

Microbial Bioremediation of Non-metals

Current Research

Edited by: **Anna-Irini Koukkou**

Department of Chemistry University of Ioannina, Ioannina 45110, Greece

x + 280 pp, July 2011

ISBN: 978-1-904455-83-7, \$319/£159

Microbial biodegradation of non-metals pollutants plays a pivotal role in the bioremediation of contaminated soil and groundwater sites. Such pollutants include chloroethenes, steroids, organophosphorus compounds, alkanes, PAHs and PCBs. In this important new book, expert international authors exhaustively review this topic from a biochemical and genetic viewpoint, providing a timely overview of current research. This book is a vital reference resource for research scientists, graduate students, and other specialists interested on microbial bioremediation of organic pollutants and is recommended reading for environmental microbiologists, chemists and engineers.

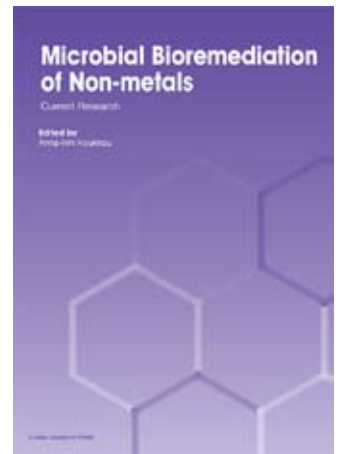


Table of Contents

- Chapter 1: Reductive Dechlorination of Chloroethenes: From the Laboratory to Field Scale Investigations. *Federico Aulenta, Mauro Majone, Marco Petrangeli Papini, Simona Rossetti and Valter Tandoi*
- Chapter 2: Bacterial Degradation of Cholesterol and Other Contaminant Steroids. *J.L. García, Iria Uhía, Esther García and Beatriz Galán*
- Chapter 3: Organophosphorus Compounds-degrading Bacteria and Enzymes, and Their Application. *Katsumasa Abe, Shouji Takahashi and Yoshio Kera*
- Chapter 4: Biodegradation of Hydrocarbons in Bioturbated Marine Sediments. *Philippe Cuny, Cristiana Cravo-Laureau, Vincent Grossi, Franck Gilbert and Cécile Militon*
- Chapter 5: Hydrocarbon-degrading Soil Bacteria: Current Research. *Anna-Irini Koukkou and Elpiniki Vandera*
- Chapter 6: Bioremediation of PAH Contaminated Sites: From Pathways to Bioreactors. *Maria Pouli and Spiros N. Agathos*
- Chapter 7: Ring-hydroxylating Dioxygenases Involved in PAH Biodegradation: Structure, Function, and Biodiversity. *Yves Jouanneau, Florence Martin, Serge Krivobok and John C. Willison*
- Chapter 8: Engineering Microbial Enzymes and Plants to Promote PCB Degradation in Soil: Current State of Knowledge. *Michel Sylvestre and Jean-Patrick Toussaint*
- Chapter 9: Catabolic Plasmids and Mobile Genetic Elements Involved in The Degradation of Non-Metal Xenobiotic Compounds. *Amalia S. Afendra, Maria Parapouli and Constantin Drainas*
- Chapter 10: Microbial biodegradative genes and enzymes in mineralization of non-metal pollutants. *Nazia Mojib, Jack T. Trevors and Asim K. Bej*
- Chapter 11: Molecular Technologies for Analysis of Petroleum Bioremediation. *Yuki Kasai*
- Chapter 12: *Ex-situ* Bioremediation of Contaminated Soils: From Biopiles to Slurry Phase Bioreactors. *Nicolas Kalogerakis*

Full details at: www.horizonpress.com/bioremediation

Related books of interest:

- Metagenomics • Environmental Microbiology • Sensory Mechanisms in Bacteria • Nanotechnology in Water Treatment Applications
- Environmental Molecular Microbiology

Buy at: www.horizonpress.com

Two-Component Systems in Bacteria

Edited by: R Gross, D Beier
c. 410 pp, August 2012

ISBN: 978-1-908230-08-9, \$360/£180

Latest research on structure-function analysis, sensing mechanisms, atypical two-component systems, stress responses, developmental processes, virulence and symbiosis.

Foodborne & Waterborne Bacterial Pathogens

Epidemiology, Evolution and Molecular Biology

Edited by: SM Faruque
c. 330 pp, July 2012

ISBN: 978-1-908230-06-5, \$319/£159

Review topics such as pathogenic properties, population genetics, virulence genes, evolution, drug resistance, epidemiology, detection, identification and control strategies.

Yersinia

Systems Biology and Control

Edited by: E Carniel, BJ Hinnebusch
c. 240 pp, July 2012

ISBN: 978-1-908230-05-8, \$319/£159

Leading *Yersinia* researchers review the hot topics in the systems biology and control of these important bacteria.

