

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

Based on the experimental result, methane adsorption capacity of activated carbon is strongly influenced by surface area and pore diameter of adsorbent. Acid and base treatment can increase and also decrease surface area of activated carbon. Acid treatment can remove mineral substance from sample which led to increasing in surface area and methane adsorption capacity. However, it can further block or decompose activated carbon pore structure. In base treatment, metal and mineral substance can be eliminated, but KOH can remain on pore and cause a pore blocking also. With optimum pore size 1.1nm, The bigger pore size diameter of powdered activated carbon derived from coconut shell led to less amount of methane adsorbed than that derived from the same raw material with smaller pore size diameter. Almost the same amount of methane adsorption can be observed from liquid hydrocarbon treating sample. 5% decane mixing does not show a significant effect on methane adsorption.

5.2 Recommendations

According to addition of carbon dioxide into natural gas for adjusting the heating value, the effect of carbon dioxide on methane adsorption should be studied.