

 **Contents**
Volume 31

**Selected Papers Presented at EuroMed 2010 — Desalination for Clean Water and Energy:
Cooperation among Mediterranean Countries of Europe and MENA Region
3–7 October 2010, David Intercontinental Hotel, Tel Aviv, Israel**

The value of water: Optimizing models for sustainable management, infrastructure planning, and conflict resolution	
F.M. Fisher (Cambridge, MA) and A.T. Huber-Lee (Medford, MA, USA).....	1
Photovoltaic reverse osmosis —Feasibility and a pathway to develop technology	
A.M. Bilton, L.C. Kelley and S. Dubowsky (Cambridge, MA, USA)	24
Low electrode area electrochemical scale removal system	
D. Hasson, G. Sidorenko and R. Semiat (Haifa, Israel).....	35
Humic acid removal by deep-bed filtration and by UF membranes	
I. Sutzkover-Gutman, D. Hasson and R. Semiat (Haifa, Israel)	42
Effect of the concentration polarization on the fouling driving force of UF membranes	
S. Vulf, I. Sutzkover-Gutman, D. Hasson and R. Semiat (Haifa, Israel)	54
Correlation of CaCO_3 induction times measured by an electrochemical technique	
I. Zaslavski, D. Hasson, H. Shemer, R. Semiat (Haifa, Israel), M. Wilf (San Diego, CA, USA) and C. Bartels (Oceanside, CA, USA)	59
Removal of heavy metals by immobilized magnetite nano-particles	
A. Zach-Maor, R. Semiat and H. Shemer (Haifa, Israel)	64
Control and management of brine disposal for inland desalination plants	
A. Shulman, I. David, E. Gelman and M. Priel (Tel-Aviv, Israel).....	71
Large ultrafiltration system for industrial waste water re-use in Turkey	
M. Koenig, N. Selzer and B. von Harten (Wuppertal, Germany).....	82
Integrated pressure and flow control in SWRO with a HEMI turbo booster	
E. Oklejas and J. Hunt (Monroe, MI, USA)	88
Closed circuit desalination — A new low energy high recovery technology without energy recovery	
A. Efraty, R.N. Barak and Z. Gal (Har Hadar, Israel)	95
Boron removal from seawater by electro-chemical treatment as part of water desalination	
E. Ofir, A. Brenner, K. Muuler and V. Gitit (Beer-Sheva, Israel)	102
Selection of optimum formulation for biosorbing lead and cadmium from aquatic solution by using PVA-SA's immobilizing <i>Lentinus edodes</i> residue	
Dan Zhang (Chengdu, China), Xuedan Zeng (Chengdu and Beijing, China), Wei Li (Chengdu, China), Haijiang He(Chengdu and Beijing, China), Pei Ma (Beijing, China) and J. Falandysz (Gdańsk, Poland).....	107
Long term membrane process and performance in Ashkelon Seawater Reverse Osmosis Desalination Plant	
V. Garcia-Molina (Tarragona, Spain), M. Taub, L. Yohay (Ashkelon, Israel) and M. Busch (Tarragona, Spain)	115
Review of material selection and corrosion in seawater reverse osmosis desalination plants	
N. Larché (Brest) and P. Dézerville (Saint Maurice, France)	121
Experimental results of a seawater distiller utilizing waste heat of a portable electric generator	
Chang-Dae Park, Byung-Ju Lim and Kyung-Yul Chung (Daejeon, Korea).....	134
Ozone/membrane hybrid process for arsenic removal in iron-containing water	
Yeojoon Yoon, Yunyoung Hwang, Minkyu Ji, Byong-Hun Jeon and Joon-Wun Kang (Gangwon-do, Korea)	138
Researching and modelling the dependence of MD flux on membrane dimension for scale-up purpose	
Jianhua Zhang, Jun-De Li and S. Gray (Melbourne, Australia).....	144

