

## CHAPTER VI

### CONCLUSIONS AND RECOMMENDATIONS

#### 6.1 Conclusions

As discussed in chapter 5, it can be briefly concluded below.

##### 6.1.1 The Intermediate Formation

1.  $\text{NO}_2$  affect the large amount of intermediates, which are difficult to be removed by  $\text{O}_2$
2. The nature of intermediates depend on type of hydrocarbon and catalyst
3. The intermediate from hydrocarbon are occurred on the acid site
4. The same amount of carbon from intermediates occurred from  $\text{C}_3\text{H}_6 + \text{NO} + \text{O}_2$  and  $\text{C}_3\text{H}_6$  lead to the same amount of  $\text{C}_x\text{H}_y$  species.

##### 6.1.2 The Intermediate Removal

1. The intermediates removal by  $\text{NO}_2$  proceed at lower temperature than that by  $\text{O}_2$

#### 6.2 Recommendations for future studies.

From the previous conclusions, the following recommendations for future studies are proposed.

1. The mechanism should be studied with these techniques using other zeolite catalyst in nitrogen oxides reduction.
2. The mechanism should be studied with these techniques in nitrogen oxides reduction for zeolite catalyst with varying hydrocarbon as a reducing agent.
3. The mechanism should be studied at the different reaction temperature.