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Special Issue Reprint

Functional Graphene-Based Nanodevices

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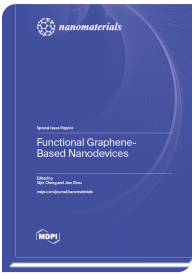

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This reprint compiles cutting-edge research from the Special Issue "Functional Graphene-Based Nanodevices," showcasing advancements in the synthesis, modification, and application of graphene-based nanomaterials. The contributions highlight graphene's exceptional mechanical, optical, thermal, and electronic properties, enabling breakthroughs in transistors, sensors, photodetectors, and energy storage devices, etc. Notable innovations include stretchable graphene scroll transistors for self-powered tribotronics, high-performance graphene/Si photodetectors with HfO_2 interfacial layers, and graphene-based lithium-ion capacitors with superior energy density, etc. Additionally, the reprint explores novel sensor designs, such as a crossbeam structure for N/MEMS mechanical sensors, and electrochemical methods for environmental monitoring. The synthesis and functionalization of graphene derivatives, including graphene oxide and reduced graphene oxide, are also investigated, revealing enhanced optical characteristics. This collection provides a comprehensive overview of the latest developments in graphene-based nanodevices, offering valuable insights for researchers and engineers in nanotechnology and materials science.

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