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Metal-Based Nanomaterials for Biomedical, Agricultural, and Environmental Applications: Prospects and Uncertainties

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Message from the Guest Editor

Recently, metal-based nanomaterials such as metal nanoparticles, metal oxides, and hybrid nanomaterials, have found wide application in various fields.

In biomedicine, these nanomaterials are used to develop promising biosensors, drug and gene delivery instruments, theranostic agents, antibacterial and anticancer drugs, and tissue engineering constructs.

In agriculture and the food industry, metal-based nanomaterials are used to develop smart fertilizers, growth regulators, pesticides, soil improvers, biosensors, and packaging materials.

In environmental protection, metal-based nanomaterials are being considered for the removal of contaminants from air, water, and soil, soil remediation, catalytic conversion of carbon dioxide, and green energy applications.

At the same time, the sustainable use of metal-based nanomaterials is not possible without a comprehensive assessment of their safety for the environment, including transfer in food chains, as well as for human health.

Papers dedicated to all of these topics are welcome in the Special Issue. In addition, works presenting new methods and research results for nano-bio interfaces are also welcome.



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Special Issue



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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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