

Special Issue

Advances in Microbial Electrochemical Technology

Message from the Guest Editors

Microbial electrochemistry, a burgeoning field characterized by the interaction between microorganisms and electrochemical systems, has paved the way for innovative applications in energy production, environmental remediation, and chemical synthesis. Microbial fuel cells (MFCs), microbial electrolysis cells (MECs), and microbial electrosynthesis (MES) are at the forefront of this research, offering sustainable solutions for energy generation and bioproduct synthesis. These systems leverage the unique capabilities of microorganisms to catalyze a wide range of reactions, including wastewater treatment, CO₂ reduction, and the production of valuable chemicals.

Keywords: microbial fuel cells (MFCs); microbial electrolysis cells (MECs); microbial electrosynthesis (MES); electron transfer mechanisms; electrode materials and designs; microbial community engineering; in situ and in operando techniques; wastewater treatment; CO₂ and N₂ fixation; theoretical modeling; biofilm dynamics; integration with renewable energy sources; scale-up and commercialization

Guest Editors

Dr. Rusen Zou

Department of Environmental Engineering, Water Technology & Processes, Technical University of Denmark, Lyngby, Denmark

Dr. Zhiyong Zhang

School of Environment, Tsinghua University, Beijing 100084, China

Deadline for manuscript submissions

closed (15 June 2025)



Fermentation

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Impact Factor 3.3
CiteScore 5.7



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Fermentation
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
fermentation@mdpi.com

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Editor-in-Chief

Dr. Badal C. Saha
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