

Special Issue

Plastic Waste and Plastisphere Microorganisms

Message from the Guest Editor

Plastic waste, including micro- and nanoplastics, threatens aquatic, terrestrial, and marine ecosystems. Plastic debris interacts with heavy metals and organic pollutants, forming complex composite pollution that amplifies ecological risks. The plastisphere—microbial communities colonizing plastic debris—is a central focus in microbial ecology. Research on plastisphere microbes and their interactions with plastics, plasticizers, and associated contaminants is essential. This Special Issue invites papers on: (1) diversity, composition, and functional traits of plastisphere communities across plastic types; (2) molecular and enzymatic mechanisms of microbial degradation of plastics, micro/nanoplastics, and plasticizers; (3) bioremediation potential for degrading plastic waste and mitigating composite pollution; and (4) ecological impacts and health risks, including antibiotic resistance gene dissemination. These studies will advance microbe–plastic interaction knowledge, support sustainable pollution control strategies, and protect ecosystems and public health. We welcome your contributions.

Guest Editor

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About the Journal

Message from the Editor-in-Chief

"Microorganism" merges the idea of the very small with the idea of the evolving reproducing organism is a unifying principle for the discipline of microbiology. Our journal recognizes the broadly diverse yet connected nature of microorganisms and provides an advanced publishing forum for original articles from scientists involved in high-quality basic and applied research on any prokaryotic or eukaryotic microorganism, and for research on the ecology, genomics and evolution of microbial communities as well as that exploring cultured microorganisms in the laboratory.

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