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PEO-C60 NanocompositesComposites ROBERTO RANGEL, DORINA CHIPARA, HILARIO CORTEZ, EDGAR MUNOZ, MIRCEA CHIPARA, University of Texas Rio Grande Valley — The effect of the nature of dispersion fluid (solvent or non-solvent) on the physical properties and structure of nanocomposites obtained by dispersing C60 within a high molecular weight polyethylene oxide (PEO)-was investigated in detail by Raman spectroscopy, Wide Angle X-Ray Scattering, Differential Scanning Calorimetry, and thermogravimetric analysis. Optical and electron microscopy were used to assess the dispersion of the nanofiller. The fluid component was selected to be a solvent for the polymeric matrix. However, the fluids were selected to be non-solvent (water) or solvents (chlorophorm, toluene) for the nanofiller. In all cases, the mixtures or solutions fluid +nanofiller+polymer were stirred 1 hour, sonicated 30 minutes, and then left in an oven at 110^{o}C for 12 h to fully remove the solvent. The as obtained solid nanocomposites were further tested. TGA has been used to confirm solvent evaporation. The study aims at a better understanding of the role of the nanofiller solubility in the dispersion of nanomaterials within polymeric matrices.

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