Special Issue

Advanced Technologies in Microbial Fuel Cells and Bioelectrochemistry

Message from the Guest Editors

The ability of microorganisms to act as biocatalysts for electrochemical energy transformation has led to microbial fuel cell technology. This technology offers a wide range of possibilities for dealing with the world's most pressing problems, such as energy storage problems, resource depletion, and environmental pollution, contributing to water–energy–food, circular economy, and climate neutrality. The most relevant MFC applications are related to the energy generation combined with wastewater treatment; generation of biohydrogen; biosensors for BOD, toxicity, and health; and others not so extended such as desalination of water, generation of acetate, ammonia, and phosphate recovery. In this sense, we are interested in articles that explore the most relevant challenges of this technology. Potential topics include but are not limited to the following: efficient materials, recyclable and biodegradable materials, new and innovative MFC applications, real application demonstrations, minimization of energy losses, coupling of MFC with other technologies, and simulation of MFC behavior in order to predict its behavior in large-scale applications.

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As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal Applied Sciences has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

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