Special Issue

Semiconductor Metal Oxide Nanomaterials for Gas Sensing Applications

Message from the Guest Editor

Metal oxide semiconductor nanomaterials have a high sensitivity, short response/recovery time and low cost considering their large surface-area-to-volume ratio and activity. Obvious depletion layer form on the surface of nanomaterials when gas absorbs there. The sensitivity of nanomaterials can be improved by reducing them to an ultrathin nanosheet or ultralong nanowire composite with another metal oxide or noble metal to form a heterojunction. These strategies can increase the ratio of the depletion layer on the nanomaterial and produce new functional materials for high-performance device or sensor applications. This Special Issue plans to present a cross-section through current research regarding Semiconductor Metal Oxide Nanomaterials for Gas Sensing Applications. Potential topics include, but are not limited to:

- metal oxide semiconductors: SnO2, ZnO, VO2, In2O3, WO3 and CuO and so on
- nanoparticles, nanorods, nanowire, ultrathin nanosheet structure,
- nanocomposite structure
- heterojunctions
- nano array
- gas sensors
- room temperature response
- sensitive materials
- electronic nose
- chemiresistive gas sensors

Guest Editor

Dr. Jiran Liang

School of Electronics and Information Engineering, Tianjin University, Tianjin 300072, China

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Nanomaterials
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
nanomaterials@mdpi.com

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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.

Editor-in-Chief

Prof. Dr. Eugenia Valsami-Jones
School of Geography, Earth and Environmental Science, University of Birmingham, Birmingham B15 2TT, UK

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