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Surface Functionalization of Carbon-Based and Metal Oxide Nanostructures for Gas Sensing

Guest Editor:

Prof. Dr. Luigi Sangaletti
Mathematics and Physics Department, Università Cattolica del Sacro Cuore, 25121 Brescia, Italy

Deadline for manuscript submissions:
closed (20 August 2023)

Message from the Guest Editor

Dear Colleagues,

This Special Issue of Nanomaterials will mainly cover the most recent advances from experimental and theoretical studies in functionalization strategies of nanostructured platforms for gas sensing. One way to engineer nanostructured materials is through functionalization, which can be achieved in different ways once a nanostructured platform has been created. Another promising functionalization method is represented by the growth of ultrathin layers, including molecular layers with either covalent or van der Waals bonding, on nanostructured platforms leading to the formation of heterojunctions. In particular, we will focus on nanostructured carbon (CNT, graphene) and metal oxide nanostructures for gas sensing. Experimental studies will focus on the functionalization of nanostructured platforms and their characterization including in situ, operando, and time-resolved spectroscopy probes, as well as the gas–surface interactions and the testing of sensing performances. Theoretical studies will focus on ab initio simulation of the physical and chemical properties of surfaces and heterointerfaces.

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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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