

Mechanical Interactions in Polymeric Materials with Carbon Nanotubes: a Brief Review

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Abstract. This short review summarizes mechanical interactions occurring in polymer with carbon nanotubes. The work contains a detailed discussion of methods for improving the mechanical characteristics of polymer composites with carbon nanotubes, for which both experimental and computational work in this area are presented. The paper discusses in detail such methods of improving the connection between carbon nanotubes and the polymer as functionalization (covalent and non-covalent), enhancement by embedded nanoparticles and structural modification of the matrix. The review focuses on the molecular dynamics method as one of the promising methods for studying mechanical interactions in polymer composites with carbon nanotubes.

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