Selected papers presented at the 2012 Qingdao International Desalination Conference
June 26–29, 2012, Qingdao, China

Gelling and phase inversion preparation for Al₂O₃/PVDF hybrid membrane
H. Dong, K. Xiao, X. Li and S. Guo (Guangzhou, China) .......................................................... 3677

Preparation of PVDF/Al₂O₃ hybrid membrane via the sol–gel process and characterization
of the hybrid membrane
H. Dong, K.-j. Xiao, X.-l. Li, Y. Ren and S.-y. Guo (Guangzhou, China) .................................... 3685

Effect of anaerobic time on biological nitrogen removal in a modified SBR
J. Li (Hangzhou), T. Tao (Wuhan), X-b. Li (Nantong), L.-m. Wang (Hangzhou) and
H. Zheng (Guangzhou, China) ........................................................................................................ 3691

Studies on the adsorption behavior of methyl orange from dye wastewater onto activated clay
Q. Ma (Taiyuan), F. Shen (Xi’an), X. Lu, W. Bao (Taiyuan) and H. Ma (Xi’an, China) ............... 3700

Design and operation of Jibei water plant in Ji Yang county
W. Daoji, Y. Xiaobin, T. Fengxun, T. Zhongyong and L. Congwei (Jinan, China) ....................... 3710

Process design of water treatment plant on groundwater with high hardness in Yucheng
W. Daoji, T. Zhongyong, W. Lin, T. Fengyun, H. Qingxiang and Y. Xiaobin (Jinan, China) ....... 3715

Separation behavior of NF membrane for dye/salt mixtures
L. Ji, Y. Zhang, E. Liu, Y. Zhang and C. Xiao (Tianjin, China) ................................................... 3721

The research on thermal and economic performance of solar desalination system
with evaporated tube collectors.
X. Liu, W. Chen, S. Shen, M. Gu and G. Cao (Dalian, China) ...................................................... 3728

The research on thermal and economic performance of solar desalination system
with salinity-gradient solar pond
X. Liu, G. Cao, S. Shen, M. Gu and C. Li (Dalian, China) ............................................................. 3735

Analysis and evaluation of various energy technologies in seawater desalination
Y. Liu (Beijing), Y. Guo (Lanzhou) and Q. Wei (Beijing, China) .............................................. 3743

Biosorption of citric acid–cadmium complex by imprinted chitosan polymer
P. Liang, D. Wang, H. Qi, X. Liu and Y. Xu (Qingdao, China) ..................................................... 3754

Preparation of polysulfone ultrafiltration membranes modified by silver particles
X. Zhang, B. Shi and X. Liu (Harbin, China) .................................................................................. 3762

Enrichment of Citrus reticulata Blanco essential oil from oily wastewater by ultrafiltration membranes
B. Li, Z.F. Han, G.P. Cao, J. Shen and L.W. Guo (Nanjing, China) ............................................. 3768

Effects of amphiphilic additive Pluronic F127 on performance of poly (ether sulfone)
ultrafiltration membrane
C. Liu, Y. Yun, N. Wu, Y. Hua and C. Li (Beijing, China) ............................................................. 3776

Fabrication and properties of polyvinyl chloride hollow fiber membranes plastified by dioctyl phthalate
H. Liu, C. Xiao and X. Hu (Tianjin, China) .................................................................................... 3786

Household-based combined process for the emergent treatment of groundwater micropollutants
Z.s. Liu (Harbin), J. Yin, X.-y. Zhang (Changchun) and Y.-h. Pu (Harbin, China) ...................... 3794

Preparation of PVDF/Al₂O₃ hybrid membrane via alkaline modification and chemical coupling process
H. Dong, K. Xiao, X. Li, Z. Wang and S. Guo (Guangzhou, China) ......................................... 3800

Hydrophilic modification of HDPE microfiltration membrane by corona-induced graft polymerization
H. Guo, C. Geng, Z. Qin and C. Chen (Beijing, China) ................................................................. 3810

Preparation and properties of PVDF/PPTA blend membranes
J. Dong, D. Liu, Y. Zhang and C. Wang (Tianjin, China) ............................................................... 3814

