



Improvement of the Graft and Printability of Linen Fabric by Glow Discharge Plasma in Atmospheric Air

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Abstract: Low temperature plasma can effectively modify the surface characteristics of linen fabrics, such as wettability, printability and crease recovery angle. In this paper, glow discharge plasma in air is applied to modify linen surface reactivity and render it printable with other classes of dyes. Bulk properties, surface morphology characteristics and printing properties were investigated. Graft co-polymerization of acrylic acid (AAc) onto the linen surface is also induced by glow discharge in air and can effectively improve the printability properties. The AAc grafted on linen surface was characterized by Scanning Electron Microscopy (SEM) and Fourier Transform Infrared (FTIR). The effects of plasma exposure time, discharge power levels as well as grafting solution concentration, temperature and time on the grafting degree were studied and discussed.

Keywords: *Glow discharge, Linen, Acrylic acid, Grafting.*

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