

Life and Applications of Extremophiles

Extremophiles thrive under harsh conditions that are often detrimental to other organisms. Environmental niches on Earth that are, for example, extraordinarily hot, cold, acidic or alkaline, or which are subjected to high salinity, radiation or pressure, are inhabited by extremophiles. The vast majority of extremophiles are microbes, representing numerous and diverse genetic lineages from across the three domains of life: Bacteria, Archaea and Eukarya. Research into extremophiles has unveiled novel mechanisms and biomolecular structures that are raising new questions about microbial adaptation to extreme conditions and has provided a broad range of industrial applications. This is a rapidly-growing field of research in terms of basic and applied science.

The **Life and applications of extremophiles** is a joint issue that will be published together by **Environmental Microbiology** and **Microbial Biotechnology**. The first issue will showcase exciting advances in our fundamental understanding of extremophiles, while the second issue will explore their applications, including enzymes from extremophiles that operate under harsh conditions.

Both **Environmental Microbiology** and **Microbial Biotechnology** will publish Reviews, Mini-reviews, Opinions and Full-length research articles. In addition, **Microbial Biotechnology** welcomes brief reports. These special issues aim to attract manuscripts relating to the following topics:

- Microbial interactions, ecology and biogeochemistry of extreme environments
- Assessing and accessing microbial diversity in extreme environments, including metagenomic and other meta-omic approaches
- Thermodynamic limits of life and polyextremophiles
- Biochemistry and physiology of extremophiles
- Enzymes from extremophiles
- Genomics and mobile genetic elements
- DNA synthesis and repair under extreme conditions
- Molecular biology and protein structure relating to extremophiles
- Systems biology of extremophiles
- Astrobiology
- Biotechnological applications

Guest Editors:

Terry McGenity

University of Essex, UK

Ricardo Amils

University Autonoma de Madrid, Spain

Rick Cavicchioli


University of New South Wales, Australia

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