

Abstract Submitted  
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**PEO-MWCNTs Nanocomposites: The Effect of the Nature of Solvent on the Morphology and Physical Properties of Nanocomposites** ALFONSO SALINAS, CHARLES CARTWRIGHT, KEVIN L. NEWCOMBE, MIRCEA CHIPARA, IBRAHIM ELAMIN, JAMES HINTHORNE, DORINA M. CHIPARA, KAREN LOZANO, The University of Texas Pan American — PEO nanocomposites have been obtained by dissolving the polymer within selected solvents (water, ethanol, toluene, and chloroform), addition of the nanofiller (Multi-walled Carbon Nanotubes: MWCNTs), dispersion of the as obtained mixture by stirring at 500 rotation per minute for 1 h followed by a sonication for 30 minutes using a high power sonicator (500 W), and solvent evaporation in an oven at 110 °C, for 10 h. Nanocomposites containing 0 to 40 % wt. MWCNTs have been obtained and investigated. Scanning Electron Microscopy was used to assess the dispersion of MWCNTs within the polymeric matrix. Wide Angle X-Ray Scattering, Raman, FTIR, and UV-VIS were used to characterize the crystalline structure and molecular/atomic motions in the as obtained samples. Differential Scanning Calorimetry was used to estimate the glass, crystallization, and melting temperatures. Thermal stability will be questioned by thermogravimetric analysis. The effect of the nature of the solvent on the dispersion of nanotubes and on the physical properties of the as obtained nanocomposites will be analyzed in detail.

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