n-hexane aromatization, and resistance to Pt particle growth and coke formation than that prepared by IWI method. The concentration of sulfur affected the catalytic performance of Pt/KL such that catalysts were more deactivated with increasing sulfur concentration. Addition of Ce did not exhibit the enhancement of catalytic activities under sulfur-free condition but improved the catalytic performance of n-hexane aromatization under sulfur-containing feed at 500<sup>0</sup>C .

For further study, it is recommended that the morphology study of Pt clusters resulting from added Ce by EXAFS should be carried out to find the explanation for the effects of Ce on the catalytic activity of Pt/KL and the investigation of proper promoters that will increase sulfur tolerance.