Special Issue

Electronic, Optical, and Structural Properties of Carbon Nanotubes

Message from the Guest Editors

Carbon nanotubes (CNTs) are a fascinating nanomaterial with unique electronic and structural properties. These cylindrical structures composed of carbon atoms exhibit exceptional electrical conductivity, mechanical strength, and thermal stability. The electronic properties of carbon nanotubes can be metallic or semiconducting, depending on their chirality. The one-dimensional nature of carbon nanotubes results in quantum confinement effects, making them ideal candidates for various electronic applications, such as field-effect transistors, sensors, and interconnects. Furthermore, the structural properties of carbon nanotubes, such as their high aspect ratio and nanoscale dimensions, contribute to their exceptional mechanical properties, making them promising materials for reinforcing composites and nanoelectromechanical systems. Understanding and controlling the electronic and structural properties of carbon nanotubes are crucial for harnessing their full potential in advanced nanotechnology, nanoelectronics, and medicine.

We encourage researchers working in the field of CNTs to present their findings in this Special Issue of Materials.

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Message from the Editor-in-Chief

Materials (ISSN 1996-1944) was launched in 2008. The journal covers twenty-five comprehensive topics: biomaterials, energy materials, advanced composites, advanced materials characterization, porous materials, manufacturing processes and systems, advanced nanomaterials and nanotechnology, smart materials, thin films and interfaces, catalytic materials, carbon materials, materials chemistry, materials physics, optics and photonics, corrosion, construction and building materials, materials simulation and design, electronic materials, advanced and functional ceramics and glasses, metals and alloys, soft matter, polymeric materials, quantum materials, mechanics of materials, green materials, general. *Materials* provides a unique opportunity to contribute high quality articles and to take advantage of its large readership.

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