

Manual of Industrial Microbiology and Biotechnology, 3rd Edition

Author: Editors in Chief: Richard H. Baltz, Julian E. Davies, Arnold L. Demain

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Editors in Chief

Richard H. Baltz, CognoGen Biotechnology Consulting

Julian E. Davies, University of British Columbia

Arnold L. Demain, Charles A. Dana Research Institute (R.I.S.E.), Drew University

About the Book

The third edition of the acclaimed *Manual of Industrial Microbiology and Biotechnology* reviews the newest techniques, approaches, and options in the use of microorganisms and other cell culture systems for the manufacture of pharmaceuticals, industrial enzymes and proteins, foods and beverages, fuels and fine chemicals, and other products. Readers will find a rich array of methods and discussions of productive microbial processes, with means for improving the organism, the process, and the product. Cell cultures based on both prokaryotic and eukaryotic organisms are examined, including thorough coverage of mammalian cell culture. Genetics, strain improvement, genetic engineering, and bioprospecting are discussed with regard to a wide variety of organisms and processes.

Focusing on the latest advances and findings that have brought us to the current state of the art and science, this edition features an entire new section devoted to the microbial production of biofuels and fine chemicals, as well as a stronger emphasis on mammalian cell culture methods. Many chapters review the latest genomic and other “omics” approaches. The book covers new methods that enhance the capacity of microbes used for a wide range of purposes, from winemaking to pharmaceuticals to bioremediation, at volumes from micro- to industrial scale.

The editors have enlisted a multidisciplinary group of experts to serve as authors, including microbial ecologists, physiologists, geneticists, biochemists, molecular biologists, and biochemical engineers. Their contributions are based not only on a thorough evaluation of the primary literature, but also on the authors’ own invaluable firsthand experience in industrial microbiology and biotechnology. Readers will find significant new insights into the development of industrial microbiology and biotechnology processes and products.

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