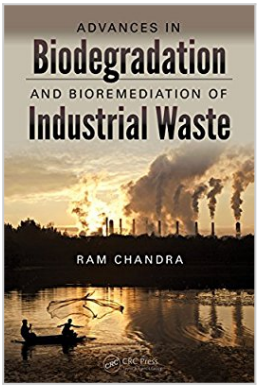

Advances in Biodegradation and Bioremediation of Industrial Waste

From CRC Press

Advances in Biodegradation and Bioremediation of Industrial Waste From CRC Press

Addresses a Global Challenge to Sustainable Development

Advances in Biodegradation and Bioremediation of Industrial Waste examines and compiles the latest information on the industrial waste biodegradation process and provides a comprehensive review. Dedicated to reducing pollutants generated by agriculturally contaminated soil, and plastic waste from various industries, this text is a book that begs the question: Is a pollution-free environment possible? The book combines with current available data with the expert knowledge of specialists from around the world to evaluate various aspects of environmental microbiology and biotechnology. It emphasizes the role of different bioreactors for the treatment of complex industrial waste and provides specific chapters on bioreactors and membrane process integrated with biodegradation process. It also places special emphasis on phytoremediation and the role of wetland plant rhizosphere bacterial ecology and the bioremediation of complex industrial wastewater. The authors address the microbiological, biochemical, and molecular aspects of biodegradation and bioremediation which cover numerous topics, including microbial genomics and proteomics for the bioremediation of industrial waste.

This text contains 14 chapters and covers:

- Bioprocess engineering and mathematical modelling with a focus on environmental engineering
- The roles of siderophores and the rhizosphere bacterial community for phytoremediation of heavy metals
- Current advances in phytoremediation, especially as it relates to the mechanism of phytoremediation of soil polluted with heavy metals
- Microbial degradation of aromatic compounds and pesticides: Challenges and

solution
- Bioremediation of hydrocarbon contaminated wastewater of refinery plants
- The role of biosurfactants for bioremediation and biodegradation of various pollutants discharged from industrial waste as they are tools of biotechnology
- The role of potential microbial enzymatic processes for bioremediation of industrial waste
- The latest knowledge regarding the biodegradation of tannery and textile waste

A resource for students interested in the field of environment, microbiology, industrial engineering, biotechnology, botany, and agricultural sciences, **Advances in Biodegradation and Bioremediation of Industrial Waste** provides recent knowledge and approaches on the bioremediation of complex industrial waste.

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Advances in Biodegradation and Bioremediation of Industrial Waste From CRC Press Bibliography

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Editorial Review

Review

"The book covers the broad environmental pollution control approach such as bioremediation, biodegradation of industrial wastes, biomolecules production from the industrial wastes, bioprocess engineering, phytoremediation etc. So this book will be highly useful for the finding out of the solutions for many environmental related issues."
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?Prof. T. Satyanarayana, University of Delhi South Campus, India

About the Author

Ram Chandra is a professor and founder head of the Department of Environmental Microbiology at Babasaheb Bhimrao Ambedkar Central University in Lucknow, India. He obtained his BSc (Hons) in 1984 and MSc in 1987 from Banaras Hindu University in Uttar Pradesh, India. Subsequently, he was awarded a PhD in 1994. He has accomplished leading work on bacterial degradation of lignin from pulp paper mill waste and molasses melanoidin from distillery waste. Consequently, he has also published more than 90 original research articles in national and international peer-reviewed journals. In addition, he has published 18 book chapters as well as one book on distillery wastewater pollution and bioremediation.

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