Special Issue

Synthesis, Structure and Applications of 2D Heterostructures

Message from the Guest Editor

2D nanomaterials including graphene, transition metal dichalcogenides (TMDs), black phosphorus (BP), MXenes, metal-organic framework (MOF), hexagonal boron nitride (h-BN), layered double hydroxides (LDHs) and transition metal oxides (TMOs) provide a series of advantages including high specific surface area, excellent semiconductor performance and abundant surface-active sites. Despite this, 2D nanomaterials also have their own limitations when they are employed in diverse applications. 2D heterostructures can overcome the limitations of individual 2D nanomaterials. Novel properties which are not related to any of the 2D nanomaterials can also be realized. The aim of the Special Issue Synthesis, Structure and Applications of 2DHeterostructures is to provide updated design strategies of 2D heterostructures and explore the structure-property correlations between various 2D junctions including 0D/2D, 1D/2D, 2D/2D and 3D/2D systems and their multifunctional applications. Future research perspectives for the exploitation of emerging 2D heterostructures along with novel synthetic strategies will also be proposed.

Guest Editor

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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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