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PVC-OH Functionalized SWCNT Nanocomposites ANDRES SALGADO, ROBERT JONES, SAMANTHA RAMIREZ, IBRAHIM ELAMIN, JAMES HINTHORNE, MIRCEA CHIPARA, University of Texas Rio Grande Valley — Nanocomposites of polyvinylchloride loaded with various amounts of OH functionalized Single Walled Carbon Nanotubes (SWCNT-OH) have been obtained by melt mixing using a Haake Rheomixer. The polymeric matrix has been loaded by various amount of SWCNT-OH ranging between 0 and 15 % wt. The as obtained nanocomposites have been measured by Raman spectroscopy using a InVia Renishaw spectrometer. The Raman lines have been deconvoluted into a superposition of extended Breit-Wigner-Fano line shapes. The effect of nanofiller concentration on the stress transfer from the polymeric matrix to SWCNTs has been analyzed and the Radial Breathing Mode was investigated. Differential Scanning Calorimetry revealed modest shifts of the melting and crystallization temperatures upon loading with SWCNT-OH. Additional information has been obtained by X-Ray measurements. The as obtained nanocomposites have not a very good thermal stability due to the thermally induced dehydrochlorination process. The thermogravimetric data are analyzed in detail and related to Raman results. Preliminary data on the thermal stability of these nanocomposites are reported.

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