CHAPTER V
CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

Effect of catalyst preparation of Ba/SiO_2 and W/SiO_2 on the oxidative bromination of methane is studied in this work. The BET surface area of catalyst indicates that the specific surface area of sol-gel catalysts is higher than impregnation catalyst and the specific surface area of W/SiO_2 is lower than Ba/SiO_2 catalyst for the similar catalyst preparation method. The XRD pattern shows no peak of metal oxide in sol-gel catalyst. On the other hand, the impregnated catalyst gives the sharp peaks of metal oxide. For the OBM reaction, it was found that the Ba/SiO_2 sol-gel and W/SiO_2 sol-gel catalysts exhibit a better performance than the Ba/SiO_2 impregnated and W/SiO_2 impregnated catalysts. The increasing of Ba loading on Ba/SiO_2 causes methyl bromide yield to be slightly decreased, while increasing of W loading on W/SiO_2 provides methyl bromide yield to be slightly increased.

5.2 Recommendations

This work studied effect of catalyst preparation between incipient wetness impregnation and sol-gel method, further study of this reaction will be studied. For example, new catalyst selection and reaction condition optimization should be more investigated in order to reach the maximum yield of methyl bromide.