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Nanoparticles and Leaching

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Deadline for manuscript submissions:
closed (15 October 2019)

Message from the Guest Editor

Nanoparticles are ubiquitously utilized in chemical sciences, catalysis, energy research, biological and medicinal applications. In the vast majority of real-world processes, nanoparticles interact with water, organic solvents, or a series of liquid phases and liquid reagents. The interaction of nanoparticles with liquids gives rise to the intriguing phenomenon of leaching. Leaching is a complex combination of events involving the breaking out of small fragments (single atoms or atomic clusters) from the surface of a nanoparticle and their transfer to the liquid phase.

Leaching has a paramount impact on the stability and chemical activity of nanomaterials. The toxicity of nanoparticles represents a highly important issue, which is closely related to environmental and sustainability research. The interaction of nanoparticles with living cells and organisms may involve particular chemical transformations induced by the leaching of components of nanoparticles to aquatic environments and living tissues.

The paramount importance of leaching at the cutting-edge nanoscience level deserves a dedicated highlight in the 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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