

# Environmental technologies for the sustainable development of the water and energy sectors

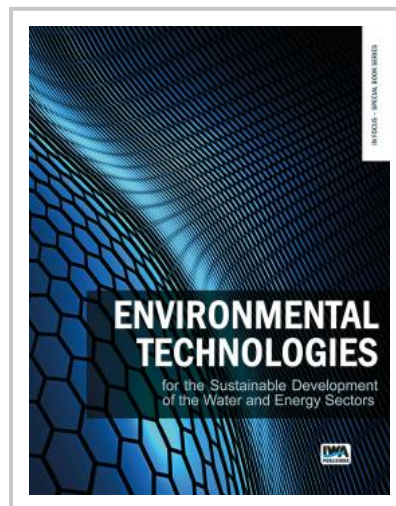
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Did you know that watching your favourite series on tv or just switching on your laptop for work, requires indirect water consumption? It's a proven fact that every time we use energy resources, water is also consumed. In the next few decades, global water and energy demands will increase significantly, but at this time there isn't a lot of information on expected global changes.

The Water Research Institute (WRI) estimates that around 33 countries will experience very high water stress by 2040. Which means that as water scarcity rises due to rapid population growth, climate change and water deterioration, the global demand for pure water will also increase. We hope this book will help answer some of the challenges.

The 13 chapters of this book were selected from multiple disciplines which focused on the state-of-the-art technologies in the field of environmental applications. These include technical-economic aspects of chemical precipitation; different substrates and concentrations of double chamber microbial fuel cells; the impact of pre-treatment on COD from paper industry wastewater; the synthesis of PES/Go-SiO<sub>2</sub> mixed matrix membranes; predictions of a wastewater treatment plants performance of aeration demands; the performance of hydrological models for green roofs; short-term flexibility for energy grids from wastewater treatment plants; an integrated platform between water-energy-nexus and a business model for sustainable development; resilience-informed decision making in critical infrastructure networks.

**In Focus – a book series that showcases the latest accomplishments in water research. Each book focuses on a specialist area with papers from top experts in the field. It aims to be a vehicle for in-depth understanding and inspire further conversations in the sector.**



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