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Titolo	Biocatalysis for green chemistry and chemical process development [[electronic resource] /] / edited by Junhua (Alex) Tao, Romas Kazlauskas
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Descrizione fisica	1 online resource (493 p.)
Altri autori (Persone)	TaoJunhua KazlauskasR. J <1956-> (Romas J.)
Disciplina	660.6/3
Soggetti	Environmental chemistry - Industrial applications Enzymes - Biotechnology Green technology Química verda Enzims Biocatàlisi Aplicacions industrials Ecotecnologia Llibres electrònics
Lingua di pubblicazione	Inglese
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Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Overview of biotechnology tools for green synthesis: enzymes, cells and their tunability by engineering -- How green can the industry become with biotechnology -- Emerging enzymes and their synthetic applications -- Reaction efficiencies and green chemistry metrics of biotransformations -- Application and case studies - pharmaceuticals and fine chemicals -- Biocatalytic routes to chiral intermediates for development of drugs -- Transglutaminase for protein drug modification: pegylation and beyond -- Microbial production of plant-

derived pharmaceutical natural products through metabolic engineering: artemisinin and beyond -- Toward greener therapeutic proteins -- Application and case studies ? flavor & fragrance, agrochemicals and fine chemicals -- Opportunities for biocatalysis in the flavor, fragrance and cosmetic industry -- Application of biocatalysis in the agrochemical industry -- Green production of fine chemicals by isolated enzymes -- Whole cell production of fine chemicals and intermediates -- Application and case studies ? polymers and renewable chemicals -- Green chemistry for the production of biodegradable, biorenewable, biocompatible polymers -- Enzymatic degradation of lignocellulosic biomass -- Bioconversion of renewables-plant oils -- Microbial bioprocesses for industrial scale chemical production.

Sommario/riassunto

This book describes recent progress in enzyme-driven green syntheses of industrially important molecules. The first three introductory chapters overview recent technological advances in enzymes and cell-based transformations, and green chemistry metrics for synthetic efficiency. The remaining chapters are directed to case studies in biotechnological production of pharmaceuticals (small molecules, natural products and biologics), flavors, fragrance and cosmetics, fine chemicals, value-added chemicals from glucose and biomass, and polymeric materials. The book is aimed to facilitate the indust