



an Open Access Journal by MDPI

# The Mechanisms and Applications of Microbial Electrocatalysis

Guest Editor:

### Prof. Dr. Xiaobo Liu

School of Environmental and Biological Engineering, Nanjing University of Science and Technology, Nanjing 210094, China

Deadline for manuscript submissions: closed (1 July 2020)

### Message from the Guest Editor

Microbial electrocatalysis involves bidirectional electron transfer between biotic and abiotic components, whereby redox-active microorganisms play the important role in the electrochemical reactions between electron donors and acceptors. One typically applied model is the microbial fuel cell (MFC), in which microorganisms transfer electrons to the MFC anode after oxidizing the electron donors, thus generating electron flow towards the cathode. Most importantly, this redox process has been closely associated with biogeochemical cycles, such as the nitrogen, carbon, and sulfur cycles, showing many emerging applications in waste treatment and resource recovery, sustainable energy production, and bio-inspired materials development. Based on the recent advances, this Special Issue aims to publish papers that address:

- Electron transfer between microbial cells and extracellular substances;
- Catalytic elimination of environmental pollutants, such as heavy metal ions, nitrates, and waste;
- New catalytic routes and processes for the production of clean energy and green chemicals;
- Microbial electrocatalysis in which wastes are converted to useful products.





mdpi.com/si/20842





an Open Access Journal by MDPI

## **Editor-in-Chief**

#### Dr. Nico Jehmlich

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

### 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 highquality 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.

## **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, PubAg, CAPlus / SciFinder, AGRIS, and other databases. **Journal Rank:** JCR - Q2 (*Microbiology*) / CiteScore - Q2 (*Microbiology*)

## **Contact Us**

*Microorganisms* Editorial Office MDPI, Grosspeteranlage 5 4052 Basel, Switzerland Tel: +41 61 683 77 34 www.mdpi.com mdpi.com/journal/microorganisms microorganisms@mdpi.com X@Micro\_MDPI