CHAPTER V
CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

The DDAO mixed with chelant (Na_2EDTA or Na_4GLDA) at pH 11 can further increase the equilibrium solubility for both soap scums synthesized from stearic acid and commercial soap than in pure water pH 4. Soap scums synthesized from stearic acid in the Na_2EDTA/DDAO and Na_4GLDA/DDAO system seem to have lower equilibrium solubility than synthesized from commercial soap scums. However, magnesium soap scum from both stearic acid and commercial soap still has low solubility compare to calcium soap scum. A comparison between Na_4GLDA and Na_2EDTA systems indicates that both chelating agents can competitive in pure and mixed soap scum. So, Na_4GLDA can used to replace Na_2EDTA. For the dissolution rate of soap scum, calcium soap scum synthesized from stearic acid and commercial soap in natural hard water is no significant different in the Na_2EDTA/DDAO and Na_4GLDA/DDAO system and also the same trend for magnesium soap scum. In addition, the dissolution rate of the calcium mixed soap scum is higher than that of magnesium mixed soap scum.

5.2 Recommendations

The cost of DDAO surfactant systems is so expensive because of it purity. Therefore, it should be replaced by other amphoteric surfactants or a mixed surfactant system of anionic and cationic surfactant.