

POST-TREATMENT OF DESALINATED WATER

by **Ori Lahav, Nikolay Voutchkov and Liat Birnhack**

Post-Treatment of Desalinated Water covers the incentives, underlying scientific principles and related engineering aspects of the final stage of the desalination process, a part in the overall desalination process which has not received, thus far, the attention it deserves in the professional literature. The textbook starts by describing the reasons behind the quality criteria needed in desalinated water, which stem from a variety of reasons, ranging from chemical and biological stability in the distribution systems through public health demands and possible impacts on receiving water bodies, soils and the environment. The introductory chapters are followed by an extensive chapter covering all the aquatic chemistry material required to understand and design post treatment processes. Thereafter, existing and proposed methods for attaining the defined quality criteria are presented from both the chemical and engineering standpoints. The described methods are accompanied by thorough cost estimation. Finally, a computer program for simulating and designing post treatment processes is introduced and exemplified.

Ori Lahav is an Associate Professor at the Faculty of Civil and Environmental Engineering at the Technion – Israel Institute of Technology. Prof. Lahav teaches aquatic chemistry and water treatment related courses and his focus in research is on the development of new water and wastewater treatment processes in general, and desalination post-treatment processes in particular. As of 2012 Prof. Lahav published 2 textbooks and 62 papers in peer-reviewed high-quality scientific journals

Nikolay Voutchkov (PE, BCEE). Mr. Voutchkov, President of Water Globe Consulting, LLC, has over 25 years of experience in the field of desalination and water reuse, and currently works as an independent technical advisor to public utilities implementing large desalination projects worldwide, and to private companies and investors involved in the development of advanced membrane technologies. He has extensive expertise with all phases of project delivery: from conceptual scoping, pilot testing and feasibility analysis; to front-end and detailed project design; environmental review; contractor procurement; project construction and operations oversight/asset management. In recognition of his outstanding efforts in the field of seawater desalination, Mr. Voutchkov has received a number of prestigious awards from the International Desalination Association, the International Water Association, and the American Academy of Environmental Engineers.

Liat Birnhack completed her PhD studies in 2011 at the Faculty of Civil and Environmental Engineering, Technion – Israel Institute of Technology. Her MSc and PhD research focused on post treatment of desalinated water. Her current research activity centers on water and wastewater treatment processes. Dr. Birnhack has published more than 10 peer-reviewed papers; she currently teaches aquatic chemistry at both the Technion and the Kinneret College in Israel.



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