

Ultrafine porous cellulose triacetate fiber by electrospinning under methylene chloride/acetone solvent system

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Ultrafine porous cellulose triacetate(CTA) fiber were prepared by electrospinning with methylene chloride(MC) and a mixed solvent of methylene chloride/acetone. The solvent composition ratios of methylene chloride/acetone in cellulose triacetate(CTA) solution were proved to be key parameter to affect the fiber surface structure due to the phase separation speeds of the solvents during electrospinning. The concentration of the CTA solution is used in 5 wt%, and the solvent mixing ratios of methylene chloride/acetone is changed from 100:0 to 60:40. All electrospinning condition was performed by flow rate 20 $\mu\text{l}/\text{min}$, applied voltage 15 kV and tip-to-distance(TCD) 10 cm. The properties of CTA spinning solution were confirmed from viscosity, conductivity and surface tension of spinning solution. The CTA ultrafine fiber were characterized by field emissions scanning electron microscopy(FE-SEM).