



Editorial

Simulation and Experimental Studies and Applications of Carbon Nanotubes and Graphenes in Engineering and Medicine

Since their discoveries in 1990's of last century and the beginning of this century, respectively, carbon nanotubes (CNTs) and graphenes have been extensively investigated. Investigations of the properties of CNTs and graphenes, either as single nanostructures or as components in nanoscale devices, such as molecular transporter or nanocomposites, have become one of the most active research directions in materials physics and chemistry and nanotechnology. The investigations include a wide range of studies on their electronic conductance properties, field emission properties, fracture and buckling properties, and thermal conductivity properties. The studies have exhibited extremely high strength and exceptional electronic and thermal properties of the nanostructures. The superior mechanical properties have generated a great motivation for mechanical engineers and scholars to explore potential applications of individual CNTs and graphenes, and nanoscale systems made from them. The efforts by the engineers and scholars have revealed wide potential applications of CNTs and graphenes in nanodevices in biological, medical, energy storage, sensor, and other engineering and medicine applications. The nanostructures have been found to hold substantial promises as nanosensors, oscillators, transistors, solar cells, molecular transporters, ultracapacitors, microbial detection, and diagnosis devices, etc. Extensive and comprehensive simulation and

experimental studies on carbon nanotubes and graphenes will open a door for a wide range of their applications in engineering and medicine.

This special issue is dedicated to the publication of recent developments in simulations and experiments of the two materials for their applications in engineering and medicine applications. A wide range of fundamentally theoretical, computational, experimental topics on modeling, and applications of the two materials are covered in the special issue. It is with great pleasure that we present this special issue that covers a very wide and varied range of subject areas in original research reports addressing nanoscale phenomena and their applications and reviews of emerging nanotechnology topics and research needs. The research papers in the special issue will be published in Vol. 3 Nos. 1 and 2 of the journal due to different submission and processing stages.

We would like to extend our sincere thanks to the authors for their contributions, especially their precious time and efforts invested in the special issue.

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