

Special Issue

Catalysts for Structure-Functional Analysis and Enzyme Optimization

Message from the Guest Editors

The knowledge of an enzyme's catalytic mechanism can be of fundamental importance and a critical factor in the design and synthesis of compounds having biotechnological or therapeutic potential. The research is therefore multidisciplinary by its very nature and includes mechanistic enzymology, recombinant DNA (site-directed mutagenesis), as well as organic synthesis, medicinal/bioorganic chemistry, supramolecular chemistry, molecular modeling, and structural biology. Using the tools of chemo-organic synthesis, biochemistry, and computer modeling, this work aims to provide increased understanding of the chemical principles underlying mechanisms of action of natural catalysts with targeted activity. Structural models of the substrate enzyme complex are useful in order to investigate in detail the roles of the enzyme amino acid residues in its activity and the scope and limitation of substrates. We invite researchers to contribute into this Special Issue in order to share their up-to-date knowledge on structure-functional aspects of enzyme functionality and achievements in engineering enzymes with new catalytic activity.

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Deadline for manuscript submissions

closed (10 January 2022)



Catalysts

an Open Access Journal
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Impact Factor 4.0
CiteScore 7.6



mdpi.com/si/52993

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