Special Issue

Environmental Biocatalysis: From Remediation to Waste Valorization

Message from the Guest Editors

Bioremediation is an attractive bioprocess utilizing microorganisms or their enzymes for the detoxification or even mineralization of xenobiotics. The search for novel enzymatic activities that could break down persistent organic pollutants is of the outmost significance, a process called bioprospecting. Today, this process has been advanced due to the improvement in omics technologies and synthetic biology, which provide an enormous amount of data available for genome and metagenome mining, as well as the creation of efficient artificial pathways. Novel enzymatic activities may have unique characteristics for the degradation of pollutants, as well as high chemo-, regio- and stereo-selectivity for the modification of aromatic and/or halogenated compounds. Such enzymatic activities will constitute a greener alternative to organic synthesis, providing a mild process with lower energy requirements, while reducing or eliminating the formation of byproducts that might be hazardous to human health and the environment. Submissions are welcome in the form of original research papers or short reviews providing a new insight in the area of environmental biocatalysis.

Guest Editors

Prof. Dr. Evangelos Topakas

Biotechnology Laboratory, School of Chemical Engineering, National Technical University of Athens, 9 Iroon Polytech Str, Zografou Campus, 15780 Athens, Greece

Dr. Jasmina Nikodinović-Runić

Institute of Molecular Genetics and Genetic Engineering (IMGGE), University of Belgrade, 11010 Belgrade, Serbia

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

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Prof. Dr. Keith Hohn
Carl R. Ice College of Engineering, Kansas State University, Manhattan, KS, USA

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