Special Issue

Advances in Two Dimensional Materials: From Properties to Applications

Message from the Guest Editor

This Special Issue, "Advances in Two Dimensional Materials: From Properties to Applications", highlights the transformative potential of two-dimensional materials in cutting-edge technologies. These materials, including graphene, transition metal dichalcogenides, etc., exhibit unique quantum effects and tunable properties, making them ideal for next-generation semiconductors and electronic devices. The development of heterostructures, combining distinct 2D materials, enables tailored functionalities, enhancing device performance in fields such as nanoelectronics. optoelectronics, and quantum computing. Despite significant progress, challenges remain in optimizing the synthesis, characterization, and integration of 2D materials into scalable systems while preserving their exceptional properties. Innovative approaches are needed to harness quantum effects for practical applications and to design heterostructures with synergistic electronic and optical characteristics.

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Deadline for manuscript submissions

20 March 2026



an Open Access Journal by MDPI

Impact Factor 3.2 CiteScore 6.4 Indexed in PubMed



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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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