



**Contents**

**Volume 34**

Editorial .....	1
Study on air-bubbling strengthened membrane distillation process W. Chunrui, J. Yue, C. Huayan, W. Xuan, G. Qijun and L. Xiaolong (Tianjin, P.R. China) .....	2
Preparation and characterization of surface-modified zeolite-polyamide thin film nanocomposite membranes for desalination H. Dong, X.-Y. Qu, L. Zhang, L.-H. Cheng, H.-L. Chen and C.-J. Gao (Hangzhou, P.R. China) .....	6
Removal of harmful anions from water in the anion-exchange membrane process J.A. Wiśniewski and S. Kliber (Wroclaw, Poland) .....	13
Preparation of high-flux thin film nanocomposite reverse osmosis membranes by incorporating functionalized multi-walled carbon nanotubes L. Zhang, G.-Z. Shi, S. Qiu, L.-H. Cheng and H.-L. Chen (Hangzhou, P.R. China) .....	19
Time dependence of transport number ratio during electrodialysis process R. Takagi (Kobe, Japan), S. Mulyati, N. Arahman (Banda Aceh, Indonesia), Y. Ohmukai, T. Maruyama and H. Matsuyama (Kobe, Japan) .....	25
The performance improvement of hollow fiber composite reverse osmosis membranes by post-treatments L. Ni, J. Wang, Y. Zhang, J. Meng and Y. Zhang (Tianjin, P.R. China) .....	32
A novel method to improve flux of nanofiltration composite membrane prepared by interfacial polymerization Z. Yong (Qindao, China), L. Zhaokui (Tianjin, China), D. Zhenan, W. Fadong (Hangzhou, China) and G. Congjie (Qindao, China) .....	37
Reverse osmosis desalination membrane formed from weak polyelectrolytes by spin assisted layer by layer technique F. Fadhillah, S.M. Javaid Zaidi, Z. Khan, M. Khaled (Dhahran, Saudi Arabia) and P.T. Hammond (Cambridge, USA) .....	44
Nanofiltration vs. reverse osmosis for the removal of emerging organic contaminants in water reuse V. Yangali-Quintanilla (Delft, The Netherlands), S.K. Maeng (Seoul, The Republic of Korea), T. Fujioka, M. Kennedy (Delft, The Netherlands), Z. Li (Jeddah, Saudi Arabia) and G. Amy (Delft, The Netherlands) .....	50
Combined TiO <sub>2</sub> membrane filtration and ozonation for efficient water treatment to enhance the reuse of wastewater Y. Hu (Nanjing, P.R. China), N. Milne, S. Gray (Melbourne, Australia), G. Morris (Adelaide, Australia), W. Jin (Nanjing, P.R. China), M. Duke and B. Zhu (Melbourne, Australia) .....	57
Effects of channel spacers on direct contact membrane distillation Y. Yun, J. Wang, R. Ma (Beijing, P.R. China) and A.G. Fane (Sydney NSW, Australia) .....	63
Nanofiltration of uncharged solutes: simultaneous effect of the polarization and membrane layers on separation E. Nagy (Veszprém, Hungary) .....	70
Study on removal of organic matters in water by PVA modified PA-TFC nanofiltration membrane Q. An, F. Li, Y. Ji, Z. Zhang and H. Chen (Hangzhou, China) .....	75
Application of integrated microfiltration and PAC adsorption for the removal of humic acid as a pretreatment in seawater desalination R.C. Eusebio, J.-S. Kang and H.-S. Kim (Kyonggi, Korea) .....	81
Role of EPS in membrane fouling of a submerged anaerobic-anoxic-oxic (A-A-O) membrane bioreactor for municipal wastewater treatment Z. Wang, Z. Wu, S. Tang and S. Ye (Shanghai, P.R. China) .....	88
Chemical cleaning of ultrafiltration membrane fouled by an activated sludge effluent S.T. Nguyen and F.A. Roddick (Melbourne, Australia) .....	94

