

MICROBIOLOGY FOR MINERALS, METALS, MATERIALS AND THE ENVIRONMENT



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Microbiology For Minerals Metals Materials And The Environment

Christon J. Hurst, Ronald L. Crawford

Microbiology For Minerals Metals Materials And The Environment:

Microbiology for Minerals, Metals, Materials and the Environment Abhilash,B. D. Pandey,K. A. Natarajan (Prof.),2015 **Microbiology for Minerals, Metals, Materials and the Environment** Abhilash,B. D. Pandey,K. A. Natarajan,2015-02-25 This book disseminates the interdisciplinary relationship some explored and some yet to be among microbiology and the inorganic world It studies the genesis of microbiology in the metal world the various physiological aspects behind their existence in such a turgid environment their applications in the mineral sector metal extraction and material synthesis A major part of this book emphasizes the importance of microbes in environmental remediation in the mining industries from core deep ground sample processing to utilization of discarded raw materials and synthesizing products [Biohydrometallurgical Recycling of Metals from Industrial Wastes](#) Hong Hocheng,Mital Chakankar,Umesh Jadhav,Swati Gurme,2025-03-13 Although many available metal recycling methods are simple and fast they are also expensive and cause environmental pollution Biohydrometallurgical processing of metals offers an alternative to overcome these issues as the use of biological means not only helps to conserve dwindling ore resources but also fulfills the unambiguous need to extract metals in nonpolluting low energy and low cost way This book covers biohydrometallurgy and its application in the recovery of metals from secondary sources like wastes Fully updated for a new edition it provides readers with a comprehensive overview of different wastes for metal recovery and biological treatment methods that are both environmentally friendly and economically viable Offers a detailed explanation about generation of different metals containing industrial waste Explains traditional and new biological methods of recycling Reflects research advances across different industrial waste sources including electric vehicle batteries and LCDs from computers and other devices Focuses on each waste type and explores in detail the biohydrometallurgical recovery of metals from that waste Discusses fundamental microbial studies in bioleaching and updates about the use of emerging technologies and integrated techniques with different methods in combination for metal recovery Features a new chapter on techniques for metal extraction from bioleachate This book serves as an essential resource for researchers and professional engineers working in chemical and environmental engineering and biotechnology [Handbook of Metal-Microbe Interactions and Bioremediation](#) Surajit Das,Hirak Ranjan Dash,2017-04-07 Around the World metal pollution is a major problem Conventional practices of toxic metal removal can be ineffective and or expensive delaying and exacerbating the crisis Those communities dealing with contamination must be aware of the fundamentals advances of microbe mediated metal removal practices because these methods can be easily used and require less remedial intervention This book describes innovations and efficient applications for metal bioremediation for environments polluted by metal contaminates [Manual of Environmental Microbiology](#) Christon J. Hurst,Ronald L. Crawford,2002 The new second edition of this essential manual summarizes the information and knowledge of environmental microbiology in a single source It details the natural fate of microorganisms in the environment as well as the intentional

attempts to eliminate from the environment microorganisms that are pathogenic to humans or to plants and animals. The basic principles of environmental microbiology and general analytical methodologies common across the range of the environments covered are presented first. The core sections are structured with regard to the type of environmental medium being discussed. This landmark effort defines the study of environmental microbiology as we know it today and serve as an essential contribution to the literature. *Microbes and Microbial Biotechnology for Green Remediation* Junaid Ahmad Malik, 2022-06-14. *Microbes and Microbial Biotechnology for Green Remediation* provides a comprehensive account of sustainable microbial treatment technologies. The research presented highlights the significantly important microbial species involved in remediation, the mechanisms of remediation by various microbes and suggestions for future improvement of bioremediation technology. The introduction of contaminants due to rapid urbanization and anthropogenic activities into the environment causes unsteadiness and distress to the physicochemical systems including living organisms. Hence there is an immediate global demand for the diminution of such contaminants and xenobiotics which can otherwise adversely affect the living organisms. Over time microbial remediation processes have been accelerated to produce better eco friendlier and more biodegradable products for complete dissemination of these xenobiotic compounds. The advancements in microbiology and biotechnology lead to the launch of microbial biotechnology as a separate area of research and contributed dramatically to the development of the areas such as agriculture environment biopharmaceutics and fermented foods. Microbes stand as an imperative efficient green and economical alternative to conventional treatment technologies. The proposed book provides cost effective and sustainable alternatives. This book serves as a reference for graduate and postgraduate students in environmental biotechnology and microbiology as well as researchers and scientists working in the laboratories and industries involved in research related to microbiology environmental biotechnology and allied research. Discusses important microbial activities such as biofertilizer, biocontrol, biosorption, biochar, biofilm, biodegradation, bioremediation, bioclogging and quorum sensing. Covers all the advanced microbial bioremediation techniques which are finding their way from the laboratory to the field for revival of the degraded agro ecosystems. Examines the role of bacteria, fungi, microalgae, *Bacillus* sp, *Prosopis juliflora*, *Deinococcus radiodurans*, *Pseudomonas methanotrophs*, siderophores and PGPRs as the biocontrol and green remediation agents for soil sustainability. *U.S. Geological Survey Open-file Report*, 1994. *CIM Bulletin* Canadian Institute of Mining, Metallurgy and Petroleum, 2003. *Applied and Environmental Microbiology*, 1989. *Industry and Environment*, 1991. *Environmental Aspects of Mine Wastes* J. L. Jambor, David W. Blowes, A. Ian M. Ritchie, 2003.

Advances in Environmental Science and Engineering Reza Iranpour, Ji Zhao, Ai Jie Wang, Feng Lin Yang, Xin Yong Li, 2012-05-14. Selected peer reviewed papers from the 2012 International Conference on Energy and Environmental Protection ICEEP 2012 June 23-24 2012 Hohhot China. 日本微生物学会会報 (Japan), 1900. *Directory of Canadian Environmental Experts*, 1980. *FEMS Microbiology Letters* Federation of European Microbiological

Societies,2002 An international journal providing for the rapid publication of short reports on microbiological research

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