

## CHAPTER V

### CONCLUSIONS & RECOMMENDATIONS

#### 5.1 CONCLUSIONS

In the first part, the impact of various MCM-41 supported-dMMAO on the catalytic activities during copolymerization of ethylene/1-octene was investigated. It was found that the bimodal MCM-41-supported zirconocene/dMMAO showed the enhancement of activity during copolymerization of ethylene/1-octene about 1.5 times compared with that using the unimodal one. It was proven that the higher activity could be attributed to lesser interaction between the support and cocatalyst. Besides, the bimodal MCM-41 support apparently gave broader MWD copolymer due to more different catalytic sites present. However, both unimodal and bimodal MCM-41 supports trended to produce the random copolymers with a little probability for the block of OO.

In the second part, the impact of comonomers employed under corresponding condition as mentioned in the first part was further investigated. It was found that base on polymerization activities, it was found that

- For EH, activities of Homo > UMD > BMD1 > BMD2
- For EO, activities of Homo > BMD1 > BMD2 > UMD
- For ED, activities of BMD1  $\approx$  BMD2 > Homo  $\approx$  UMD

The resulted activities may be attributed to the size of comonomers and pores.

#### 5.2 RECOMMENDATIONS

- Other bimodal supports should be further investigated.
- The modification of supports should be studied.
- Interaction between the support and cocatalyst under in situ condition should be further determined.