

Special Issue

Resilient Biofilms and Their Control

Message from the Guest Editors

Biofilms are a microbial community comprising clusters of cells embedded within a matrix of extracellular polymeric substances (EPS). Extracellular proteins, DNA and carbohydrates are the main constituents of their EPS, which are further stabilized in the presence of particular cations. Biofilm development is often regulated by quorum sensing and other regulatory networks including secondary messengers such as cyclic AMP and cyclic-di-GMP. The collective properties of the biofilm structure, the metabolic adaptability of the microorganisms within, and their ability to sense and respond to environmental cues contribute to biofilm resistance against various physical and chemical stressors, such as nutrient limitation and host-immune system. One such resultant fitness gain is antibiotic resistance, which has large negative impacts on medicine, industry, agriculture, and environmental management, among others. Understanding the evolution of biofilms by examining their formation, development, and persistence over time can help in developing strategies to manage biofilm-related problems.

Guest Editors

Prof. Dr. Édouard J. Jurkevitch

Department of Plant Pathology and Microbiology, Jerusalem, Israel

Dr. Abhirup Mookherjee

Cavendish Laboratory, Department of Physics, University of Cambridge,
19 JJ Thomson Avenue, Cambridge CB3 0HE, UK

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Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
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"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.

Editor-in-Chief

Dr. Nico Jehmlich

Department of Molecular Toxicology, UFZ-Helmholtz Centre for
Environmental Research, 04318 Leipzig, Germany

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