Comparison between MBR and A/O processes treating saline wastewater
J. Li, D. Yu and P. Zhang (Qingdao, China) .................................................................................... 3821
Solvent extraction of phenol with cumene from wastewater
J. Liu, J. Xie, Z. Ren and W. Zhang (Beijing, China) ................................................................. 3826
Optimization of the operating parameters for online ultrasonic on controlling membrane fouling
in SMBR
D. Li, M. Li, Y. Wang and C. Gong (Beijing, China) ................................................................. 3832
Study of supernatant of SBR in dead-end microfiltration
L. Shi (Beijing), Y. Ma (Urumqi), Y. Cui, Z. Wang, W. Dong, J. Chu, Y. Lyu
and Y. Song (Beijing, China) ................................................................................................. 3840
Purification of Ginkgo biloba flavonoids by UF membrane technology
M. Zhu, Y. Yun and W. Xiang (Beijing, China) ................................................................. 3847
Preparation of PVDF/PVC composite membrane for wastewater purification
Q. Zhang, S. Zhang, Y. Zhang, X. Hu and Y. Chen (Tianjin, China) ....................................... 3854
Study on pretreatment of seawater electrolysis for desalination
Q. Zhang, S. Yi, S. Wang, R. Shi, X. Li and H. Ma (Tianjin, China) ........................................... 3858
Theoretical and experimental study of Au(III)-containing wastewater treatment
using magnetotactica bacteria
S. Huiping (Taiyuan), L. Xingang (Tianjin), C. Huaiangang and C. Fangqin (Taiyuan, China) 3864
Preparation of high performance nanofiltration membrane by different dihydric alcohol
in aqueous phase
L. Wen and W. Wang (Tianjin, China) ....................................................................................... 3871
Impact of operating conditions on the flux changing rate during dead-end microfiltration process
W. Dong (Beijing), X. Wang (Urumqi), X. Ye, Z. Wang and X. Zhang (Beijing, China) ....... 3878
Adsorption of tartaric acid–cadmium complex by imprinted chitosan biopolymer
X. Lan, P. Liang (Qingdao) and Y. Yang (Jinan, China) .......................................................... 3883
TiO$_2$–Au composite for efficient UV photocatalytic reduction of Cr(VI)
X. Liu, T. Lv, Y. Liu, L. Pan and Z. Sun (Shanghai, China) ....................................................... 3889
Evaluation of ultrafiltration membranes with the multimedia filter/ultrafiltration/reverse osmosis/
NH$_4^+$-N remover system to treat surface water
Y. Yun, C. Liu, Z. Zhang, J. Ji (Beijing) and Q. Wang (Xi’an, China) ....................................... 3896
Effects of pore-forming additives on structures and properties of PVDF/Fe$^{3+}$/Cu$^{2+}$ hollow fiber membranes
Y. Zhang, R. Lin, M. Yuan and X. Yue (Jilin, China) ............................................................... 3903
Preparation and properties of Fe$^{3+}$/PVDF-PMMA catalytic membrane
Y. Zhang, M. Yuan, R. Lin and X. Yue (Jilin, China) ............................................................... 3909
Preparation and adsorption performance of molecularly imprinted polymers for Kaempferol
Z. Zhang, Y. Yun and C. Li (Beijing, China) ............................................................................ 3914
Analyses of molecular weight distribution of organic matters with pre-oxidation and PAC–UF
pretreatment before seawater reverse osmosis
D. An, M. Chen and Y. Shen (Shanghai, China) ...................................................................... 3920
Study on vacuum membrane distillation of PP hollow fiber membranes used in concentrated seawater
from low-pressure reverse osmosis
F. Shao, L. Ni, Y. Zhang, Y. Chen, Z. Liu and Z. Cao (Tianjin, China) ............................... 3925
Iodide adsorption from aqueous solutions by bis(trimethoxysilylpropyl)amine
polycondensate/silver chloride composites
H. Zhang, Y. Hu, X. Ye, H. Liu, Q. Li, M. Guo and Z. Wu (Xining, China) ....................... 3930
Effect of on-line ultrasound on the properties of activated sludge mixed liquor and
the controlling of membrane fouling in SMBR
M. Li, Y. Wang and C. Gong (Beijing, China) ................................................................. 3938
Preparation and characterization of poly(tetrafluoroethylene–cohexafluoropropylene) (FEP)
hollow fiber membranes for desalination
Q.-L. Huang, C. Xiao, Z.-Q. Miao (Tianjin), X. Feng (Ontario, Canada)
and X.-Y. Hu (Tianjin, China) ......................................................................................... 3948
Competitive adsorption of Li, K, Rb, and Cs ions onto three ion-exchange resins
T. Guo, S. Wang, X. Ye, H. Liu, X. Gao, Q. Li, M. Guo and Z. Wu (Xining, China) .......... 3954
Study on preparation and performance characteristics of polyvinyl chloride-co-vinyl acetate-modified membranes on the nonwoven fabrics
W. Li, J. Zhang, Y. Xiao, Z. Wang, L. Shi, W. Yang, L. Cheng and N. Chen (Beijing, China) 3960
Prediction of impacts of fabrication conditions on the filtration performance of homemade
VC-co-VAc-OH microfiltration membrane by Support Vector Machine (SVM)
and W. Yang (Beijing, China) ........................................................................................................ 3970
Preparation and properties of polysulfone/polyacrylonitrile blend membrane and its modification
with hydrolysis
X. Zhang, C. Xiao and X. Hu (Tianjin, China) .................................................................................. 3979
Carbon nanotube and carbon nanofiber composite films grown on different graphite substrate
for capacitive deionization
Y. Liu, H. Li, C. Nie, L. Pan and Z. Sun (Shanghai, China) ................................................................. 3988

