Special Issue

Enzymes for Biomass Valorization

Message from the Guest Editors

Lignocellulosic biomass represents a valuable source of value-added molecules and a technological hub where chemical, enzymatic catalysis and biotechnology can be combined for a sustainable life. Biocatalysis shows that the design of immobilized enzymes, together with the study of new materials, provide more selective catalytic systems of lignocellulose and derived molecules into high industrial interest compounds, while advances in protein/metabolic engineering and bioinformatics have led to the development of new enzymes for new applications and efficient protocols under mild reaction. In chemical catalysis, new catalysts and support materials have been used for various reactions, with the aim of obtaining useful products. New immobilized enzymes and catalysts can act together as hybrid catalysts, allowing the regeneration of enzymatic cofactors through photocatalytic complexes and biomimetic molecules. The combination of them can be developed through a “one-pot-one-step” approach aimed at maximum utilization of biomass, in line with the biorefinery concept. This special Issue aims to bring together enzymes in biomass valorization and biotechnological expertise.

Guest Editors

Dr. Rodrigo Octávio Mendonça Alves de Souza
Laboratory of Biocatalysis and Organic Synthesis, Institute of Chemistry, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil

Prof. Dr. Ivaldo Itabaiana Junior
School of Chemistry, Federal University of Rio de Janeiro, Rio de Janeiro 21941-901, Brazil

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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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