

CHAPTER VI

CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

The conclusions of this research are summarized as follows:

1. The catalytic activity of V-Mg-O/TiO₂ catalyst is high for the combustion of phthalic anhydride and maleic anhydride is higher than V₂O₅/TiO₂ catalyst.

2. For the combustion reaction, the oxidation activity of VMgOTi catalyst depends upon reactants.

3. For both phthalic anhydride and maleic anhydride combustion, magnesium plays the role as promoter.

4. The amount of vanadium and magnesium in the catalyst affects the catalytic activity for anhydride combustion.

5. 10V4MgOTi is the suitable catalyst for both phthalic anhydride and maleic anhydride combustion.

6. The catalytic activity of V-Mg-O/TiO₂ catalyst can more excellent oxidize the carboxyl group.

6.2 Recommendations for future studies

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

1. It is interesting to study the other metal oxide to find the best catalyst for anhydride combustion.

2. It is interesting to study the property of MgO on the other metals to improve anhydride combustion.

3. 10V4MgOTi catalyst is suitable to use in the catalytic combustion of phthalic anhydride and maleic anhydride. Therefore, it is interesting to further study the oxidation property of 10V4MgOTi catalyst with other anhydrides.