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Nota di contenuto	1. The role of general methods and mathematical models on microbial evolution, ecological interactions, and population dynamics / Subir Kumar Nandy -- 2. Identification of microorganisms carried by aeolian dust to other continents and their impact on public health / Paraskevi A. Farazi -- 3. Chlorinated compounds in natural and biotechnological processes : merits, risks, and uses / Sandor T. Forczek, Josef Holik, Ludek Rederer, and Martin Ferenik -- 4. Environmental impact of pesticide use on microbial communities and soil bioprocesses : a physiological, biochemical, and molecular perspective / Jeyabalan Sangeetha, Muniswamy David, Devarajan Thangadurai, Etigemane Ramappa Harish, Jadhav Shrinivas, Prathima Purushotham, and Kartheek Rajendra Malowade -- 5. Recent advances in applications of nanomaterials for water remediation / Kaliyaperumal Rani and Barindra Sana -- 6. Fungal dehalogenation : an overview / Raghunath Satpathy, Venkata Sai Badireenath Konkimalla, and Jagnyeswar Ratha -- 7. Insight of biofuel prospects from microalgae as renewable energy source for

environmental sustainability / Ganapathi Sibi -- 8. Integrated algal industrial waste treatment and bioenergy co-generation / Mohd Azmuddin Abdullah and Ashfaq Ahmad -- 9. Bioambiant preservation of raw hides using plant-based materials : a green technology to reduce tannery waste water pollution / Prafulla Namdeo Shede, Ashish Vasantrao Polkade, Pradnya Pralhad Kanekar, Prashant Kamalakar Dhakephalkar, and Seema Shreepad Sarnaik -- 10. Phytoremediation of organic chemopollutants / Pradnya Pralhad Kanekar, Seema Shreepad Sarnaik, Parag Avinash Vaishampayan, and Prafulla Namdeo Shede -- 11. Bioconversion of palm oil and sugar industry wastes into value-added polyhydroxyalkanoate / Noor Fazielawanie Mohd Rashid, Ain Farhana Mohd Yatim, Al-Ashraf Amirul, and Kesaven Bhubalan -- 12. Influence of environmental factors on the prevalence of postharvest deterioration of raphia and shea fruits in Nigeria / Okungbowa Francisca Iziegbe and Esiegbuya Ofeoritse Daniel -- 13. Soil remediation and ecological restoration from heavy metal pollution and radioactive waste materials using fungal genetic and genomic resources / Jeyabalan Sangeetha, Devarajan Thangadurai, Muniswamy David, Jadhav Shrinivas, Abhishek Channayya Mundaragi, Paidi Murali Krishna, Etigemane Ramappa Harish, Prathima Purushotham, and Swapna Kishor Deshpande -- 14. A multifaceted bioremediation of xenobiotics using fungi / Devipriya Rabin Majumder.

Sommario/riassunto

With focus on the practical use of modern biotechnology for environmental sustainability, this book provides a thoughtful overview of molecular aspects of environmental studies to create a new awareness of fundamental biological processes and sustainable ecological concerns. It covers the latest research by prominent scientists in modern biology and delineates recent and prospective applications in the sub-areas of environmental biotechnology with special focus on the biodegradation of toxic pollutants, bioremediation of contaminated environments, and bioconversion of organic wastes toward a green economy and sustainable future.