



CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

Solution pH affected the equilibrium solubility and dissolution rate of calcium soap scum. The highest equilibrium solubility and dissolution rate of calcium soap scum in DDAO and DDAO with NaCl systems were found at low solution pH while the highest equilibrium solubility of calcium soap scum in DDAO with Na₂EDTA system was found at high solution pH. However, when NaCl and Na₂EDTA present in DDAO system, the solution pH had insignificant effect on equilibrium solubility and dissolution rate of calcium soap scum.

The added NaCl had insignificant effect on equilibrium solubility of soap scum. On the other hand, added NaCl increased the dissolution rate of calcium soap scum especially at high solution pH and the 0.01M NaCl was found as an optimum concentration. Moreover, at high solution pH, the equilibrium solubility and dissolution rate of calcium soap scum decreased when NaCl was added in DDAO with Na₂EDTA system.

5.2 Recommendations

Since the highest equilibrium solubility and dissolution rate of soap scum was found in DDAO with Na₂EDTA system but Na₂EDTA is non-biodegradable material. Therefore, another type of chelant should be selected for replacing the Na₂EDTA. Moreover, the price of DDAO is quite expensive because of high purity grade of DDAO. So, the commercial grade of DDAO or other surfactants should be investigated.