CHAPTER VI

CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

The conclusions emerged from this research are the following :

1. Alkali metal loading has effects on the surface area of 28V-Mg-O. The surface area decreases with increasing content of alkali metal. The order of decreasing surface area of catalysts are as follows : Li > Na > K.

2. The active species on 28V-Mg-O surface are VO_3 and V-O-V . Alkali metal introduced into 28V-Mg-O can form V-O-M and/or M-O-M structure on the catalyst surface apart from V-O-V species, where M is alkali.

3. The results of TGA and TPD confirm the presence of some moisture covered on the catalyst surface and also some O_2 which is releaseable from the catalyst surface.

4. From CO_2 adsorption experiment, alkali metal loading can increase the basicity of 28V-Mg-O. The more the amount of alkali , the more the basicity of catalyst.The order of alkali metal loading which increases the basicity of catalyst is follows : K > Na > Li. ,

5. Alkali metal loading on 28V-Mg-O increases the propene selectivity with decreasing the propane conversion.

6. The catalytic performance of V-Mg-O catalyst pretreated in non-oxidizing atmosphere is better than that of catalyst pretreated in oxidizing atmosphere.

6.2 Recommendations for future studies

From the above conclusions, the following recommendations for future studies can be proposed as below.

1. It will be interesting to study the effect of the other alkali metals such as Rb, Cs and Sr loading on V-Mg-O catalyst.

2. From the effect of alkali loading on the V-Mg-O system, it will be interesting to study this effect on the other basicity systems such as vanadium molybdate for finding the proper catalyst for the reaction.