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Nota di contenuto	Chapter 1. Strain design and optimization methods for sustainable production -- Chapter 2. Designer and minimal cells for production of biomolecules -- Chapter 3. Recent advances in downstream processing deployed in the treatment of pharmaceutical effluents -- Chapter 4. Microbial conversion of waste to biomolecules -- Chapter 5. Biosensor for detecting biomolecules -- Chapter 6. Artificial Intelligence Assisted Production of Biomolecules -- Chapter 7. Escherichia coli cell factory for synthesis of biomolecules -- Chapter 8. Bacillus subtilis cell factory -- Chapter 9. Pseudomonas putida cell factory -- Chapter 10. Cyanobacteria for marine based biomolecules -- Chapter 11. Yeast cell factory for biomolecules -- Chapter 12. Plant cell factory for biomolecules -- Chapter 13. Genetic manipulation of crop for enhanced food quality and nutrition towards sustainable production -- Chapter 14. Insect cell factory for production ofbiomolecules -- Chapter 15. Mammalian cell factor for biomolecules -- Chapter 16. Genome editing guided production of biomolecules -- Chapter 17. Cell free protein synthesis system for sustainable production of biofuels --

Chapter 18. Challenges and opportunities in biomanufacturing.

Sommario/riassunto

This book elucidates the sustainable production of commercially important biomolecules in medicines, food, and beverage processing, through biological systems, including microorganisms, animal cells, plant cells, tissues, enzymes, and in vitro. It discusses promising technologies for the manipulation of cells including, genetic engineering, synthetic biology, genome editing, and metabolic engineering. The initial chapters of the book introduce topics on biomanufacturing, circular economy, strain design and improvement, upstream and downstream processing. The subsequent chapters cover artificial intelligence-assisted production, designer cell factories, biosensors for monitoring biomolecules, different cells factories, biosynthetic pathways, and genome editing approaches for scale-up biomanufacturing. Lastly, the book discusses the opportunities and challenges of implementing biological systems for the production of biomolecules. This book is a valuable source for students, researchers, scientists, clinicians, stakeholders, policymakers, and practitioners to understand biomanufacturing for the sustainable production of biomolecules.