Special Issue

Advances and Challenges in Nano-Functional Materials for Detection Applications

Message from the Guest Editor

The demand for sensors has grown over the decades, particularly in the era of Internet of Things (IoT). The large size, complex, and high-cost detecting instruments are replaced by the compact, simplified, and economical sensors, which are integrated with or employed in consumer electronics, smart devices, autonomous vehicles, or point-of-care testing (POCT). As a milestone of this endeavor, nanomaterials with decent chemical and physical properties—including extended surface area, superior catalytic activity, quantum confinement, and mechanical flexibility—pave the way for the next-generation sensors. However, challenges also arise, such as uniform quality control and the stable reliability of nanomaterials for scale-up production. This Special Issue will cover comprehensive research subjects on the advances and challenges in nano-functional materials for detection applications. Potential topics include, but are not limited to gas sensors, liquid sensors, bio-sensors, photodetectors, and physical sensors.

Guest Editor

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Message from the Editor-in-Chief

Nanoscience and nanotechnology are exciting fields of research and development, with wide applications to electronic, optical, and magnetic devices, biology, medicine, energy, and defense. At the heart of these fields are the synthesis, characterization, modeling, and applications of new materials with lower nanometer-scale dimensions, which we call “nanomaterials”. These materials can exhibit unusual mesoscopic properties and include nanoparticles, coatings and thin films, metal–organic frameworks, membranes, nano-alloys, quantum dots, self-assemblies, 2D materials such as graphene, and nanotubes. Our journal, *Nanomaterials*, has the goal of publishing the highest quality papers on all aspects of nanomaterial science to an interdisciplinary scientific audience. All of our articles are published with rigorous refereeing and open access.

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