

## 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  $\mu$  is equal to ratio of relative transversal compression  $\epsilon_{\perp}$  to relative longitudinal lengthening  $\epsilon_{\parallel}$ . 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  $\text{C}_8\text{H}_8$  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

**Primary author:** Ms DENIS, Lada (Taras Shevchenko National University of Kyiv)

**Co-authors:** Dr ONANKO, Anatoliy (Taras Shevchenko National University of Kyiv); Dr CHARNIY, Dmitro (Taras Shevchenko National University of Kyiv); Prof. KULISH, Mykola (Taras Shevchenko National University of Kyiv); Prof. DMYTRENKO, Oksana (Taras Shevchenko National University of Kyiv); Dr PAVLENKO, Olena (Taras Shevchenko National University of Kyiv); Prof. PINCHUK-RUGAL, Tatiana (Taras Shevchenko National University of Kyiv); Mr ONANKO, Yuriy (Taras Shevchenko National University of Kyiv)

**Presenter:** Ms DENIS, Lada (Taras Shevchenko National University of Kyiv)

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