



Graphene in Composite Materials: Synthesis, Characterization and Applications

Nikhil Koratkar

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Graphene for polymer, metal and ceramic matrix composites; New mechanical, thermal and electrical data for graphene in engineered materials; Applications in films, coatings and liquid suspensions

----- Original monograph discusses graphene within the carbon chemistry alternatives available to materials engineers and explains how it is incorporated into polymer-matrix, as well as ceramic- and metal-matrix composite materials. The book shows how different forms of graphene can be synthesized and then added to polymer composites as main or hybrid nanofillers, with a focus on how graphene affects electrical and mechanical properties. Offers the theory and data necessary to design novel graphene-based composites with unique load-bearing, flammability and wear properties. Throughout, the book lists many newly discovered mechanical, thermal and electrical properties of graphene. Emerging uses of graphene in films, coatings and colloidal suspensions (i.e., graphene with liquid matrices) are also investigated.

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