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Fermentation; 4 The Future of Suspension Culture; 4.1 New Frontiers; 4.2 Yet "Uncultured" Cells and Organisms?; 5 Economic and Market Considerations; 5.1 The Pharmaceutical Market
5.2 Personal Care Products5.3 Chemicals, Industrial and Technical Enzymes; 5.4 Food, Dietary Supplements (Functional Food, Nutraceuticals), and Feed Products; 6 Conclusions; References; Part I: Suspension Culture of Bacteria, Yeasts, and Filamentous Fungi; 1 Bacterial Suspension Cultures; 1.1 Introduction; 1.2 Organisms, Cells, and their Products; 1.2.1 Bacteria as Production Platform for Various Products; 1.2.2 Historical Outline for Escherichia coli; 1.2.3 Industrial Aspects of Bacterial Expression Systems; 1.3 Bioprocess Design Aspects for Recombinant Products
1.3.1 Bacterial Cultivation Processes1.3.2 Gram Negative Cell Factory: Cellular Compartments and Transport across Membranes; 1.3.3 Industrial Strategies: Quality, Folding State, and Location of Recombinant Protein Products; 1.3.4 Approaches towards Bioprocess Design, Optimization, and Manufacturing; 1.3.5 Bacterial Bioprocess Design; 1.3.5.1 Technical and Physiological Constraints for Bacterial Bioprocess Design; 1.3.5.2 Media Design; 1.3.5.3 Product Titer is Determined by the Biomass Concentration and the Specific Productivity qp; 1.3.6 Industrial Production Strategy by Two-Step Cultivation
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1.4.6 Steaming in Place

Sommario/riassunto

The submersed cultivation of organisms in sterile containments or fermenters has become the standard manufacturing procedure, and will remain the gold standard for some time to come. This book thus addresses submersed cell culture and fermentation and its importance for the manufacturing industry. It goes beyond expression systems and integrally investigates all those factors relevant for manufacturing using suspension cultures. In so doing, the contributions cover all industrial cultivation methods in a comprehensive and comparative manner, with most of the authors coming from the industry i