Special Issue

From Nanoinformatics to Nanomaterials Risk Assessment and Governance

Message from the Guest Editors

High-quality nanomaterials, with systematically varied properties that are retained in biological dispersions, are essential in order to definitively connect cause and effect and tease out nanomaterial specific drivers of toxicity or biological impacts from nanomaterials. However, the diversity of possible nanomaterial compositions in terms of core material(s), labelling, coatings, surface functionalisation and their physicochemical properties including size, shape, crystal structure, etc. mean than rigorous testing of each variant is not possible. To help to overcome this knowledge gap, nanoinformatics approaches are urgently needed and indeed are developing rapidly to facilitate prediction of properties from reduced characterisation information sets, to enable grouping of nanomaterials on the basis of their properties and effects, and read-across of knowledge from well-characterised nanomaterials to less extensively characterised ones based on similarities in their applications, exposure routes and expected toxicity. Integration of nanomaterials synthesis and nanoinformatics knowledge will ultimately lead to safer nanomaterials and indeed safer by design strategies.

Guest Editors

Prof. Dr. Dario Greco

Dr. Antreas Afantitis

Dr. Georgia Melagraki

Prof. Dr. Iseult Lynch

Dr. Maria Dusinska

Prof. Dr. Miguel A. Banares

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

mdpi.com/journal/nanomaterials

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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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