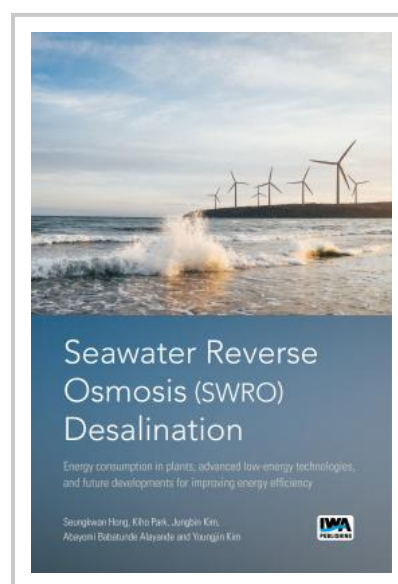


Seawater Reverse Osmosis (SWRO) Desalination: Energy consumption in plants, advanced low- energy technologies, and future developments for improving energy efficiency

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High-energy consumption is a critical issue associated with seawater reverse osmosis (SWRO) desalination, although the SWRO has been regarded as one of the most energy-efficient processes for seawater desalination. This means that SWRO involves a larger amount of fossil fuel and other energy sources for water production, which imposes a negative impact on the environment such as greenhouse gas emission. Therefore, the high-energy consumption of SWRO should be addressed to minimize environmental impacts and to allow for sustainable exploitation of seawater. However, the recent trend of energy consumption in SWRO seems to have reached a saturation point, which is still higher than theoretical minimum energy. To find new and innovative strategies for lowering current energy consumption, a comprehensive understanding of energy use in SWRO plants from theoretical analysis to actual energy consumption in real SWRO plants is required. This book can provide readers with information about the current state of energy consumption in actual SWRO plants, the fundamental understanding of energy use of SWRO plants from theoretical point of view, and advanced technologies and processes that could be applied for future energy reduction. In addition, this book will offer a detailed methodology for analyzing energy issues in seawater desalination. Through this book, readers will obtain an insight into how to deal with and analyze the energy issues in SWRO desalination.



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