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Titolo	Advances in Soil Microbiology: Recent Trends and Future Prospects : Volume 1: Soil-Microbe Interaction / / edited by Tapan Kumar Adhya, Banwari Lal, Balaram Mohapatra, Dhiraj Paul, Subhasis Das
Pubbl/distr/stampa	Singapore : , : Springer Singapore : , : Imprint : Springer, , 2018
ISBN	981-10-6178-5
Edizione	[1st ed. 2018.]
Descrizione fisica	1 online resource (IX, 204 p. 22 illus., 16 illus. in color.)
Collana	Microorganisms for Sustainability, , 2512-1901 ; ; 3
Disciplina	579
Soggetti	Microbiology Microbial genetics Microbial genomics Ecotoxicology Eukaryotic Microbiology Microbial Genetics and Genomics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Chapter 1: Soil Microbiology in the coming decades (Adhya) -- Chapter 2: Molecular genomic techniques for identification of soil microbial community structure and dynamics (Dhiraj Paul) -- Chapter 3: "Omics" tools in Soil microbiology: The state of the art (Angana Sarkar) -- Chapter 4: Diversity of sulfur oxidizing and reducing microbes in diverse ecosystems (Upendra Kumar) -- Chapter 5: Microbial cycling of arsenic in the aquifers of Bengal delta plain (BDP) (Punyasloke Bhadury) -- Chapter 6: Bacterial communities of Uranium contaminated tailing ponds and their interactions with different heavy metals (Paltu Kumar Dhal) -- Chapter 7: Microbial cycling of greenhouse gases and their impact on climate change (Santosh Ranjan Mohanty) -- Chapter 8: Microbe Mediated Bioremediation: An Ecofriendly Sustainable Approach for Environmental Clean-Up (Seema Sangwan) -- Chapter 9: Remediation of oily sludge and oil contaminated soil from petroleum industry -- Chapter 10: Microbial soil enzymes (Swati Joshi) -- Chapter 11: Biosurfactants in soil bioremediation (Vivek Rangarajan).
Sommario/riassunto	This book presents a comprehensive collection of articles illustrating

the importance of microbial community structure and function for ecosystem sustainability and environmental reclamation. It addresses a diverse range of topics, including microbial diversity, physiology, genomics, ecosystem function, interaction, metabolism, and the fruitful use of microbial communities for crop productivity and environmental remediation. In addition, the book explores issues ranging from general concepts on the diversity of microorganisms in soil, and ecosystem function to the evolution and taxonomy of soil microbiota, with future prospects. It covers cutting-edge methods in soil microbial ecological studies, rhizosphere microflora, the role of organic matter in plant productivity, biological nitrogen fixation and its genetics, microbial transformation of plant nutrients in soil, plant-growth-promoting rhizobacteria, and organic matter transformation. The book also discusses the application of microbes in biodegradation of xenobiotic contaminants. It covers bio-fertilizers and their role in sustainable agriculture and soil health, biological control of insect pests and plant pathogens, and the latest tools of omics in soil microbiology, i.e. genomics, proteomics, transcriptomics and metabolomics, which offer pioneering approaches to the exploration of microbial structure and function.
