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Life Sciences : Microbial Ecology

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Bioremediation and Biotechnology

Sustainable Approaches to Pollution Degradation

- Latest research on environmental toxicity
- Novel solutions to current bioremediation challenges
- Contributed by an international panel of field scientists and lab researchers

Toxic substances threatens aquatic and terrestrial ecosystems and ultimately human health. The book is a thoughtful effort in bringing forth the role of biotechnology for bioremediation and restoration of the ecosystems degraded by toxic and heavy metal pollution. The introductory chapters of the book deal with the understanding of the issues concerned with the pollution caused by toxic elements and heavy metals and their impacts on the different ecosystems followed by the techniques involved in monitoring of the pollution. These techniques include use of bio-indicators as well as modern techniques for the assessment and monitoring of toxicants in the environment. Detailed chapters discussing the role of microbial biota, aquatic plants, terrestrial plants to enhance the accumulation efficiency of these toxic and heavy metals are followed by remediation techniques involving myco-remediation, bio-pesticides, bio-fertilizers, phyto-remediation and rhizo-filtration. A sizable portion of the book has been dedicated to the advanced bio-remediation techniques which are finding their way from the laboratory to the field for revival of the degraded ecosystems. These involve bio-films, micro-algae, genetically modified plants and filter feeders. Furthermore, the book is a detailed comprehensive account for the treatment technologies from unsustainable to sustainable. We believe academicians, researchers and students will find this book informative as a complete reference for biotechnological intervention for sustainable treatment of pollution.

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