CHAPTER VI

CONCLUSIONS & RECOMMENDATION

6.1 CONCLUSIONS

From the present investigation, which involves the propylene polymerization by classical and modified Ziegler-Natta catalyst, a number of conclusions may be summarized as follows :

1. The suitable condition (based on the scope of this work) that gives the good results in the studied $TiCl_4$-$AlEt_3$ system in hexane are the conditions of Al/Ti mole ratio of 2, $TiCl_4$ concentration of 8.936 mmol/liter, molar ratio of propylene/hydrogen of 73.5:24.5 (3:1), and temperature of 90 ^oC.

2. Catalytic behaviors of Ziegler-Natta catalyst are affected by third component . It affects the activity of catalyst, isotacticity and morphology of the polymer product. This study found that trimethylethoxysilane (TMES) was suitable for $TiCl_4/AlEt_3$ catalyst system to improve isotacticity of polypropylene product without causing lower activity. The proper amount of TMES/Ti mol ratio of 0.05 was recommended (based on the scope of this work).

6.2 RECOMMENDATION

Effects of external electron donor can be clearfied by varying the size of alkyl in alkoxy silane group. Alkyl in alkoxy silane group may affect to the catalyst system. Since alkyl can transfer the electron to oxygen atom.