Fabrication and characterization of Poly (vinyl alcohol)/multi-walled carbon nanotube fibers by wet spinning

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Carbon nanotubes (CNTs) have the great potential to fabricate fibers with excellent properties, such as high aspect ratio, high tensile strength and stiffness, and low density. We obtained multi-walled carbon nanotube (MWCNT) fibers using poly vinyl alcohol (PVA) coagulation spinning under aligning shear stress. A PVA coagulation spinning consists of dispersing MWCNTs in surfactant solutions and then recondensing the nanotubes in the stream of a PVA soultion. Then, structural features and mechanical performances of MWCNT/PVA composite fibers are investigated as a function of the aligning shear stress of the PVA coagulation spinning process.