

The effect of relative humidity and temperature under MC/EtOH solvent system to preparation of electrospun polystyrene fiber

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Polystyrene(PS) dissolved in the binary solvent of methylene chloride(MC) and ethanol was electrospun to prepared fibers un various relative humidity and temperature to variety their effects on the structure. The surface morphology and the pore formation of electrospun fiber have been studied by many variable that are involved in different polymer concentration and solvent mixing ratios. Another major factor affecting fiber morphology and size distribution were the relative humidity and temperature. The relative humidity, temperature and solvent evaporation make pores in the fiber surface. When the 30, 40% relative humidity under MC/EtOH(90/10, v/v), pore are not formed on the surface. However, as the relative humidity increases to 60%, many pores are formed on the fiber surface. But, when the condition MC/EtOH(80/20), the surface of fiber observed few pore. The morphology of electrospun fiber affected by temperature, relative humidity affected more than temperature during electrospinning process.