



Influence of Nanoparticles on Plants: The Pros and Cons

Guest Editor:

Dr. Dalibor Húska

Mendel University in Brno,
Department of Chemistry and
Biochemistry, Laboratory of Plant
Metabolomic and Epigenetic,
Zemědělská 1665/1, 613 00 Brno,
Czech Republic

Deadline for manuscript
submissions:

closed (31 August 2022)

Message from the Guest Editor

Dear Colleagues,

Currently, the major problems in crop plant growing are the extreme changes of the weather, nutrient deficiency of soil, and wasteful use of insecticide and herbicide against pests. These problems can be solved using nanotechnology (nanoparticle) approaches. However, there is still very little information about their “fate” and influence on plant organisms. Therefore, further basic research on the phytotoxicity of nanomaterials is extremely important, as well as research on how we could use NPs in agriculture. The main aim of this Special Issue is to paint an overall picture of the influence of different nanoparticles (NPs) on the development, growth, biosynthesis of secondary metabolites, production of reactive oxygen species, and their impact on the expression of genes and epigenetic level, including (methylation to sRNAs) on plants. Generally, the toxicity of nanoparticles is attributable to two different steps: i) chemical toxicity based on chemical composition, for example, the release of (toxic) ions, and ii) stress stimuli caused by surface, size, or shape of the particles.

Dr. Dalibor Húska
Guest Editor





an Open Access Journal by MDPI

Editor-in-Chief

Prof. Dr. Shirley Chiang

Department of Physics, University
of California Davis, One Shields
Avenue, Davis, CA 95616-5270,
USA

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.

Author Benefits

Open Access: free for readers, with [article processing charges \(APC\)](#) paid by authors or their institutions.

High Visibility: indexed within [Scopus](#), [SCIE \(Web of Science\)](#), [PubMed](#), [PMC](#), [CAPus / SciFinder](#), [Inspec](#), and [other databases](#).

Journal Rank: JCR - Q1 (*Physics, Applied*) / CiteScore - Q1 (*General Chemical Engineering*)

Contact Us

Nanomaterials Editorial Office
MDPI, St. Alban-Anlage 66
4052 Basel, Switzerland

Tel: +41 61 683 77 34
www.mdpi.com

mdpi.com/journal/nanomaterials
nanomaterials@mdpi.com
[X@nano_mdpi](#)