

1. Record Nr.	UNINA9910457247803321
Titolo	Bioprocesses for value-added products from renewable resources [[electronic resource]] : new technologies and applications // edited by Shang-Tian Yang
Pubbl/distr/stampa	Amsterdam ; ; Boston, MA, : Elsevier, 2006
ISBN	1-280-72921-X 9786610729210 0-08-046671-0
Descrizione fisica	1 online resource (685 p.)
Altri autori (Persone)	YangShang-Tian
Disciplina	660.6/3
Soggetti	Biochemical engineering Biotechnological process control Renewable natural resources Electronic books.
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	Front Cover; Preface; 2. Applications of genomic and proteomic analyses; 3. Bioprocess analysis and optimization guided by genomic and proteomic analyses: The example of microbial production of 1,3-propanediol; 4. Concluding remarks and outlook; References; 2. Directed evolution tools for diversity generation; 3. Applications of directed evolution tools; 4. Alternatives to directed evolution; 5. Conclusion; Acknowledgements; References; 2. Applications and some examples; 3. Metabolic engineering strategies and limitations; 4. Metabolic engineering methodologies and tools 5. Challenges and new approaches for metabolic engineering 6. Summary; References; 2. Amylase and cellulase classification and mechanisms; 3. Conclusions; Acknowledgment; References; 2. Various types of bioreactors; 3. Effects of process parameters on biological performances; 4. Industrial applications of bioreactors; 5. Trends in bioreactor engineering; Acknowledgments; References; 3. Microfiltration and ultrafiltration processes; 4. Membrane fouling; 5. Applications in biotechnology industries; 5.3. Other applications; 6.

Outlook; References; 2. Bacteria; 3. Yeast
4. Fermentation products from bacteria and yeasts 5. Fermentation processes; 6. Conclusion and outlook; References; 2. Fungal cells as biofactories; 3. Hyphal growth and protein secretion; 4. Fungal growth in submerged culture; 5. Effects of cultivation conditions; 6. Effects of morphology on production and secretion; 7. Immobilized fungal cells; 8. Future of filamentous fungal cells as biofactories; References; 2. Production of macromolecules; 3. Production of small molecules; Acknowledgements; References; 2. Modes of micro-algal cultivation; 3. Thraustochytrids
4. High-value products from thraustochytrids 5. Other applications of thraustochytrids; 6. Utilization of renewable resources; 7. Safety issues; 8. Conclusions; 7 References; 2. Enzymatic treatment of biomass components; 3. Further processing of simple renewable molecules for value-added products; 4. New trends in enzymatic bioprocessing; 5. Summary; References; 3. Chiral molecules from hydrolase; 4. Chiral molecules from enzymes requiring cofactors; 5. Improving enantioselectivity by reaction engineering; 6. Improving chiral synthesis by directed evolution and metabolic engineering
7. Conclusions References; 2. Immobilization techniques; 3. Effects of cell immobilization; 4. Immobilized cell bioreactors; 5. Applications of immobilized cell technology; 6. Conclusion; References; 3. New process development; 4. Water-in-oil cultivation technology; 5. PH-sensitive surfactants for water-in-oil cultivation; 6. Conclusions; References; 2. Carboxylic acid fermentation; 3. Integrated fermentation-separation processes; 4. Summary and outlook; References; 3. Fungal metabolites; 4. Pathway manipulation; 5. Conclusions; References; 3. Advantages and unsolved problems; 4. SSF reactors
5. Conclusions

Sommario/riassunto

Bioprocessing for Value-Added Products from Renewable Resources provides a timely review of new and unconventional techniques to manufacture high-value products based on simple biological material. The current source for most chemicals and materials is petroleum. Anticipation of its limited future availability, along with record high prices has spurred interest in alternatives that will be both sustainable and cost-effective. In a very structured way this book begins by describing the modern technologies that form the basis for creating a bio-based industry. Next it lists the various
