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Dynamics and morphology of poly(2-vinylpyridine-co-styrene)/multiwalled carbon nanotube composites

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Dielectric properties and morphology of nanocomposites based on poly(2-vinylpyridine-co-styrene) (P2V-S) as a matrix and multiwall carbon nanotubes (MWCNTs) as nanofillers are investigated. Nanotube-polymer interactions are evaluated by Raman and Fourier Transform Infrared Spectroscopy (FTIR). The molecular dynamics is investigated in the wide frequency (10²-10⁶ Hz) and temperature range by using of dielectric spectroscopy. The impact of the size and the volume fraction of the carbon nanoadditive on molecular mobility is observed. The dispersion and distribution of carbon nanostructures in the polymer is studied by combination of Scanning Electron Microscopy (SEM) and High Resolution Transmission Electron Microscopy (HRTEM).

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