สำนักงานวิทยทรัพยากร
จุฬาลงกรณ์มหาวิทยาลัย

CHAPTER V
CONCLUSIONS AND RECOMMENDATIONS

In this work, the mixed matrix membranes, ZSM5–polybenzoxazine, were successfully synthesized from bisphenol–A, formaldehyde and 1,6–hexadiamine. The membrane separation performance was evaluated based on the gas permeability and CO_2/CH_4 selectivity. 1 wt.% of zeolite loading showed the highest CO_2 and CH_4 permeability and great CO_2/CH_4 selectivity when compared with those with higher % of ZSM–5 loading content. Increasing the zeolite loading did not significantly improve neither gas permeability nor CO_2/CH_4 selectivity since molecular sieving mechanism of ZSM–5 plays a minor role in CO_2/CH_4 separation.

By considering the effects of filler and interfacial adhesion between the filler and the polymer chains, the future work should focus on how to design high separation performance MMMs, which was suggested to improves by either thermal heat treatment of membrane or blending with another filler to improve the gas separation efficiency.