

Editorial: Future-oriented technologies and concepts to increase water availability by water reuse and desalination

The pressure on available freshwater resources due to urbanization and climate change impacts is increasing worldwide; so follows the need to explore unconventional resources. Water reuse and desalination are viable options for alternative water supplies, also for regions that had no need to consider these approaches in the past. However, these solutions need to be tailored to local conditions, be balanced against conventional supply options while minimizing any adverse health and environmental impacts. There is increasing interest in developing new planning tools, technological solutions and approaches in this field to foster safe and economically viable water reuse and desalination applications.

The German Federal Ministry of Education and Research (BMBF) realized these needs at an early stage and launched the major funding initiative 'WavE' (www.bmbf-wave.de/en) in 2016 entitled '*Future-oriented Technologies and Concepts to Increase Water Availability by Water Reuse and Desalination*' within the framework program 'Research for Sustainable Development (FONA)' and the research agenda on Green Economy. WavE is aimed at developing innovative technologies and management concepts to foster a sustainable increase in water availability. Three topic areas were addressed in the funding measure to provide sustainable solutions for national and international applications: (I)

reuse of municipal wastewater, (II) reuse of water in industry, (III) use of saline ground- and surface water. The aim is to provide sustainable solutions for national and international applications.

In total, 13 joint research projects were funded involving more than 80 partners from academia, engineering practice, and state and federal authorities evaluating hands-on projects in Germany, Vietnam and Namibia. This special issue of *Journal of Water Reuse and Desalination* reports fully peer-reviewed research highlights from many of these comprehensive research projects addressing contemporary approaches to evaluate new technologies and concepts in non-potable water reuse applications, multi-barrier concepts for potable and non-potable reuse applications, concepts for industrial reuse and resource recovery approaches for brine streams, as well as onsite desalination technologies for developing communities.

Enjoy reading these important contributions to the field of water reuse and desalination!

Guest Editor

Jörg E. Drewes 

Technical University of Munich,
Munich, Germany

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