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Autore	Fosso-Kankeu Elvis
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Sommario/riassunto

The book is essential for understanding innovative solutions to the critical challenges posed by increasing wastewater pollution and the urgent need for sustainable practices in light of climate change and resource scarcity. Increased population growth and climate change put continuous pressure on freshwater resources across the globe. The volume and diversity of pollutants in wastewater discharged from industry have significantly increased over the years, making conventional wastewater treatment systems unfit for managing industrial wastewater released into the environment. The limitations of existing treatments appear not only in the suitability of the technologies to abate emerging pollutants, but also in the approach used to mitigate the situation and ensure sustainability of the process. For wastewater treatment, the circular economy, which is based on the principles reduce, reuse, recycle, restore, and recover, will ensure that waste is minimized and the life-cycle value of natural resources and products is maximized. Considerable progress has been made in developing new technologies that can adequately address the issue. However, with larger volumes of wastewater to treat every day, the cost of treatment is overwhelming, necessitating the right combination of technologies that will promote the reuse of pollutants recovered during the treatment process to offset the treatment cost. Customized Technologies for Sustainable Management of Industrial Wastewater: A Circular Economy Approach presents fifteen comprehensive chapters that cover the sustainability of industrial wastewater treatment technologies with consideration to the circular economy. Readers will find the volume: Emphasizes the mechanisms and strategic combination of technologies that maximize the recovery of valuables during industrial wastewater treatment and deliver effluents treated to the acceptable standard; Discusses the characteristics, purity, and potential uses and applications of the recovered products; Focuses on the strategic development of technologies for the sustainable treatment of industrial wastewater at large. Audience Researchers, mining and industrial professionals, environmental managers, and policymakers involved in environmental, chemical, engineering, and mineral processing fields in the industries; water treatment plants managers and operators, water authorities, government regulatory bodies officers, and environmentalists.
