



CHAPTER V

CONCLUSION AND RECOMMENDATIONS

5.1 Conclusions

The objective of this work studied the effects of oil loading fabric weight, and surfactant adsorption on the detergency performance of oily soil removal. A mixed surfactant system of 0.1 wt.% branched alcohol propoxylate sulfate sodium salt (Alfoterra 145-3PO), an extended anionic surfactant, 5 wt.% secondary alcohol ethoxylate (Tergitol 15-S-5), a nonionic surfactant, and in presence 5% salinity were used to form microemulsions with motor oil.

The results showed that oil loading and the fabric loading slightly affected the oil removal efficiency. In the adsorption experiment of mixed surfactant in the presence of 5% salinity on a polyester/cotton blend reached to the plateau region above the CMC at 250 μM . The phenomena of oil detachment from the compressed fabric surface temperature range of 30-50°C and 0-0.5 % active of mixed surfactant were investigated, it found that surfactant concentration can enhance oil detachment time, the equilibrium contact angle value and percentage of oil detachment. And the temperature can decreased viscosity and increased mobility of oil but can not improve efficiency of oil detachment time, % oil removal and % oil detachment. Moreover, the surfactant adsorption and oil detachment results, the mechanism of detergency process for oily soil removal consists of there sequential steps: surfactant adsorption, oil detachment and oil solubilization.