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Nota di contenuto	Chapter 1: Introduction to the Wastewater Sludge Nexus -- Chapter 2: Fundamentals of Wastewater Treatment and Sludge Generation -- Chapter 3: Physicochemical and Biological Properties of Wastewater Sludge -- Chapter 4: Sludge Dewatering Techniques -- Chapter 5: Sludge Digestion and Stabilization -- Chapter 6: Sludge Thickening and Conditioning -- Chapter 7: Sludge Disposal and Residuals Management -- Chapter 7: Sludge Generation in the Municipal Sector -- Chapter 8: Sludge from Food Processing Industries -- Chapter 9: Sludge in the Agricultural Sector -- Chapter 10: Sludge from Textile and Leather Industries -- Chapter 11: Sludge Management in the Petroleum and Chemical Industry -- Chapter 12: Emerging Technologies for Sludge

Management -- Chapter 13:and Genetic Engineering Approaches in Sludge Management -- Chapter 14: Environmental and Health Risks Associated with Sludge -- Chapter 15: Sludge Management in Developing Countries -- Chapter 16: Policy, Regulations, and Sustainable Practices -- Chapter 17: Future Directions and Research Opportunities -- Chapter 18: Conclusions and Recommendations -- Appendix A:Glossary of Terms -- Appendix B:Frequently Asked Questions (FAQs) -- Appendix C: List of Acronyms and Abbreviations -- Appendix D:References.

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## Sommario/riassunto

This book is a groundbreaking book that explores the critical issue of managing and handling industrial sludge in wastewater treatment facilities. The proposed book addresses the urgent need for a comprehensive understanding of sludge management practices and introduces innovative solutions. The proposed book highlights the significance of industrial sludge management in ensuring sustainable and environmentally friendly wastewater treatment processes. It sheds light on the complex nexus between wastewater treatment plants, industries, and the resulting sludge generation. Through meticulous research and expert insights, this book explores various aspects of industrial sludge management, including sludge characterization, treatment technologies, disposal methods, resource recovery, and environmental sustainability. It presents a balanced approach, focusing on practical applications while emphasizing the importance of scientific understanding and innovation. By providing an in-depth analysis of the challenges and opportunities in this area, it becomes an indispensable resource for professionals, researchers, policymakers, and students alike. What sets this book apart is its unique content, which covers a wide range of topics related to industrial sludge management. It explores the latest advances in sludge treatment technologies, emphasizing their efficiency, cost-effectiveness, and environmental impact. Additionally, the book examines strategies for sludge minimization, resource recovery, and the utilization of sludge by-products in various industrial applications. The authors also discussed the regulatory frameworks and guidelines governing sludge management, ensuring that readers have a comprehensive understanding of the legal aspects surrounding this critical issue. Furthermore, the book explores the potential risks associated with improper sludge management and offers practical solutions to mitigate them. Overall, the proposed book fills a significant gap in the literature by providing a holistic and up-to-date account of this crucial field. It serves as a valuable guide, inspiring sustainable practices, promoting innovation, and ultimately contributing to the advancement of sludge management in wastewater treatment processes.

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