Special Issue

Application of 2D Transition Metal Dichalcogenides for Advanced Nanosensors

Message from the Guest Editors

For many years, the principal strategy to improve the sensitivity of solid-state sensors has been to increase the surface area in contact with the environment or to fabricate thinner sensing films. Since sensing primarily occurs at the film's surface, while conductivity is a bulk property, thinner films provide an increase in the surface-to-volume ratio which improves the sensitivity. While graphene has received the most attention in the last few decades, research has struggled to provide a working graphene-based field-effect transistor (FET) due to its lack of a bandgap. In the meantime, a host of other potential two-dimensional (2D) materials have risen in prominence, such as transition metal dichalcogenides (TMD). This Special Issue invites research papers and reviews on all topics related to the utilization of 2D TMDs for sensing applications including, but not limited to, the following:

- Room-temperature gas sensors;
- Photodetectors;
- Thermal detectors;
- High-sensitivity pressure sensors;
- Biosensors;
- Acoustic sensors;
- Flexible nanosensors;
- Piezoelectronic devices;
- Effects of TMD layer growth and synthesis on sensor behavior.

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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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