Special Issue

Ultrathin Transition Metal Dichalcogenides and Other 2D Materials

Message from the Guest Editor

In the past decade, researchers have been actively looking for alternative 2D materials to overcome the difficulties related to the absence of a bandgap in graphene. Transition metal dichalcogenides (TMDCs), with a structure in the form of X–M–X, where M is a transition metal element from groups 4–7 and 10, while X is a chalcogen (S, Se, Te), have promptly emerged as promising materials. The aim of this Special Issue is to provide a platform for both experimental and theoretical studies on the fundamentals and applications of 2D transition metal dichalcogenides. Topics of interest to this special issue include, but are not limited to:

- Transition metal dichalchogenide
- Synthesis: Exfoliation, chemical vapor deposition, molecular beam epitaxy
- Structure Transport properties Radiation effect
- Mobility engineering Mechanical properties Strain engineering
- Electronic bandstructure: Bandgap, spin–orbit, and spin–valley coupling
- Semiconductor devices: Heterostructures, transistors, photodetectors, memories, high-frequency applications
- Optical properties: Emission, absorption, excitons

Guest Editor

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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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