Selected papers presented at the Nonpoint Source (NPS) Workshops at the
Third International Conference on Rainwater Harvesting & Management, Goseong, Korea, 20–24 May 2012
and the Korea-China World Expo Exhibition Plan, Beijing Normal University, Beijing, China, 4–7 July 2012

Uncertainty in flow and water quality measurement data:
A case study in the Daning River watershed in the Three Gorges Reservoir region, China
Z. Shen, Q. Huang, Q. Liao, L. Chen, R. Liu and H. Xie (Beijing, China) ........................................... 3995
Determination of the number of storm events representing the pollutant mean concentration
in urban runoff
M.C. Maniquiz-Redillas, J.M.R. Mercado and L.-H. Kim (Cheonan, Korea) ........................................ 4002
Quantitative assessment and source apportionment of metal pollution in soil along Chao River
Y. Li, H. Gao, L. Mo, Y. Kong (Beijing) and I. Lou (Macau SAR, China) ............................................. 4010
Optimal resource utilization and ecological restoration of aquatic zones
in the coal mining subsidence areas of the Huaihe Plain in Anhui Province, China
K. Xie, Y. Zhang (Xuzhou), Q. Yi and J. Yan (Huainan, China) ........................................................... 4019
Post-treatment schemes of the outflow from hydrocyclone treating paved-road stormwater runoff
J. Yu (Nanjing, China), H. Yu (Guangzhou, China), Y. Chen, J. Cheng and Y. Kim (Seosan, Korea) ....... 4028
Adaptability of wastewater wetland models in estimating nutrient removal in a stormwater wetland
on dry days
H.B. Guerra, K. Park, S. Niu and Y. Kim (Seosan, Korea) ................................................................. 4035
Treatment of parking lot runoff by a tree box filter
F.K.F. Geronimo, M.C. Maniquiz-Redillas and L.-H. Kim (Cheonan, Korea) ...................................... 4044
Removal of phosphate and sulfate from electroless nickel–phosphorus plating bath with hydrotalcite
for the management of watershed
Y. Kamimoto, R. Ichino (Nagoya, Japan), Y. Kiso (Aichi, Japan), T. Hosotani (Tokyo, Japan),
K.-H. Kwon, K.-S. Min (Daegu, Korea) and Y.-J. Jung (Busan, Korea) ............................................. 4050
Waste sludge reduction with a pilot-scale membrane bioreactor for point source pollution management
Y. Kamimoto, T. Ozaki, K. Makino (Aichi, Japan), S. Ohchi (Kyoto, Japan), R. Ichino,
Y. Kiso (Aichi, Japan), K.-H. Kwon, K.-S. Min (Daegu, Korea), J.-H. Choi and
Y.-J. Jung (Busan, Korea) ................................................................................................................... 4056
Application of coagulation process for the treatment of combined sewer overflows (CSOs)
J.C. Jeon, K.H. Kwon (Daegu), L.H. Kim (Chungnamdo), J.H. Kim (Gwangju), Y.J. Jung (Busan)
and K.S. Min (Daegu, Korea) ........................................................................................................... 4063
Advanced total phosphorus removal approach: system design and combined sewer overflows (CSOs)
sludge application
H. Guo, S. Oh (Gwangju, Korea), S.M. Cha (Manoa, USA), S.W. Lee, A. Alaud-din, S. Wang
and J.H. Kim (Gwangju, Korea) ......................................................................................................... 4072
Performance comparison of two hybrid stormwater treatment systems having
different filter media configuration
F.K.F. Geronimo, M.C. Maniquiz-Redillas and L.-H. Kim (Chungnamdo, Korea) ............................... 4081
Monitoring of land use change impact on stormwater runoff and pollutant loading estimation
in Yongin watershed Korea
Evaluation of the different filter media in vertical flow stormwater wetland
Y. Chen, J. Cheng, S. Niu and Y. Kim (Chungnam, Korea) .............................................................. 4097
## Contents

