Special Issue

The Effect of Nanomaterials on Cellular Systems

Message from the Guest Editor

The safety of nanomaterials, despite the benefits they bring to the society, is still a matter of debate. Nanomaterials (NMs) can easily enter the human body and cross all intrinsic barriers, making them very useful as drug delivery vectors; on the other hand, nanomaterials may interact with biological systems and induce potentially harmful effects. Presently, there is increasing concern about the detrimental health effects due to NM exposure. NMs have been reported to induce oxidative stress, DNA damage, inflammation, and many other adverse effects which are known to be crucial for the development of lifestyle diseases. Mitochondria malfunction, leading to the generation of free radicals and subsequent oxidative stress, seems to be a major cause of NM toxicity. The disturbance of cellular redox equilibrium may have differing effects depending on the magnitude of oxidative stress—from triggering signal transduction via low concentrations of ROS through to the induction of oxidative damage to cellular components and organelles as well as the induction of cell death resulting from immense ROS production. This, in turn, usually affects tissue and organ function.

Guest Editor

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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.

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