

Special Issue

Advances in 2D Material-Based Electronic Devices

Message from the Guest Editor

Two-dimensional (2D) materials such as graphene, transition-metal dichalcogenides (TMDs), and MXenes have attracted tremendous attention for next-generation electronics. Their atomic-scale thickness, tunable band structures, and exceptional electrical and mechanical properties enable device concepts that surpass the limitations of conventional semiconductors. Two-dimensional materials are driving innovations in transistors, sensors, photodetectors, memory, energy, and flexible and wearable electronic systems. This Special Issue, “Advances in 2D Material-Based Electronic Devices,” aims to highlight the latest progress in the synthesis, characterization, and functional integration of 2D materials for diverse electronic and optoelectronic applications. Topics of interest include device physics, fabrication and scaling strategies, interface and heterostructure engineering, reliability, and novel device architectures. By gathering cutting-edge experimental and theoretical contributions, this Special Issue seeks to advance fundamental understanding and promote the translation of 2D materials research into practical, high-performance, and multifunctional electronic technologies.

Guest Editor

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Deadline for manuscript submissions

19 March 2027



Materials

an Open Access Journal
by MDPI

Impact Factor 3.2
CiteScore 6.4
Indexed in PubMed



mdpi.com/si/276865

Materials
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