

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

Formation of poly(acrylic acid) film on polyester fabric by admicellar polymerization has been successfully carried out in this work. The optimum conditions for carried out admicellar polymerization of acrylic acid monomer on polyester fabric are 1.2 mM DBSA, 0.15 M NaCl, 1:15 DBSA:AA ratio, 1:15 AIBN:AA ratio at 75°C for 24 hours. FT-IR spectrum and SEM micrographs confirmed that poly (acrylic acid) thin film was successfully formed on the treated polyester fabric. Hydrophilicity of the PAA-coated fabric as measured by contact angle was found to decrease when the monomer increased. Flexural test showed that treated polyester fabric reinforced concrete improved the elastic load and flexural deformation by 400%-585% and 175%-250%. The best condition for modifying the fabric was found to be 1.2 mM DSBA, 0.15 M NaCl, 1:15 DBSA: AA ratio, 1:15 AIBN: AA ratio.

Recommendations for future work

Surface analysis using AFM, 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.