DISPERSION OF CARBON NANOSTRUCTURES IN POLYMER MATRICES - A NEW ROUTE TO HYBRID NANOCOMPOSITES

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Abstract
Dispersion of carbon nanostructures in polymer matrices – A new route to hybrid nanocomposites. Organic derivatives of graphene dots, carbon nanotubes or graphene nanosheets can be further modified using a plethora of organic reactions. This post functionalisation offers a great variety of 0D, 1D, 2D organically modified nanomaterials that can be easily transformed from hydrophobic to hydrophilic and vice versa by a simple counter ion exchange. The control of the dispersibility of carbon nanomaterials offers great advantages in their use in several applications. Among else hydrophilic graphene or carbon nanotube derivatives can be homogenously dispersed in analogous polymers such as polyvinyl alcohol, while organophilic derivatives analogous in poly-ethylene vinyl acetate or polyurethane.

Keywords: carbon nanostructures, nanocomposites, graphene, carbon nanotubes, dispersibility

ACKNOWLEDGMENT
This research has been co-financed by the European Union (European Social Fund – ESF) and Greek national funds through the Operational Program "Education and Lifelong Learning" of the National Strategic Reference Framework (NSRF) - Research Funding Program: THALES. Investing in knowledge society through the European Social Fund (377278).

Author did not supply full text of the paper.