

Special Issue

Interface Structures and Properties in Nanocomposites

Message from the Guest Editors

The performance of nanocomposites is fundamentally governed by the structure and behavior of interfaces between the nanoscale fillers and the matrix. These interfacial regions dictate critical properties including mechanical strength, electrical and thermal conductivity, catalytic activity, and chemical stability. With recent advances in nanomaterial synthesis and interface engineering, there is growing potential to tailor interfacial architectures at the atomic scale in order to achieve unprecedented multifunctional performance. This Special Issue aims to present cutting-edge research and reviews on the design, characterization, modeling, and application of interfaces in nanocomposites. Topics of interest include, but are not limited to, the following:

- Atomic-scale interfacial engineering and functionalization;
- Advanced characterization techniques (e.g., in situ TEM, spectroscopy, scattering methods);
- Theoretical and computational studies of interface phenomena;
- Role of interfaces in mechanical, electrical, thermal, and electrochemical properties;
- Applications in energy storage, catalysis, sensors, structural materials, and electronic devices.

Guest Editors

Dr. Shuai Zhang

College of Materials Science and Technology, Nanjing University of Aeronautics and Astronautics, Nanjing 210016, China

Dr. Ruishan Xie

Faculty of Materials and Manufacturing, Beijing University of Technology, Beijing 100124, China

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Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
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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. We are proud of our increasing impact factor and ability to provide rapid decisions to authors.

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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