Record Nr.	UNINA9910830413303321
Titolo	Practical methods for biocatalysis and biotransformations . 3 / / edited by John Whittall, Manchester Interdisciplinary Biocentre (MIB), The University of Manchester, UK, Peter W. Sutton, GlaxoSmithKline Research and Development Limited, UK, Wolfgang Kroutil, Department of Chemistry, Organic and Bioorganic Chemistry, University of Graz, Austria
Pubbl/distr/stampa	Chichester, West Sussex : , : John Wiley & Sons, Limited, , 2016
ISBN	1-5231-1471-1 1-118-69629-8 1-118-69628-X
Edizione	[3.]
Descrizione fisica	1 online resource (319 p.)
Disciplina	660.6/34
Soggetti	Enzymes - Biotechnology Biocatalysis Biotransformation (Metabolism) Organic compounds - Synthesis
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Practical Methods for Biocatalysis and Biotransformations 3; Contents; List of Contributors; Abbreviations; Chapter 1: Considerations for the Application of Process Technologies in Laboratory- and Pilot-Scale Biocatalysis for Chemical Synthesis; 1.1 Introduction; 1.2 Process Intensification and Proposed Scale-Up Concept; 1.3 Enabling Technologies; 1.3.1 Biocatalyst Immobilization; 1.3.1.1 General Considerations for Implementation; 1.3.1.2 Carrier-Bound Supported Enzymes; 1.3.1.2.1 Adsorption; Considerations for Implementation; 1.3.1.2.2 Covalent Binding; Considerations for Implementation 1.3.1.2.3 Ionic BindingConsiderations for Implementation; 1.3.1.3 Carrier-Free Immobilization; 1.3.1.3.1 Cross-Linked Enzyme Aggregates (CLEAsTM); Considerations for Implementation; 1.3.2 Reactor Options; 1.3.2.1 Ideal Reactors; 1.3.2.2 Modes of Operation; 1.3.2.3 Well-Mixed Reactor Hydrodynamics; 1.3.2.3.1 Stirred Tanks;

1.

Considerations for Implementation: 1.3.2.3.2 Batch Stirred-Tank Reactors (BSTRs); Considerations for Implementation; 1.3.2.3.3 Continuous Stirred-Tank Reactors (CSTRs): Considerations for Implementation; 1.3.2.3.4 Alternative Well-Mixed Reactors Continuous Fluidized-Bed Reactors (CFBRs)Considerations for Implementation; Continuous Packed-Bed Reactors (CPBRs); Considerations for Implementation: Continuous Expanded-Bed Reactors (CEBRs); Considerations for Implementation; 1.3.2.3.5 Membrane Bioreactors (MBRs): Considerations for Implementation: 1.4 Enhancing Technologies; 1.4.1 In Situ Product Removal (ISPR); 1.4.1.1 Considerations for Implementation; 1.4.1.2 ISPR by Adsorption on Resins; 1.4.1.2.1 Considerations for Implementation; 1.4.1.3 ISPR Using Expanded-Bed Adsorption (EBA); 1.4.1.3.1 Considerations for Implementation 1.4.1.4 ISPR by Crystallization 1.4.1.4.1 Considerations for Implementation; 1.4.2 Substrate Feeding Strategies; 1.4.2.1 Fed-Batch Operation; 1.4.2.1.1 Considerations for Implementation; 1.4.3 Non-Conventional Media; 1.4.3.1 Single Non-Conventional Liquid Phase Systems; 1.4.3.1.1 Considerations for Implementation; 1.4.3.2 Aqueous-Organic Two-Liquid Phase Systems; 1.4.3.2.1 Considerations for Implementation; 1.4.3.3 Aqueous-Ionic Liquid Two-Liquid Phase Systems: 1.4.3.3.1 Considerations for Implementation: 1.4.4 Oxygen Supply Strategies; 1.4.4.1 Surface Aeration 1.4.4.1.1 Considerations for Implementation1.4.4.2 Sparged Aeration; 1.4.4.2.1 Considerations for Implementation; 1.4.4.3 Bubble-Column Reactors: 1.4.4.3.1 Considerations for Implementation: 1.5 Conclusion: References; Chapter 2: Cytochrome P450 (CYP) Progress in Biocatalysis

for Synthetic Organic Chemistry; 2.1 Introduction; 2.2 CYP Development; 2.3 Recent Developments; 2.4 Conclusion; References; Chapter 3: Use of Hydrolases and Related Enzymes for Synthesis; 3.1 Continuous-Flow Reactor-Based Enzymatic Synthesis of Phosphorylated Compounds on a Large Scale; 3.1.1 Materials and Equipment 3.1.2 Immobilization of Acid Phosphatase on Immobeads