

Biotechnology Handbook

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Biotechnology is a field of applied biology that involves the use of living organisms and bioprocesses in engineering, technology, medicine and other fields requiring bio products. Biotechnology also utilizes these products for manufacturing purpose. Modern use of similar terms includes genetic engineering as well as cell and tissue culture technologies. Biotechnology draws on the pure biological sciences and in many instances is also dependent on knowledge and methods from outside the sphere of biology. Conversely, modern biological sciences are intimately entwined and dependent on the methods developed through biotechnology and what is commonly thought of as the life sciences industry. It has a major application in modern brewing technology which includes the production of whisky, traditional fermented soybean foods bacterial biomass, cheese starters, cheese technology, L glutamic acid fermentation etc. Biotechnology and cell molecular biology have developed and emerged in to a major discipline during last two decades. Biotechnology is also used to recycle, treat waste, microbial treatment and utilization a waste. The growing global demand for biotechnology products, India has rich biodiversity that drives its clinical trials industry and forms a strong base for pharmaceutical research. In recent years, the worldwide biotechnology based products market has grown at an annual average rate of 15%.

This book majorly deals with introduction to basic biotechnology, downstream processing in biotechnology, modern brewing technology, industrial chemicals, biochemical and fuels, microbial flavours and fragrances, biodegradation of non cellulosic wastes for environmental conservation and fuel production, landfills for treatment of solid wastes etc. This book also consists of addresses of machinery suppliers, addresses of chemical suppliers, list of universities, conducting Biotechnology courses in the directory section.

This is a unique book, concise, up to date resource offering an innovative, adoptive and valuable presentation of the subject. It covers all important biotechnological topics of industrial and academic interests. This book will be very use full for industry people, students, and libraries and for those who want to venture in to manufacturing of biotechnological products.

1. Introduction to basic bio-technology
2. Downstream processing in bio-technology
3. Modern Brewing Technology
 1. Whisky
 2. Traditional fermented soybean foods
 3. Bacterial Biomass
 4. Cheese starters
 5. Cheese Technology

6. L-Glutamic acid fermentation
7. Lyine
8. Tryptophan
9. Aspartic Acid
10. Threonine
11. 5-Guanosine mono phosphate
12. Phenylalanine
4. Industrial Chemicals, Biochemical and Fuels
1. Citric Acid
2. Gluconic and Itaconic Acids
3. Acetic Acid
4. Propionic and Butyric Acids
5. Lactic Acid
6. Starch Conversion Process
7. Proteolytic Enzymes
8. Hydrolytic Enzymes
9. Glucose Isomerase
- 10 Ethanol
11. Acetone and Butanol
12. 2,3-Butanediol
13. Microbial Insecticides
14. Microbial Flavours and Fragrances
15. Fats and Oils
16. Microbial Polysaccharides
17. Enzymes in Food Technology
18. Production of Antibiotics
19. Microbial Gums
20. Tea Fermentation
21. Microbial Treatment and utilization a waste
22. Coffee Fermentation
5. Biogas and waste treatment
1. Cold condition biogas
2. Biogas for organic wastes diluted with seawater
3. Optimization of bioconversion of solids and liquid residues
4. Biodegradation of non-cellulosic wastes for environmental conservation and fuel production
5. Landfills for treatment of solid wastes
6. Composting
6. Glossary of Terms
7. Directory section
7. Addresses of Machinery suppliers
8. Addresses of Chemical suppliers
8. List of Universities, conducting 'Bio-Technology' Courses

About NIIR

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