

Special Issue

Recent Advances in Biocatalysis and Enzyme Engineering

Message from the Guest Editors

Biocatalysis refers to the utilization of enzymes, or whole cells, to catalyze a single- or multi-step chemical reaction, converting synthetic molecules or natural metabolites into value-added products. However, the industrial applications of biocatalysis are modest, perhaps in part because of the limitations of biocatalysts, such as limited enzyme availability, substrate scope, and operational stability. In recent decades, with the progress of new enzyme discovery, the engineering and evolution of proteins, machine learning for biocatalyst and route design, and metabolic pathway optimization, the limitations of biocatalysis have been greatly improved. With the rapid development of enzyme engineering and metabolic engineering, biocatalysis has been firmly established as a tool for synthesizing valuable products and performing chemically challenging reactions. This Special Issue focuses on recent advances in biocatalysis and enzyme engineering, including enzyme design and evolution, metabolic pathway optimization, and biosynthetic route discovery.

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