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Sommario/riassunto	Membrane based PoU water treatment systems are preferred due to shortcomings of other water treatment technologies. This system works without the addition of chemicals, with relatively low energy consumption, and easy and well-arranged process conductions. Hence, there is an inevitable need to understand the basic operational parameters, design and maintenance of membrane based PoU water treatment systems. The book provides insight of membrane based PoU water treatment systems (ultrafiltration, microfiltration, nano-filtration, reverse osmosis etc.) including description of physical, chemical, microbiological water contaminants and conventional methods for their removal. This book also discusses the limitations of conventional water treatment systems in fulfilling PoU water demands in developing countries and evaluates the suitability of membrane based treatment covering design, operation, maintenance and techno-economic feasibility of PoU water treatment system. The book covers issues related to water quality, water contamination, reasons for recent water quality degradation, conventional methods for water treatment -their limitations and need for PoU water treatment systems. The first chapter explains the contaminants in drinking water, sources and effects of these contaminants, and importance of removal of these contaminants. Second chapter describes various units, advantages and limitations of conventional water treatment plant in addition to various point-of-use water treatment technologies. Third chapter covers detail about

ultrafiltration, microfiltration, nanofiltration and RO based PoU water treatment systems. Fourth chapter describes design criteria, and design of pre-treatment and post-treatment and multi-stage/multi-barrier systems. Modelling and simulation, process optimization, material requirement and bill of materials and more importantly fabrication aspects are included in Chapter 5. Chapter 6 includes operation and maintenance aspects including that of pre and post treatment units. Techno-economic aspects of membrane based PoU systems are elucidated in seventh chapter. The last chapter elaborates process of certification and evaluation.