Conference proceedings | © 2017

Applications of Biotechnology for Sustainable Development

Editors: Kunal Mukhopadhyay, Ashish Sachan, Manish Kumar

Presents the latest research in the field of biotechnology

Provides insights into various technologies and protocols used in biotechnology

Collates research from diverse areas

Includes supplementary material: sn.pub/extras

Sections

Table of contents (23 papers)

Search within book

← Previous Page 1 of 2 Next →

← Previous Page 1 of 2 Next →

Back to top ↑

About this book

This book discusses different bioprocesses to produce value-added compounds, the science behind their production, the economics of their introduction to the marketplace, their environmental impacts, and their implications for world agriculture. It also provides insights into various technologies and protocols used.

The major strength of biotechnology is its multidisciplinary nature and broad range of scientific approaches. Recent advances in various

biotechnological fields are facilitating the production of fine chemicals, recombinant proteins, biomaterials and pharmaceuticals. Biotechnology plays an important role, especially in the fields of food production, renewable raw materials and energy, pollution prevention and bioremediation. Biotechnology's greatest contribution is in agriculture – in making crops more efficient. Resource recovery, recycling and hazardous-waste disposal are other environmentally beneficial facets of biotechnology. Thus, biotechnology is a pivotal tool for sustainable development, which has become a priority for the world's policy makers.

The concept of sustainable development is based on the goal of increasing the basic standard of living of the world's growing population, without depleting finite natural resources and degrading the environment. Emerging biotechnologies offer novel approaches with the potential to achieve the goal of sustainability and striking a balance between developmental needs and environmental conservation.

Back to top ↑

Keywords

Enzymes **Biotransformation**

recombinant DNA **Plant Tissue Culture**

Biodiversity **sustainable development**

biotechnology

Back to top ↑

Editors and Affiliations

Department of Bio-Engineering, Birla Institute of Technology, Mesra, Ranchi, India

Kunal Mukhopadhyay, Ashish Sachan, Manish Kumar

Back to top ↑

About the editors

Dr. Kunal Mukhopadhyay is a professor at the Department of Bio-Engineering, Birla Institute of Technology in Jharkhand, India. He obtained his Bachelor's degree from the Presidency College, Kolkata and M.Sc. and Ph.D degrees from the University of Calcutta, India. He was selected for the Rockefeller Foundation Postdoctoral Fellowship in Rice Biotechnology Program and pursued his research at the University of Georgia, USA. He has worked extensively on wheat crop improvement. Dr. Mukhopadhyay has also worked in other areas of plant biotechnology, particularly genomics-driven metabolomics of medicinal plants like Guggul and Tulsi for the identification of key metabolites and regulation of genes involved in Guggulsterone and phenylpropanoid biosynthesis. He has completed seven research projects, published more than 30 research articles and contributed to three book chapters.

Dr. Ashish Sachan is an assistant professor at the Department of Bio-Engineering, Birla Institute of Technology, Jharkhand, India. He obtained his M.Tech. and Ph.D degrees from the Indian Institute of Technology Kharagpur (IIT Kharagpur), India. His main area of research is exploring the

microorganisms for degradation of pollutants and production of value-added products. He is actively involved in research and has published more than 20 papers in international and national journals such as FUEL, Renewable & Sustainable Energy Reviews, Applied Microbiology & Biotechnology, Journals of Industrial Microbiology and Biotechnology, Annals of Microbiology and Letters in Microbiology. He is a life member of the Association of Microbiologists of India and the Biotech Research Society of India (BRSI).

Dr. Manish Kumar is an assistant professor at the Department of Bio-Engineering, Birla Institute of Technology, Jharkhand, India. He obtained his M.Sc. and Ph.D degrees from Ranchi University. His main area of research is exploring the environment for degradation of pollutants and instrumentation. He is actively involved in research and has published more than 25 papers in international and national journals such as Planta, Plant Cell Reports, PLoS ONE and Gene. He is a life member of the Association of Microbiologists of India and the Indian Society for Technical Education.

Back to top ↑

Bibliographic Information

Book Title	Editors	DOI
Applications of Biotechnology for Sustainable Development	Kunal Mukhopadhyay, Ashish Sachan, Manish Kumar	https://doi.org/10.1007/978-981-10-5538-6

Publisher	eBook Packages	Copyright Information
Springer Singapore	Biomedical and Life Sciences, Biomedical and Life Sciences (R0)	Springer Nature Singapore Pte Ltd. 2017

Hardcover ISBN
978-981-10-5537-9
Published: 07 October 2017

Softcover ISBN
978-981-13-5420-5
Published: 12 December 2018

eBook ISBN
978-981-10-5538-6
Published: 06 October 2017

Edition Number
1

Number of Pages
XIII, 208

Number of Illustrations
12 b/w illustrations, 59 illustrations in colour

Topics
Biotechnology, Sustainability, Environmental Engineering/Biotechnology, Plant Biotechnology

Back to top ↑