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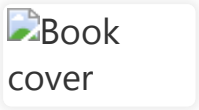


**Surface Engineering of Graphene** pp 175–201

# Synthesis and Properties of Graphene and Graphene Oxide-Based Polymer Composites

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## Abstract

Graphene and graphene oxide-based polymer composites have remarkable interests over the last one decade due to their excellent mechanical, thermal and electrical properties. The nanometric synthesized fillers with polymeric matrix enhance the structural, morphological and functional properties of the composite materials, and this can be prepared by both ex situ/in situ processes. However, the presence of graphene and graphene oxide even at a very small amount of loadings can give major reinforcement to the final properties of the composites. In addition, graphene is one of the finest material of choice for