The effect of UV pre-treatment on biofouling of BWRO membranes: A field study T. Harif (Beit Shemesh), H. Elifantz (Jerusalem), E. Margalit (Beit Shemesh), M. Herzberg (Sede Boqer), T. Lichi (Beit Shemesh) and D. Minz (Beit Dagan, Israel).....	151
Carbon footprint of seawater reverse osmosis desalination pre-treatment: Initial results from a new computational tool M. Beery, A. Hortop, G. Wozny (Berlin, Germany), F. Knops (Enschede, The Netherlands) and J.-U. Repke (Freiberg, Germany)	164
Design optimization of large SWRO plants utilizing time-of-use (TOU) energy prices P. Glueckstern and D. Anahory (Tel-Aviv, Israel)	172
Field experience with a 20,000 m ³ /d integrated membrane seawater desalination plant in Cyprus E. Gasia-Bruch (Tarragona, Spain), P. Sehn (Rheinmünster, Germany), V. García-Molina, M. Busch (Tarragona, Spain), O. Raize and M. Negrin (Carmiel, Israel)	178
Improved aquifer characterization and the optimization of the design of brackish groundwater desalination systems R.G. Maliva (Fort Myers, USA) and T.M. Missimer (Fort Myers, FL, USA and Thuwal, Saudi Arabia)	190
Environmental research on brine discharge optimization: A case study approach E. González, B.Arconada, P. Delgado, A. Alcaraz, A. Álvarez, M. Antequera (Madrid), Y. Fernández, A. Garrote (Alicante), S. de Rico, E. Salete (Madrid) and J.L. Sánchez Lizaso (Alicante, Spain)	197
Project for the development of innovative solutions for brines from desalination plants D. Zarzo Martinez and E. Campos Pozuelo (Murcia, Spain)	206
Distributed generation and water production: A study for a region in central Italy G. Comodi, L. Cioccolanti, S. Palpacelli, A. Tazioli and T. Nanni (Ancona, Italy)	218
Comparative evaluation of two membrane distillation modules E. Guillén, J. Blanco, D. Alarcón, G. Zaragoza, P. Palenzuela and M. Ibarra (Almería, Spain)	226
3D physical modelling in a wave flume of brine discharges on a beach F. Vila, A. Ruiz-Mateo, M. Rodrigo, A. Álvarez , M. Antequera and A. Lloret (Madrid, Spain).....	235
Modeling of the heat transfer of a solar multi-effect distillation plant at the Plataforma Solar de Almería P. Palenzuela, D. Alarcón, J. Blanco, E. Guillén, M. Ibarra and G. Zaragoza (Almería, Spain).....	257
A brine evaporative cooler/concentrator for autonomous thermal desalination units A. Cipollina, G. Micale and L. Rizzuti (Palermo, Italy).....	269
A new phosphorous-free antiscalant for membrane desalination D.A. Musale, B.B.J. Yao, S. Lopes, A. Urményi, M. Fazel, H. Lohokare, R. Yeleswarapu, A. Hallsby and A. Sheikh (Naperville, IL, USA).....	279
An experimental approach to explore cleaner systems for desalination membranes M. Rückel, S. Nied and G. Schürmann (Ludwigshafen, Germany)	285
Separation characteristics of acetone/water mixtures through sodium alginate/poly(vinyl pyrrolidone) membranes by vapor permeation and vapor permeation with temperature difference methods E.K. Solak (Ankara), S. Kahya (Aksaray) and O. Şanlı (Ankara, Turkey)	291
Pre-desalination with electro-membranes for SWRO J.W. Post (Nieuwegein and Wageningen), H. Huiting, E.R. Cornelissen (Nieuwegein) and H.V.M. Hamelers (Leeuwarden and Wageningen, The Netherlands)	296
The use of computer aided techniques for reverse osmosis desalination layout design A. Bick (Jerusalem and Ramat Gan) and G. Oron (Sde-Boker, Beer Sheva and Haifa, Israel)	305
Successful antiscalant field trial — Optimization at higher pH and seawater temperature — Larnaca Desalination Plant F. Dutoy and W. van der Wal (Louvain-La-Neuve, Belgium)	311
Improved phenol degradation in high-phenol-fed MBR by membrane-driven containment of non-settling biodegradation microbes Soojeung Ahn, Insang Song, Younkyoo Choung and Joonhong Park (Seoul, Korea)	320
Silica scaling on reverse osmosis membranes — Investigation and new test methods W. Hater, C. zum Kolk, C. Dupoirion (Düsseldorf), G. Braun, T. Harrer and T. Götz (Köln, Germany)	326
7 year operation of a BWRO plant with raw water from a coastal aquifer for agricultural irrigation C. Garcia, F. Molina and D. Zarzo (Murcia, Spain).....	331
Analysis and design of a multi-effect desalination system with thermal vapor compression and harvested heat addition A. Vozar McKnight, M. Georgiou, Myunghoon Seong and J.G. Georgiadis (Urbana, IL, USA)	339

Monitoring and controlling biofouling in an integrated membrane system M.J. Boorsma (Zuidlaren and Assen), S. Dost, S. Klinkhamer (Assen) and J.C. Schippers (Hertogenbosch, The Netherlands)	347
Gold Coast desalination plant commissioning and operation after one year with isobaric ERDs T. McCurdy, B. Schneider and F. Grondhuis (Vernon, CA, USA).....	354
Seawater desalination (RO) as a wind powered industrial process – Technical and economical specifics J. Käufler, R. Pohl and H. Sader (Berlin, Germany)	359
Research on a pre-denitrification double-layer media biological aerated filter in municipal wastewater treatment Hongbo Hu, Hongjun Han, Wencheng Ma (Harbin), Wei Wang (Hefei) and Bing Wang (Harbin, China)	366
Effect of coal gangue-fly ash ceramic (CFC) media on municipal wastewater treatment in a pre-denitrification biological aerated filter Hongbo Hu, Hongjun Han (Harbin), Wei Wang (Hefei), Bing Wang and Yufei Li (Harbin, China)	372
Field results in Namibia and Brazil of the new solar desalination system for decentralised drinking water production K. Schwarzer (Jülich, Germany), M. Eugênia Vieira da Silva (Fortaleza-CE, Brazil) and T. Schwarzer (Jülich, Germany)	379
Desalination device for arid areas L.B. Begrambekov, A.A. Gordeev, S.V. Vergasov, A.M. Zakharov (Moscow, Russia).....	387
Author Index.....	392

