

## CHAPTER V

### CONCLUSION AND RECOMMENDATION

#### 5.1 Conclusion

In this study, various precipitants and precipitant concentrations have been used to investigate asphaltene aggregation and deposition. As has been demonstrated in the previous section, for a fixed volume fraction of precipitant, the collision efficiency decreases with the higher carbon number of precipitants and decreasing precipitant concentration resulted in lower collision efficiency. In addition, the correlation between collision efficiency and solubility parameter was validated. It has also been discussed that the slopes of all pressure drop trajectory are approximately the same indicating that the deposition behavior of asphaltenes seems to be almost identical after pressure drop was normalized using  $r$ ,  $\mu$ ,  $F$ , and,  $\Phi_{oil}$  regardless of the different in collision efficiency for different precipitants and precipitant concentrations

#### 5.2 Recommendation

##### 5.2.1 Asphaltene Aggregation

The correlation between collision efficiency and solubility parameter should further be investigated by performing centrifugation experiments at other precipitants and precipitation concentrations to obtain the collision efficiency. In addition, onset experiments with other precipitants and at different precipitation concentrations should be performed to obtain the detection time. These results will be used to determine the asphaltene solubility parameter. Moreover, other crude oils and temperature should be performed.

##### 5.2.2 Asphaltene Deposition

Deposition at 30 vol. % octane should be performed in order to compare pressure drop trajectory with other precipitants. SEM images of the capillary inlet at 30 vol. % octane should be taken to investigate the mixing quality.