



## CHAPTER V

### CONCLUSIONS AND RECOMMENDATIONS

#### 5.1 Conclusions

This thesis investigated the optimal regeneration conditions of Pt/KL catalysts prepared by vapor-phase impregnation (VPI) method for *n*-octane aromatization reaction.

The results indicated that the regeneration via coke oxidation in air was clearly a good regeneration treatment for *n*-octane aromatization over Pt/KL catalysts. For the catalytic activity measurement, it was found that the optimal regeneration conditions were regeneration temperature at 250°C, regeneration time of 0.5 h and air flow rate of 100 ml/min/g. This result was confirmed by the characterization of the catalysts using DRIFTS of adsorbed CO and TPO.

In addition, it was observed that temperature of regeneration is clearly the most critical parameter in regeneration process because it influences directly the morphology of Pt particles and also the activity and selectivity of the catalysts.

Furthermore, regeneration with oxychlorination treatment can give better Pt redispersion that corresponded to the catalytic performance of the catalysts.

#### 5.2 Recommendations

For further study, it is recommended that the determination of the optimal conditions for other interested catalysts for aromatization such as PtCe/KL. And the combination of regeneration via coke oxidation in air followed by an oxychlorination treatment should be carried out to find the comparison for the effect of regeneration condition toward the performance of the catalyst.