Preparation of Carbon Nanofiber Using Chlorinated PVC/Isotropic Pitch Mixed Solutions by Electrospinning

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ABSTRACT

Homogeneous and thin carbon nanofiber was successfully prepared using 30 wt% of DMF with 70 wt% of THF solution of chlorinated polyvinylchloride (CPVC) and isotropic pitch (IP) by the traditional electrospinning method. The effect of the mixing ratios of CPVC/IP on the fiber diameter and oxidation property were closely examined. CPVC/IP (30 wt% of CPVC and 70 wt% of IP) nanofiber was successfully infusiblized by the oxidation up to 260^{o}C under oxygen-rich atmosphere and continuously carbonized up to 800^{o}C under inert gas condition. The diameters of CPVC/IP derived carbon nanofibers were very homogeneous with 100-300 nm, which were dependent on the mixing ratios of CPVC/IP. The carbonization yield of the obtained carbon nanofibers showed over 53 wt%.