CHAPTER V
CONCLUSIONS AND RECOMMENDATIONS

Formation of ultrathin poly(methyl methacrylate) film on polyester fabric by surfactant-aided surface polymerization has been successfully carried out in this work. The optimum conditions are 1.5 mM DBSA, 0.15 M NaCl, 1:8 DBSA:MMA ratio, 1:10 AIBN:MMA ratio and polymerization carried out at 75°C for 24 hours. Hydrophilicity of the hydrolyzed PMMA-coated fabric as measured by the water contact angle was found to depend on the hydrolysis time and temperature. SEM micrographs confirmed that poly(methyl methacrylate) thin film was successfully formed on polyester fabric. After hydrolysis by 10 M H_2SO_4 at 80°C for 5 hours, the contact angle of PMMA-coated polyester fabric decreased from 117.3° to 0° and moisture regain of the PMMA-coated polyester fabric showed a significant increase from 0.55% to 0.87%.

Recommendations for future work

Surface analysis using IR and XPS, thermal analysis using DSC and TGA, and stability test of the coating film should be carried out to study more completely the properties of treated fabrics. In addition, washing resistance of the treated fabric can be the subject of further investigation.