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Autore	Younos Tamim
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Altri autori (Persone)	LeeJuneseok PareceTammy E
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Nota di contenuto	Introduction: The evolution of smart technology applications in water management -- Real-time modelling of flood forecasting in urban drainage systems using Information and Communication Technology (ICT) and data assimilation -- The watershed health assessment framework: Integrating geospatial data and system science to advance natural resource management in Minnesota -- The technological evolution of Landsat Satellite System and its potential for water resources management -- Robotic technology applications in water environments: An overview -- Optimal sensor deployment technologies: An industry review with case studies -- Evolving

strategies in drinking water pipeline replacement: From past practices to machine learning innovations -- Hydraulic transient-based pipeline condition assessment and its potential in smart water networks Service line material detection with the Internet of Things (IoT) devices and artificial intelligence (AI) -- Service line material detection with the Internet of Things (IoT) devices and artificial intelligence (AI) -- Cybersecurity application in water infrastructure: An overview.

Sommario/riassunto

This book reviews the latest advances and practical applications of smart technologies applied to water resource management. Bridging environmental chemistry, engineering, and information technology, the book offers a multidisciplinary perspective on how digital innovations are reshaping water monitoring, infrastructure diagnostics, and decision-making processes. Chapters by expert contributors cover topics such as the applications of machine learning for drinking water pipeline replacement, geospatial technologies, satellite and remote sensing technologies, Internet - of - Things (IOT), cybersecurity, robotics in water monitoring and artificial intelligence. Particular attention is given to the applications in real-time modelling of flood forecasting in urban drainage systems and the implementation of smart water networks. With detailed case studies and industry insights, this book highlights practical implementations such as smart water networks, optimal sensor deployment, and AI-driven service line material detection. Given its breadth, the book is a valuable resource for researchers, scholars and students, and serves as a roadmap for water resource engineers and planners tackling water security and diverse water resources portfolios.