Random copolymer films as potential antifouling coatings for reverse osmosis membranes A. Matin (Dhahran, Saudi Arabia), G. Ozaydin-Ince (Cambridge, USA), Z. Khan, S.M.J. Zaidi (Dhahran, Saudi Arabia), K. Gleason, D. Eggenpiller (Cambridge, USA).....	100
Improving pollutant removal and membrane performance via pre-treatment with a specific formulation of polysilicato-iron T. Tran, M. Hoang, T. Duong and B. Bolto (Clayton South MDC, Australia) .....	106
The influence of particles on biofouling behavior in spiral wound membrane elements E.R. Cornelissen (Nieuwegein, The Netherlands), A. Berteloot (Mulhouse, France), D. Harmsen, E. Beerendonk and D. van der Kooij (Nieuwegein, The Netherlands).....	112
Influence of sludge rheological properties on the membrane fouling in submerged membrane bioreactor H. Azami, M.H. Sarrafzadeh and M.R. Mehrnia (Tehran, Iran) .....	117
Electro-microfiltration of the mineral particles in dairy processing F.G.F. Qin (Dong Guan City, China), J. Mawson (New Zealand) and X.A. Zeng (Guangzhou, China).....	123
Effect of addition of different additives on overall performance of bioflim-MBR (BF-MBR) I. Ivanovic and T. Leiknes (Trondheim, Norway) .....	129
Formation of honeycomb structure films from polysulfonein a highly humid atmosphere Y. Yun, W. Xiang, L. Wang and Y. Hua (Beijing, China) .....	136
Performance evaluation of microfiltration with electrocoagulation and chemical coagulation pretreatment G. Sharma, H.K. Shon, R. Aryal and S. Phuntsho (Broadway, Australia) .....	141
Characteristics of proteins involved in membrane fouling in membrane bioreactors (MBRs) treating municipal wastewater: the application of metaproteomic analyses T. Miyoshi, T. Aizawa, K. Kimura and Y. Watanabe (Sapporo, Japan).....	150
In-situ characterization of fouling layers: which tool for which measurement? P. Loulergue (Toulouse, France), C. André, D. Laux, J.-Y. Ferrandis (France), C. Guigui and C. Cabassud (Toulouse, France).....	156
Influence of suspension concentration and transmembrane pressure on microfiltration of montmorillonite based suspension G. Müller, K. Janošková, T. Bakalár and M. Búgel (Košice, Slovakia).....	163
Potential of fluorescence excitation emission matrix (FEEM) analysis for foulant characterisation in membrane bioreactors (MBRs) N. Subhi, R. Henderson, R.M. Stuetz, V. Chen and P. Le-Clech (Sydney, Australia).....	167
Investigation of microfiltration for pretreatment of whey concentration H. Ye, J. Lei, Y. Zhang, H. Li, G. Li, Z. Cao and L. Xie (Tianjin, China).....	173
Nanofiltration membranes enhanced with TiO <sub>2</sub> nanoparticles: a comprehensive study A. Sotto (Madrid, Spain), A. Boromand (Leuven, Belgium), S. Balta (Galati, Romania), S. Darvishmanash (Leuven, Belgium), J. Kim (Incheon, Republic of Korea) and B. Van der Bruggen (Leuven, Belgium) .....	179
Properties and crystallization behavior of poly (vinylidene fluoride) (PVDF)/thermoplastic polyurethane elastomer (TPU) blends J. Cheng, S. Wang, S. Chen, J. Zhang (Nanjing, China) and X. Wang (Beijing, China).....	184
Development of a multicomponent mass transport model for predicting CO <sub>2</sub> separation behavior from its mixture with natural gas and hydrogen using zeolite membranes M.M. Demochali, A.A. Ghoreyshi and G. Najafpour (Babol, Iran) .....	190
Optimization of membrane structure using the spin-coating method Z. Wang, J. Ma and P. Wang (Harbin, P.R. China) .....	197
Kinetics of mass transfer during vapour-induced phase separation (VIPS) process and its influence on poly-(vinylidene fluoride) (PVDF) membrane structure and surface morphology P.K. Annamalai, C. Pochat-Bohatier, D. Bouyer, C.-L. Li, A. Deratani (Montpellier, France) and D.-M. Wang (Taipei, Taiwan).....	204
Mixed matrix membranes based on hyperbranched polyimide and mesoporous silica for gas separation P. Sysel, E. Minko, M. Hauf, K. Friess, V. Hynek, O. Vopicka, K. Pilnacek and M. Sipek (Prague, Czech Republic).....	211
Preparation and characterization of a new kind of UV-grafted ion-recognition membrane L. Wang, C. Tang and Y. Yun (Beijing, China).....	216

