

Features of anelastic and elastic, adsorption characteristics of nanocomposites of multiwalled carbon nanotubes and polyamide, polyethylene, polyvinyl chloride, porous polystyrene

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Acoustic emission (AE) allow to receive the additional information about the process of microcracks. Poisson coefficient μ is equal to ratio of relative transversal compression ϵ_{\perp} to relative longitudinal lengthening ϵ_{\parallel} . Complex elastic module of polyamide $(\text{NH}(\text{CH}_2)_5\text{CO})_n$, polyethylene $(\text{C}_2\text{H}_4)_n$, polyvinyl chloride $(\text{C}_2\text{H}_3\text{Cl})_n$, porous polystyrene C_8H_8 nanocomposite E^* is equal to the sum of dynamical elastic module $E' = \rho V^2 \lambda$ and loss module $E'' = E' \delta$ [1,2].

The increase of the nano composite crystalline degree at growth of multiwalled carbon nanotubes concentration filling with the nanotubes of matrix results in the decline of content of well-organized phase.

As the result of the mechanical study the presence of the strong effect between low-density polyethylene $(\text{C}_2\text{H}_4)_n$, polyvinyl chloride $(\text{C}_2\text{H}_3\text{Cl})_n$ and multiwalled carbon nanotubes was confirmed.

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Topics

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