CHAPTER VI
CONCLUSIONS AND RECOMMENDATION

6.1 Conclusions

The conclusions of the present research are the following:

1. The catalytic activity of Co-Mg-O catalysts are high for the oxidation of hydrocarbon and CO.

2. For the oxidation reaction, the oxidation property of Co-Mg-O catalyst depends upon the type of reactant.

3. For 1-propanol oxidation, at low reaction temperature and low 1-propanol conversion Co-Mg-O catalyst behaves as a selective catalyst. While at high reaction temperature it plays role as a combustion catalyst.

4. 4Co-Mg-O catalyst acts as a combustion catalyst for propene and CO oxidation.

5. The cobalt composition in the catalyst affects the catalytic activity and selectivity for propane oxidation.

6. 8Co-Mg-O is the suitable catalyst for the propane oxidation because it provides the maximum olefin selectivity ca. 40% and the maximum olefin yield 30% at 500°C.

6.2 Recommendations for future studies

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

1. For the propane oxidation, it will be interesting to study the effect of the other basic metal such as Li, Na and K loading on the oxidation property of the Co-Mg-O catalyst.

2. It will be interesting to examine the oxidation property of the Co-Mg-O catalyst on other heavier hydrocarbon. One possible uses of this catalyst system may be catalytic cracking of large hydrocarbons at low temperature.