

CHAPTER VI

CONCLUSION AND RECOMENDATIONS

In this thesis, the Cu/Na-ZSM-5 and H-ZSM-5 catalysts were investigated their mechanism in selective catalytic reduction (SCR) of NO by propylene. The carbon deposited was used as a probe molecule to covered active site of the catalysts. The conclusion of this study can be summarized as follows:

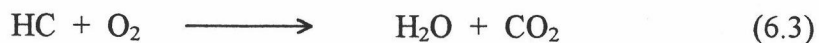
1. Cu sites are the sites for oxygen adsorption which enhance the activity. The first step of the reaction probably be the formation NO₂ as equation (6.1)



2. The reduction of NO₂, from the 1st step, located on the Brønsted acid sites.



3. The hydrocarbon combustion, which competed with the reduction of NO₂, mostly occurred on Lewis acid sites.



4. On Cu/Na-ZSM-5, we suggested that O₂ spillover from Cu-sites onto the acid sites to enhance the reaction (6.3) and hindered the formation of hard coke.

From this research, the recommendations for further study can be as follows:

1. Investigate the effect of coke at different reaction temperatures for more clues about the reaction mechanism.
2. Investigate the other catalysts such as Co/ZSM-5.