Special Issue

Advanced Two-Dimensional Materials: Characterization, Defect-Engineering, and Applications

Message from the Guest Editor

This Special Issue focuses on the state-of-the-art research progress in the field of two-dimensional (2D) materials. Designing new 2D structures to unlock novel functionalities, laying the groundwork for the next-generation devices, is of particular interest. Several approaches are exploited to this end, ranging from the manipulation of these materials' natural properties via structural defect engineering or assembling and mixing 2D materials in homo- or heterostructures, e.g., band structure tuning via altering the lattice structure or via twisting the atomic planes in vertical heterostructures; tuning optical and electronic properties by mixing different materials; generating photon sources via defect-based color centers; and enhancing surface chemical reactivity via structural defect engineering.

The present Special Issue is primarily devoted to novel experimental studies on 2D materials that explore property characterization, property tuning via materials assembling and defect engineering (design, methodology control, and characterization), and their applications in device physics.

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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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