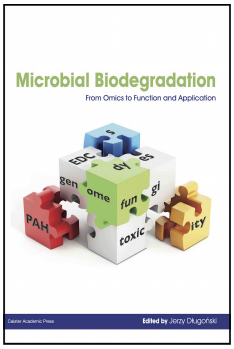
Microbial Biodegradation

From Omics to Function and Application



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Pollution is a major challenge for mankind responsible for millions of premature deaths globally. Current research aims to harness and enhance the natural ability of microbes to degrade or metabolise a huge range of compounds including hydrocarbons, radionuclides and metals. In recent years the application of omics technologies to biodegradation research has generated a plethora of new data providing a greater understanding of the key pathways and new insights into the adaptability of organisms to changing environmental conditions.

In this timely book, expert authors critically review the most important current research in this exciting field. Topics include the genomics, metagenomics and metatranscriptomics of biodegradation, molecular markers in biodegradation, metabolomics and crucial enzymes, proteomics in metabolic pathways inspection, lipidomics in microbial adaptation to toxic compounds, degradation of endocrine disrupting compounds, dyes decolourisation and degradation, polycyclic aromatic hydrocarbon biodegradation, biosurfactants enhancement factors, degradation of volatile compounds, heavy metals removal, and examples of the applications of recent research.

Essential reading for scientists working in the field of microbial degradation and bioremediation and recommended reading for everyone interested in environmental microbiology, biotechnology and molecular biology.

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