



## Environmental Biotechnology: Basic Concepts and Applications, 2/e

Indu Shekhar Thakur

2011    534 pp    Paperback    ISBN: 9789380578477    Price: 495.00

### About the Book

Biotechnology impinges on everyone's lives. It is one of the major technologies of the twenty-first century with wide-ranging, multidisciplinary activities ranging from small entities of life to the application, and production of goods. Environmental biotechnology is a huge and fast growing field with increasing relevance for a sustainable development through protection of environment to production of biomaterials. It continues to revolutionize the understanding of basic life sustaining processes in the environment, identification and exploitation of the molecules, and its use to provide clean technologies and to deal with environmental problems.

This book provides an overview of basic processes of the environment, perturbations in the environment due to natural and human activities and use of biotechnological principles for remediation for sustainable development of the environment.

### Salient Features

Salient Features:

- ▶ Divided into 4 parts, Part-I deals with the components of the environment, Part-II covers basic degradation methods of natural and xenobiotic compounds, Part-III is on production of valuable products, and Part-IV is on bioconversion and recovery of products.
- ▶ Discusses all the types of pollution like air, water, soil, indoor, greenhouse effect, acid rain, particulate, solid waste, heavy metal, industrial toxicants and so on.
- ▶ Bioremediation and other remediation measures like phytoremediation, carbon sequestration etc. have been discussed in detail. Both in situ and ex situ remediation technologies have been discussed.
- ▶ All the natural processes and the environmental control measures have been well explained using schematic and flow diagrams.

### Table of Contents

- ▶ Preface
- ▶ Environmental Biotechnology
- ▶ Environment and ecosystem processes
- ▶ Environmental resources-air, water and soil
- ▶ Environmental perturbation-air, water and soil pollution
- ▶ Global environmental problems
- ▶ Structural and functional dynamics of microbial life
- ▶ Air pollution and its control
- ▶ Water pollution and its control
- ▶ Solid waste and soil pollution Management
- ▶ Biodegradation and Bioconversion of Natural Compounds
- ▶ Biodegradation and Bioconversion of Xenobiotic Compounds
- ▶ Bioabsorption of Metals
- ▶ Application of Biotechnology in Environmental Management
- ▶ Industrial Problems and their Remedial Mechanism
- ▶ Index

### About the Author

**Indu Shekhar Thakur** :- Indu Shekhar Thakur, is currently working as a Professor in the School of Environmental Sciences of Jawaharlal Nehru University, New Delhi, India. He obtained Postgraduate degree from the School of Life Sciences, Jawaharlal Nehru University, New Delhi, and Ph.D. degree from School of Environmental Sciences of the same University. He joined the Department of Environmental Sciences of G.B. Pant University of Agriculture and Technology, Pantnagar, Uttaranchal, India, as Assistant Professor (1987-1998) and Associate Professor (1998-

2003). During the same period he joined Gesellschaft für Biotechnologische Forschung mbH, (1992-1994) Braunschweig, Germany, as Postdoctoral BATI scientist, and developed biotechnological methods for degradation and bioremediation of chlorinated compounds in the environment. He also generated strain-specific monoclonal antibody probes against dioxin-degrading bacteria, *Sphingomonas* sp. RW1, and applied it for detection of bacterial strain for bioremediation of dioxin. Dr. Thakur is teaching different courses related to Environmental Sciences since last twenty three years. He published more than sixty research papers in peer reviewed International Journals and twenty in National Journals. In addition he also presented more than ninety papers in scientific conferences and project committee meetings. He deposited seventeen gene sequences in GenBank.