Special Issue

2D Materials for Electronic and Optoelectronic Devices

Message from the Guest Editors

Dear colleagues, Two-dimensional (2D) materials with unique electronic and optoelectronic attributes have spurred a wide spectrum of applications with record-setting performances and interesting semiconductor physics. For instance, graphene can act as a monolayer of carbon atoms for broadband photodetectors or an on-chip waveguide-integrated optical modulator, and finds use in nonlinear optical applications. Transition-metal dichalcogenides can be used as ultrathin optical gain media for light sources and electronic transistors. Abundant photonics and electronic physics can be also explored using these low-dimensional material platforms, including Moiré superlattices, excitons and phonon polaritons. Furthermore, 2D materials can be combined with various photonic structures, such as metasurfaces, photonic crystals, optical resonators and waveguides, for a diverse range of extended functionalities, and transformed into different types of electrical device layouts for electronic transistors, memristors and so on.

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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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