CHAPTER V
CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

In this work, the measurement of MMP has been done by the pressure decay technique. The effects of molecular weight and temperature on MMP were studied. The pressure decay curve was the exponential function. The initial pressure was rapidly decrease until it reached the equilibrium. Increase of oil molecular weight increased the equilibrium time which opposite to the increase of temperature which it decreased the equilibrium time. The MMP point is the maximum of the plot between total pressure drop at the first region which obtain from pressure decay curve and the initial pressure. The MMP of n-decane as the oil reference at 20 °C from the pressure decay method was very good agreement (%AD = 0.12%) with that obtained by the MRI technique. The increase of oil molecular weight increased the MMP of the system which was the linear function with R^2 0.9681, and increase of temperature increased the MMP of the systems. The results of MMP from the pressure decay technique was very good agreement with the Li *et al.* correlation. For crude oil API 62.1, n-pentane, n-heptane at 30 °C and n-heptane at 40 °C, there were the %AD around 1.35%, 5.88%, 4.84% and 6.02%, respectively, and the %AD of n-decane at 20 °C was 20.48%.

5.2 Recommendations

- To confirm the MMP of n-pentane, n-heptane and crude oil, it requires other experiment method to measure the MMP and comparing with the results from this experiment.
- To get the correlation of the effect of oil molecular weight, the experiment should be done in the molecular weight range of 70 to 150 for light oil.
- To get the correlation of the effect of temperature, the experiment should be done in the temperature varies from 20 to 40 °C.
- Li *et al.* correlation should be improved for the calculation of pure liquid hydrocarbon and low temperature.
- The next experiment should be use impure carbon dioxide injection, because the cost of pure carbon dioxide was higher than impure gas.