catalysts

IMPACT FACTOR 3.9

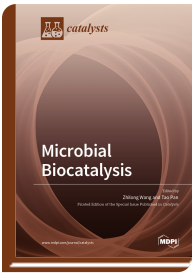
CITESCORE 6.3

Special Issue Reprint

Microbial Biocatalysis

www.mdpi.com/books/reprint/7099

Edited by
Zhilong Wang
Tao Pan



ISBN 978-3-0365-7191-1 (Hardback)
ISBN 978-3-0365-7190-4 (PDF)

Biocatalysis is a sustainable alternative for the chemical industry in manufacturing, monitoring, and waste management. Biocatalytic processes perform with isolated enzymes or whole cells as biocatalysts. Whole-cell biocatalysts offer some unique advantages of cascade reactions catalyzed by multienzymes as well as a single bioredox reaction with cofactor regeneration in a single strain. Therefore, whole-cell biocatalysts are widely applied for biosynthesis/biotransformation to produce value-added chemicals as well as the complete mineralization of organic pollutants.

Biological catalytic processing using whole-cell biocatalysts includes biocatalyst engineering, bio-reaction engineering, and downstream processing. In addition to the traditional screening of microbial strains and immobilized whole-cell biocatalysts, modern genetic engineering, metabolic engineering, and synthetic biology make tailored whole-cell biocatalysts possible. At the same time, some integrated processes have successfully been applied in the catalytic processing using living whole-cell biocatalysts, such as harnessing biocompatible chemistry to interface with the microbial metabolism as well as using various separation techniques for in situ product removal.

This reprint on “Microbial Biocatalysis” provides a comprehensive overview of the recent developments of catalyst discovery, catalyst modification, and process intensification for whole cell catalysis in fermentation, biotransformation or biodegradation processes.

MDPI

Order Your Print Copy
You can order print copies at
www.mdpi.com/books/reprint/7099

MDPI Books

Publishing Open Access Books & Series

MDPI Books offers quality open access book publishing to promote the exchange of ideas and knowledge in a globalized world. MDPI Books encompasses all the benefits of open access – high availability and visibility, as well as wide and rapid dissemination. With MDPI Books, you can complement the digital version of your work with a high quality printed counterpart.

Open Access

Your scholarly work is accessible worldwide without any restrictions. All authors retain the copyright for their work distributed under the terms of the Creative Commons Attribution License.

Author Focus

Authors and editors profit from MDPI's over two decades of experience in open access publishing, our customized personal support throughout the entire publication process, and competitive processing charges as well as unique contributor discounts on book purchases.

High Quality & Rapid Publication

MDPI ensures a thorough review for all published items and provides a fast publication procedure. State-of-the-art research and time-sensitive topics are released with a minimum amount of delay.

High Visibility

Due to our global network and well-known channel partners, we ensure maximum visibility and broad dissemination. Title information of books is sent to international indexing databases and archives, such as the Directory of Open Access Books (DOAB), and the Verzeichnis Lieferbarer Bücher (VLB).

Print on Demand and Multiple Formats

MDPI Books are available for purchase and to read online at any time. Our print-on-demand service offers a sustainable, cost-effective and fast way to publish MDPI Books printed versions.

MDPI AG
St. Alban-Anlage 66
4052 Basel
Switzerland
Tel: +41 61 683 77 34
www.mdpi.com/books
books@mdpi.com