

Special Issue on **Biomechanisms of Nanomaterials: Antioxidants and Oxidants**

CALL FOR PAPERS

Recently, nanomaterials (NMs) have started playing a fundamental role in human life and health, owing to their substantial benefits of biomedical applications, like medical imaging, disease diagnoses, drug delivery, cancer treatment, gene therapy, and so on. Moreover, the potent antioxidant property displayed by some NMs is opening exciting potentials to develop new therapies with enhanced and targeted actions. For instance, fullerenes, cerium oxide, gold, silver, and selenium NPs have been shown to be efficient redox active radical scavenging materials, due to their ability to reduce oxidative stress in living cells. On the other hand, oxidative stress or redox state imbalance is a major adverse effect of certain NMs particularly metallic and metallic oxides structured NMs such as titanium dioxide (TiO₂), nickel oxide (NiO), zinc oxide (ZnO), silica (Si), and copper (Cu) NMs owing to their intrinsic ability to generate damaging radicals and participate in redox reactions. In this regard, a better understanding of the mechanisms by which NMs induce their activity in exposed organisms has intensively increased in the last decade and remain the primary focus of many investigators.

This special issue is dedicated to integrating the previous and the current biological mechanisms of redox nanomaterials in initiating or ameliorating oxidative stress and associated diseases. We cordially invite researchers to contribute their original articles and reviews in our special issue.

Potential topics include but are not limited to the following:

- ▶ Synthesis, characterization, and pharmacotoxicological aspects of redox active nanomaterials
- ▶ Pharmacological/clinical applications of antioxidants nanomaterials
- ▶ Implication of antioxidant nanomaterials for controlling diseases
- ▶ Novel antioxidants nanostructures and their mechanisms of action
- ▶ Molecular pathways of antioxidants and oxidants nanostructured materials
- ▶ Assessment of the toxicity and antioxidant activity of redox nanomaterials
- ▶ Modeling of nanomaterials interactions with cellular molecules
- ▶ Nanomaterials-mediated effects of oxidative stress at the molecular, biochemical, cellular, and disease levels
- ▶ Potential exposure biomarkers of redox active nanomaterials

Authors can submit their manuscripts through the Manuscript Tracking System at <http://mts.hindawi.com/submit/journals/omcl/bnao/>.

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