**Desalination and Water Treatment 51/19–21 (2013) v–viii**

<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analysis of the characteristics of non-point pollutant runoff applied LID techniques in industrial area</td>
<td>T.S. Shon, M.E. Kim, J.S. Joo, D.J. Jo and H.S. Shin (Busan, Korea)</td>
<td>4107</td>
</tr>
<tr>
<td>Forecasting algal bloom (chl-a) on the basis of coupled wavelet transform and artificial neural networks at a large lake</td>
<td>M.E. Kim, T.S. Shon and H.S. Shin (Busan, Korea)</td>
<td>4118</td>
</tr>
<tr>
<td>Characterizing particle size distribution of nonpoint source pollutants in an agricultural area</td>
<td>S.M. Cha (Honolulu, USA), S.W. Lee, Y. Park and J.H. Kim (Gwangju, Korea)</td>
<td>4138</td>
</tr>
<tr>
<td>Characteristics of heavy metals in soil in infiltration splash blocks and rain gardens for management of roof runoff from apartment buildings</td>
<td>K.-h. Hyun and J.-m. Lee (Daejeon-Si, Korea)</td>
<td>4146</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retention of mycoestrogens with industrial nanofiltration modules</td>
<td>M. Dudziak (Gliwice, Poland)</td>
<td>4157</td>
</tr>
<tr>
<td>Ecotoxicological evaluation of wastewater in a municipal WWTP in Lisbon area (Portugal)</td>
<td>E. Mendone (Amadora), A. Picado, S.M. Paixa, L. Silva, M. Barbosa (Lisa)</td>
<td>4162</td>
</tr>
<tr>
<td>Implementation of the European Union’s Nitrates Directive in Turkey</td>
<td>U. Yetis, H. Yukseler (Ankara, Turkey), S. Valatka (Vilnius, Lithuania), S. Girgin (Ankara, Turkey), D. Semeniene (Vilnius, Lithuania), M. Kerestecioglu (Kongens Lyngby, Denmark) and M. Jacobsen (Sofia, Bulgaria)</td>
<td>4171</td>
</tr>
<tr>
<td>Analysis on energy–water nexus by Sankey diagram: the case of Beijing</td>
<td>G. Hu, X. Ou, Q. Zhang (Beijing, China) and V.J. Karplus (Cambridge, MA, USA)</td>
<td>4183</td>
</tr>
<tr>
<td>Waterpraxis as a tool supporting protection of water in the Sulejow Reservoir</td>
<td>A. Ziemsinska-Stolarska, I. Zbicinski, M. Imbierowicz and J. Skrzypski (Lodz, Poland)</td>
<td>4194</td>
</tr>
<tr>
<td>Exergy as a guide to allocate environmental costs for implementing the Water Framework Directive in the Ebro River</td>
<td>J. Uche, A. Martinez and B. Carrasquer (Zaragoza, Spain)</td>
<td>4207</td>
</tr>
<tr>
<td>Ecological footprint as a tool for integrated coastal zone management</td>
<td>S. Kessopoulou and D. Papatheochari (Volos, Greece)</td>
<td>4218</td>
</tr>
<tr>
<td>Model-based evaluations of operating parameters on CANON process in a membrane-aerated biofilm reactor</td>
<td>L. Vafajoo and M. Pazoki (Tehran, Iran)</td>
<td>4228</td>
</tr>
<tr>
<td>Dew, fog and rain water collectors in a village of S-Morocco (Idouasskessou)</td>
<td>O. Clus (Clapiers), I. Lekouch, M. Muselli, I. Milimouk-Melntycheau and D. Beysens (Paris, France)</td>
<td>4235</td>
</tr>
<tr>
<td>Transboundary water resources management: A multidisciplinary approach</td>
<td>T. Kupusovic (Sarajevo, Bosnia and Herzegovina)</td>
<td>4239</td>
</tr>
</tbody>
</table>

**Author Index**

4241