

Preparation and Characterization of PVA/SWCNT/GO Nanocomposites

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In this work, we studied on improving gas barrier and transmittance of nanocomposites. Poly (vinyl alcohol)/graphite oxide(GO)/single-wall carbon nanotube(SWCNT) nanocomposites were prepared with various GO/SWCNT concentrations with solvent mixing method and characterized by X-ray diffraction(XRD). Light transmittance of nanocomposites was measured with UV-vis at 550nm. Gas barrier of nanocomposites was measured with Illinois Instrument Model 8001. The differential scanning calorimetry(DSC) pattern of samples were measured with DSC at a heating rate of 10°C/min. XRD experiments were performed directly on the hybrid samples with Cu irradiation at the scanning rate of 0.02/s in the 2 θ range of 2-40. Morphology of nanocomposites was characterized with Scanning electron microscopy.