



Bioremediation: Current Research and Applications

Ashok K Rathoure

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About the Book

Bioremediation is one of the most promising technological approaches to the problem of hazardous waste, which relies on microorganisms such as bacteria or fungi to transform hazardous chemicals into less toxic or nontoxic substances. Such biological transformation is more attractive than direct chemical or physical treatment. Microorganisms directly degrade contaminants rather than merely transferring them from one medium to another, employ metabolic degradation pathways and can be used in situ to minimize disturbance of the cleanup site. Hence, microorganisms can be effective, economical and non-disruptive tools for eliminating hazardous chemicals. There is no doubt that bioremediation is in the process of paving a way to greater pastures. The book aims to provide relevant theoretical and practical frameworks and the latest empirical research findings in this area, along with case studies. It is written for students, academicians and industry professionals who want to improve their understanding of the strategic role of bioremediation at different levels of the bioremediation research and knowledge, that is, heavy metal pollution, toxicity, remediation methods and strategies to manage the waste in industries, which are a global concern.

Salient Features

The book contains 19 chapters, presented under 4 themes

- Bioremediation of Inorganic Contaminants
- Bioremediation of Organic Contaminants
- Bioremediation of Textile and Tannery Effluents
- Environmental Sustainability.

It presents the most recent theoretical and practical information on the use of various bioremediation techniques for the removal of many of the world's most serious and common environmental contaminants. The case studies presented in the book will enhance the understanding of real-world applications of bioremediation.

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About the Author

Ashok K Rathoure :- Dr. Ashok K Rathoure, with a doctoral degree in Bioremediation, shares his knowledge and experience in the field of Environment Impact Assessment (EIA) with a doctoral degree in Bioremediation for M/s Eco Group, Surat as GM- Consultancy. Previously, he was associated with M/s Vardan environet Gurgaon and En-vision Group Surat (En-vision Environmental Services and En-vision Enviro Engineers Pvt. Ltd.) for EIA studies; Himachal Institute of Life Sciences Paonta and Beehive College of Advanced Studies Dehradun for teaching to Biotechnology, Microbiology, Biochemistry and other biosciences subjects. He has more than 9 years of working experience in various domains.

Other than double master and doctorate degrees, Dr. Rathoure has received PG Diploma in Human Resource Management (HRM) from Aligappa University Karaikudi Tamil Nadu. His area of research is environmental biotechnology and publication includes 70 full length research papers in international and national journals of repute, 26 books and many book chapters. He had reviewed more than 75 research manuscript for many international journals. He is member of APCBEES (Hong Kong), IACSIT (Singapore), EFB (Spain), Society for Conservation Biology (Washington) and founder member of Scientific Planet Society (Dehradun). He has supervised 24 research scholars (UG, PG and Diploma). Dr. Rathoure is also associated as Editor-in-Chief for Octa Journal of Environmental Research, Managing Editor for Octa Journal of Biosciences and Executive Editor for Scientific India Magazine.