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Metal Oxide Nanoparticles and Nanowires: Synthesis, Characterization, and Applications

Guest Editors:

Prof. Dr. Seung Hwan Ko
Applied Nano and Thermal Science (ANTS) Lab Department of Mechanical Engineering Seoul National University 1 Gwanak-ro, Gwanak-gu, Seoul 151-742, Korea

Prof. Dr. Daeho Lee
Department of Mechanical Engineering, Gachon University, Seongnam, Gyeonggi, Korea

Dr. Ming-Tsang Lee
Department of Power Mechanical Engineering, National Tsing Hua University, Hsinchu 30013, Taiwan

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closed (31 March 2021)

Message from the Guest Editors

Dear Colleagues,

Metal oxide nanomaterials are versatile materials. As semiconductors, they are utilized as active materials for various kinds of chemical and physical sensors for detecting gases, chemical species, light, temperature, and bio-species, while reduced or doped metal oxides are applied to electrical and thermal conductors. On the other hand, as metal oxides show either n- or p-type behavior, depending on their own defect structure or doping elements, they are used as active layers of field effect transistors, and carrier transport layers in various types of optoelectronic devices. Furthermore, some metal oxides, such as iron oxides, have magnetic characteristics, and some metal oxides are utilized for battery electrodes. Depending on the synthesis routes, metal oxide nanomaterials have various kinds of morphologies (i.e., nanoparticles, nanowires, and nanoparticle-nanowire hybrid structures), are hence utilized for diverse applications [...]

For further reading, please follow the link to the Special Issue website at: https://www.mdpi.com/si/35842

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Editor-in-Chief

Prof. Dr. Shirley Chiang
Department of Physics, University of California Davis, One Shields Avenue, Davis, CA 95616-5270, USA

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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Contact Us

Nanomaterials Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland

Tel: +41 61 683 77 34
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