Stress Response in Microbiology

Edited by: JM Requena
c. 500 pp, June 2012

ISBN: 978-1-908230-04-1, \$360/£180

Expert authors from around the world summarise the current knowledge on microbial stress response and comprehensively review the recent findings that have greatly advanced the understanding of stress response systems.

Bacterial Regulatory Networks

Edited by: AAM Filloux
c. 400 pp, June 2012

ISBN: 978-1-908230-03-4, \$360/£180

Authoritative, up-to-date reviews of the current research and theories on regulatory networks in bacteria. Critical reviews written by the leading research scientists in the field.

Systems Microbiology

Current Topics and Applications

Edited by: BD Robertson, BW Wren
c. 200 pp, June 2012

ISBN: 978-1-908230-02-7, \$319/£159

Cutting-edge reviews by world-leading experts on the systems biology of microorganisms. Includes theoretical approaches, mathematical modelling, case studies on microbial species and the systems analysis of microbial phenomena.

Quantitative Real-time PCR in Applied Microbiology

Edited by: M Filion

c. 280 pp, May 2012

ISBN: 978-1-908230-01-0, \$319/£159

Aimed specifically at microbiologists, this volume describes and explains the most important aspects of current real-time quantitative PCR (qPCR) strategies, instrumentation and software.

Bacterial Spores

Current Research and Applications

Edited by: E Abel-Santos

c. 300 pp, April 2012

ISBN: 978-1-908230-00-3, \$319/£159

Comprehensive, up-to-date reviews on the current state of our knowledge of bacterial endospores. Essential text for everyone involved in spore research, the expression of recombinant proteins and pathogen detection.

Small DNA Tumour Viruses

Edited by: K Gaston

x + 324 pp, March 2012

ISBN: 978-1-904455-99-8, \$319/£159

Leading scientists from around the world review current hot-topics on small DNA tumour virus research providing a fascinating overview of their molecular biology and interactions with the host.

Extremophiles

Microbiology and Biotechnology

Edited by: RP Anitori

xiv + 300 (colour figures) pp, January 2012

ISBN: 978-1-904455-98-1, \$319/£159

Current and topical areas of extremophile research. The latest insights into the mechanisms these fascinating organisms use to survive and the most recent and novel biotechnological uses of extremophiles.

Bacillus

Cellular and Molecular Biology (2e)

Edited by: P Graumann

xii + 398 pp, February 2012

ISBN: 978-1-904455-97-4, \$360/£180

A valuable reference work providing a comprehensive and up-to-date analysis. Critical reviews on the most recent and topical research.

Microbial Biofilms

Current Research and Applications

Edited by: G Lear, GD Lewis

x + 228 pp, February 2012

ISBN: 978-1-904455-96-7, \$319/£159

An up-to-date review of the latest scientific research on microbial communities and a discussion of future trends and growth areas in biofilm-related research.

Bacterial Glycomics

Current Research, Technology and Applications

Edited by: CW Reid, SM Twine, AN Reid
x + 270 pp, February 2012

ISBN: 978-1-904455-95-0, \$319/£159

Up-to-date overview of our current understanding of bacterial glycomes, the main analytical methods and recent and novel applications.

Non-coding RNAs and Epigenetic Regulation of Gene Expression

Drivers of Natural Selection

Edited by: KV Morris

x + 216 pp, February 2012

ISBN: 978-1-904455-94-3, \$319/£159

An important and up-to-date overview of the modulation of gene transcription by non-coding RNAs. An essential reference book and a major information resource for those working in the area.

Brucella

Molecular Microbiology and

Genomics

Edited by: I López-Goñi, D O'Callaghan
x + 262 pp, February 2012

ISBN: 978-1-904455-93-6, \$319/£159

Highly acclaimed *Brucella* scientists comprehensively review the most important advances in the field. Topics include: genetic diversity, proteomic analysis, transcriptomic analysis, and much more.

Molecular Virology and Control of Flaviviruses

Edited by: P-Y Shi

x + 358 pp, January 2012

ISBN: 978-1-904455-92-9, \$360/£180

An up-to-date and cutting-edge anthology from the leading experts in the flavivirus field. Essential reading for flavivirus researchers at the graduate level and beyond.

"a valuable resource" (Doodys)

Bacterial Pathogenesis

Molecular and Cellular Mechanisms

Edited by: C Locht, M Simonet

x + 370 pp, January 2012

ISBN: 978-1-904455-91-2, \$360/£180

Distinguished scientists comprehensively describe the most relevant and up-to-date information on pathogenic features across the bacterial world.

"useful to those in many areas of research" (Doodys)