

## **CHAPTER V**

### **CONCLUSIONS AND RECOMMENDATION**

#### **CONCLUSIONS**

Subsaturated surfactants can effectively decrease the surface tension of the CDS system, whereas NaC<sub>8</sub> can act as the most effective wetting agent followed by NPE but SDeS can also be as effective as NaC<sub>8</sub> at low concentration at about 10 mM. In this case, at low concentration, the adsorption of SDeS occurred due to the ion exchange interaction led to the abrupt decrease of surface tension but suddenly increased due to the increasing amount of SDeS molecules leading to aggregate to form micelle at CMC point having surface tension similar to pure subsaturated SDeS. CDeS formation was limited prior to the mole ratio of the ion exchange reaction. Moreover, SDeS effectively dissolves CDS solid. In general, lower surface tension and contact angle corresponds to physico-chemical properties of the solution including length of alkyl chains, ionic strength, and counter ions affinity. The differences between the molecular structure of each surfactant and length of the hydrophobic parts resulted in the different interaction between the surfaces of the substrate.

#### **RECOMMENDATION**

It is highly suggested to study for future work the synergism of saturated CDS and subsaturated SDeS phenomenon including the solubility of solid CDS in the presence of shorter alkyl sulfate.