



materials



Special Issue Reprint

Carbon Nanotube-Based Nanocomposites

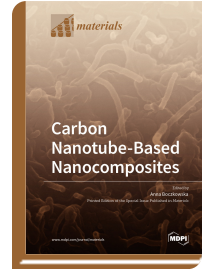
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The Special issue, “Carbon nanotube-based nanocomposites”, provides an extensive overview of current trends in the area of polymer matrix nanocomposites based on carbon nanotubes (CNTs) from the papers contributed by internationally recognized specialists. It brings together 7 papers that deal with the various aspects of processing, as well as experimental and analytical approaches to carbon nanotube-based nanocomposites fabrication, characterization and application. Each paper demonstrates how enhancements in materials, processes and characterization techniques can improve performance in the field of engineering. The Special issue gives a unique opportunity to discover the latest research on carbon nanotube-based nanocomposites from different laboratories. Numerous references are given at the end of each paper to enable the reader to explore the topics covered in greater detail. Most of the papers describe the improvement of electrical and mechanical properties of polymer-based nanocomposites due to the application of CNTs, independently on the matrix used: (ethylene vinyl acetate) copolymer, hot melt copolyamides, epoxy and silicone resins. In each case, the relationships between the processing parameters and microstructure of obtained nanocomposites were described. The synergistic effect of hybrid nanofillers was also explored in nanocomposites with carbon and halloysite nanotubes. The effect of carbon nanotubes on the wear behavior of nanocomposites based on epoxy resin was investigated as well. The original results on the synthesis and characterization of composite shear thickening fluids containing carbon nanofillers are presented. The addition of the CNTs modified the impact absorption ability of such fluids. The presented Special Issue results also proved that CNTs can be used to obtain and durable cement-based composites.

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