Special Issue

Nanoparticle Assembly: Fundamentals and Applications

Message from the Guest Editors

Nanoparticle assembly is a cutting-edge field within nanotechnology and materials science, focusing on the organization of nanoparticles into larger, structured formations. These assemblies exhibit novel properties and functionalities that are not present in individual nanoparticles, driven by interparticle forces (such as van der Waals interactions, electrostatic forces, and steric effects), chemical bonding, and surface decoration. Characterizing these assemblies through advanced techniques like transmission electron microscopy (TEM), scanning electron microscopy (SEM), and various spectroscopic techniques is crucial for understanding their structure and properties. We are pleased to invite you to contribute to this Special Issue with your full papers, reviews, or communications on experimental and theoretical results of nanoparticle assembly. The aim of this Special Issue is to explore novel assembly techniques, elucidate the mechanisms underlying nanoparticle interactions, demonstrate computational and experimental characterization techniques, and highlight cutting-edge applications and the potential of assembled nanostructures.

Guest Editors

Dr. Alina Skorynina

ALBA Synchrotron Light Source, Cerdanyola del Valles, E-08290 Barcelona, Spain

Dr. Bo Xiao

School of Chemistry and Chemical Engineering, Queen's University Belfast, Belfast BT7 1NN, UK

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

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Materials (ISSN 1996-1944) was launched in 2008. The journal covers twenty-five comprehensive topics: biomaterials, energy materials, advanced composites, advanced materials characterization, porous materials, manufacturing processes and systems, advanced nanomaterials and nanotechnology, smart materials, thin films and interfaces, catalytic materials, carbon materials, materials chemistry, materials physics, optics and photonics, corrosion, construction and building materials, materials simulation and design, electronic materials, advanced and functional ceramics and glasses, metals and alloys, soft matter, polymeric materials, quantum materials, mechanics of materials, green materials, general. *Materials* provides a unique opportunity to contribute high quality articles and to take advantage of its large readership.

Editor-in-Chief

Prof. Dr. Maryam Tabrizian
1. Department of Biomedical Engineering, Faculty of Medicine and Health Sciences, McGill University, Montreal, QC H3A 2B6, Canada
2. Faculty of Dentistry and Oral Health Sciences, McGill University, 3640 Rue University, Montreal, QC H3A 0C7, Canada

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