

Acrylic acid (AA) and acrylonitrile (AN) were graft polymerized onto cellulose fluff pulp using ceric ammonium nitrate as initiator. The resulting copolymers were saponified with dilute sodium hydroxide and characterized by FT-IR, SEM and TGA. The potential value of the modified cellulose was assessed through measurements of absorbency properties. A fibre-hydrogel was prepared by an addition of a bifunctional monomer, ethyleneglycol dimethacrylate (EDMA) used for grafting. In second approach, biocide cellulose carbamate was prepared by impregnating the fibres in aqueous thiourea solution and subsequent grafting with acrylonitrile. Antimicrobial activity of the treated cellulose sample was studied against *Escherichia coli*, *Pseudomonas aeruginosa* and *Bacillus subtilis* according to AATCC test method 100–1999. The results show that the treated fibre gives higher antimicrobial activity. The strong antimicrobial functions achieved on modified fibres, proved that the synthesized biomaterial was effective, very simple and practical to the textile finishing industry