Safety and Biocompatibility of Metallic Nanoparticles

Message from the Guest Editor

This Special Issue aims to cover all aspects of safe production, safe use and safe disposal of metallic nanoparticles (mNPs) promoting implementation of the SbD concept. We welcome contributions on: methodologies for design and production of less hazardous mNPs using combination of non-testing predictions together with high-throughput screening tools; characterisation of mNPs providing the key characteristics that influence the release, exposure, behaviour, effects and subsequent environmental and/or human risks of different forms, types and sizes of mNPs; transformation pattern and fate of mNPs in different biological or environmental compartments encompassing the conditions, extent and rate of change of mNPs structure and stability throughout the different stages of their life cycle; dose metrics that define a particular response of mNPs in certain biological or environmental system; evaluation of exposure risk for workers, consumers and environment by identifying actions for risk mitigation such as life cycle assessment and risk vs. benefit ratio profiling for mNPs.
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.