CHAPTER VI
CONCLUSIONS AND RECOMMENDATIONS

Beta zeolite is a potential catalyst for the production of cumene from isopropanol and benzene. The results obtained lead to the following conclusions:

1. The major by-product (DIPB) can be considered useful, because it can be recovered by transalkylation with benzene to cumene.
2. The cumene formation requires higher strong acid sites.
3. The cumene selectivity is much higher for Beta zeolite compared to ZSM-5 and Y zeolite.
4. The stronger adsorption of propylene on the active sites led to faster deactivation of the catalyst when propylene was used as an alkylating agent.
5. The optimum reaction conditions for the selective formation of cumene from benzene and isopropanol at atmospheric pressure are: temperature 200°C, GHSV 3000 h^{-1} and TOS 40 min.

The recommendations for further study are as follows:

1. Study the effect of reactant mole ratio between benzene and isopropanol.
2. Study the type of metal loaded on catalyst for enhances the catalytic performance.