

## CHAPTER 6

### CONCLUSIONS AND RECOMMENDATIONS

In this study the following conclusions drawn :

- 1) Mg exhibited much higher activity than Mn in the catalyst system of Mg or Mn/Al/Li/M Where M is the lanthanide promoters.
- 2) Pr was the most effective promoter among the lanthanides studied in this research, i.e. Ce, Pr and Sm
- 3) Mg/Al/Li/0.1 Pr was the optimum catalyst system for the oxidative coupling of methane. as high as 45.48% of methane conversion and 30.38% of ethylene were obtained at 700 °C, 2000 h<sup>-1</sup> with CH<sub>4</sub>/O<sub>2</sub> ratio of 1.
- 4) Al caused the increase of surface area of the catalyst system which is helpful for the catalyst activity.

The following further researches were recommended :

- 1) Study the catalyst life of the optimum catalyst system.
- 2) Study the regeneration of catalyst after its deactivation.
- 3) Study the catalyst stability to be used several times through cycles of reaction regeneration.