

Abstract Submitted  
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**Raman and Wide Angle X-Ray Studies on Polystyrene-Block Polyisoprene-Block Polystyrene - Graphene Nanocomposites** DORINA CHIPARA, OSCAR M. GUERRERO, ALEJANDRA GONZALEZ, BRIAN YUST, IBRAHIM ELAMIN, JAMES HINTHORNE, MIRCEA CHIPARA, The University of Texas Pan American — Nanocomposites have been obtained by loading a block copolymer Polystyrene-Block Polyisoprene-Block Polystyrene (PS-bPI-bPS), containing 17% styrene (purchased from Sigma Aldrich) with various amounts of graphene nano platelets (HD Plas Grade 4), purchased from Cheap Tubes Inc., through the solution path: PS-bPI-bPS was dissolved within cyclohexane, then nanofiller was added and the mixture was sonicated for 1 h. The high power sonication (500 mW) improved the dispersion of the filler within the polymeric matrix. The homogenized solution was poured on glass slides covered by aluminum foil and left to evaporate the solvent. A final thermal treatment of the as obtained nanocomposites at 75 °C, has been performed overnight, in an oven. Nanocomposites containing various weight fraction of fillers ranging between 0% and 40% have been obtained. The as obtained films have been investigated by Wide Angle X-Ray Scattering, using a Bruker Discovery 8 spectrometer, FTIR (Bruker Tensor 27), UV-Vis, and Raman spectroscopy, (using a Bruker Senterra, confocal Raman microscope operating at 785 nm). The dependence of these spectra originating from the polymeric matrix and from the filler on the loading with graphene is discussed.

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