Fabrication of nickel filter by uniaxial pressing process for gas purification: ceramic coating effect for hot gas cleaning S.-K. Ryi, K.-R. Hwang and J.-S. Park (Daejeon, South Korea) .....	222
Factors affecting preparation of photocatalytic TiO <sub>2</sub> metal membrane with reactive nano-structured tubes W.-Y. Choi (Gangwon-Do, Korea), Y.-W. Lee (Gyeonggi-Do, Korea) and J.-O. Kim (Gangwon-Do, Korea) ....	229
Preparation of hybrid ion channel membrane for recognizing and transporting sodium ion L. Wang, X. Zhang and Y. Yun (China) .....	234
Food polymer pullulan- $\kappa$ -carrageenan composite membrane performed smart function both on mass transfer and molecular size recognition P. Wu and M. Imai (Japan) .....	239
Photocatalytic degradation of p-xylene over doped titania thin film D.T. Phuong (Hanoi, Vietnam), N.Q. Tuan (Lam Dong, Vietnam), B.T.H. Linh, L.G. Hy, T.M. Cuong, T.T.K. Hoa (Hanoi, Vietnam), L.M. Cam (Tu Liem, Ha Noi) and V.A. Tuan (Hanoi, Vietnam).....	246
Investigation of the dispersion of nanoclays into PVDF for enhancement of physical membrane properties C.Y. Lai, A. Groth, S. Gray and M. Duke (Victoria, Australia) .....	251
Dominant impact of the $\alpha$ -L-guluronic acid chain on regulation of the mass transfer character of calcium alginate membranes K. Kashima and M. Imai (Japan) .....	257
Gas permeation properties of amine loaded mesoporous silica membranes for CO <sub>2</sub> separation M. Miyamoto, A. Takayama, S. Uemiya (Gifu, Japan) and K. Yogo (Kyoto, Japan) .....	266
Permeabilities of solvents through epoxy membranes prepared via chemically induced phase separation Y.-S. Luo, C.-Y. Wang, K.-C. Cheng, T.-H. Chuang and W. Guo (Taipei, Taiwan) .....	272
Permeability calculation of sphere-packed porous media using dissipative particle dynamics Y. Shi (Hawaii, USA), Y. Taek Lee (Gyeonggi-do, Korea) and A.S. Kim (Hawaii, USA).....	277
Biofouling in membrane devices treating water with different salinities: a modeling study A.I. Radu, J.S. Vrouwenvelder (Leeuwarden, The Netherlands), M.C.M. van Loosdrecht and C. Picioreanu (Delft, The Netherlands).....	284
Pervaporation of aqueous dilute 1-butanol, 2-propanol, ethanol and acetone using a tubular silicalite membrane K. Sakaki, H. Habe, H. Negishi and T. Ikegami (Ibaraki, Japan) .....	290
Design and tuning of feedback controllers: effects on proteins ultrafiltration process modeled by a hybrid system S. Curcio, V. Calabrò and G. Iorio (Rende (CS), Italy) .....	295
Removal of refractory compounds by ultraviolet and anodized TiO <sub>2</sub> metal membrane with reactive nano-sized cylindrical tubes on its surface J. Chung (Gyeonggi-Do, Korea) and J.-O. Kim (Gangwon-Do, Korea) .....	304
Preparation, recognition characteristics and properties for quercetin molecularly imprinted polymers L. Yu, Y. Yun, W. Zhang and L. Wang (Beijing, China) .....	309
Preparation and characterization of PVdF nanofiber ion exchange membrane for the PEMFC application W.G. Jang, J. Hou and H. sik Byun (Daegu, Republic of Korea).....	315
Water droplets as templates for ordered honeycomb-structured films prepared from PS-b-Peb-b-PS-MA Y. Yun, Y. Hua, J. Wang, S. Wang, W. Xiang and L. Wang (China).....	321
Concentration of ionic liquids from aqueous ionic liquids solution using electro dialyzer H. Meng, L. Xiao, L. Li and C. Li (Beijing, P.R. China).....	326
Treatment of tailings water for re-use in an antimony mine M. Mullett (Perth, Australia) .....	330
Various operating conditions affecting the performance of aerobic digestion coupled with membrane filtration R.C. Eusebio (Kyonggi-Do, Korea), H.-G. Kim (Incheon, Korea), Y.-H. Cho (Kyonggi-Do, Korea), T.-H. Chung (Seoul, Korea) and H.-S. Kim (Kyonggi-Do, Korea) .....	336
Fabrication of polyimide composite film with both magnetic and surface conductive properties J. Zhan, D. Wu, C. Chen, J. Li, F. Pan, J. Chen and X. Zhan (Beijing, P.R. China) .....	344
Reclamation of car washing wastewater by a hybrid system combining bio-carriers and non-woven membranes filtration S.-K. Hsu, C.-H. Chen and W.-K. Chang (Hsinchu, Taiwan).....	349

Synthesis of novel PVA crosslink mixed matrix scaffolds and adsorption of copper ions from waste water T.-Y. Hsien, Y.-L. Liu, C.-H. Huang, P.-H. Lin and D.-M. Wang (Taipei, Taiwan) .....	354
Membrane fouling characterization and cleaning adaptation in wastewater reclamation plants: from plant to lab X. Bernat, G. Prats, B. Lefèvre, O. Gibert and J. Tobella (Barcelona, Spain) .....	361
Ceramic membrane behaviour in anionic dye removal by ultrafiltration K. Majewska-Nowak and J. Kawiecka-Skowron (Wrocław, Poland) .....	367
Study on treating of NH <sub>3</sub> -N wastewater by membrane technology in a pilot plant Y. Yun (Sydney, Australia), X. Zhang and Y. Wang (Beijing, China).....	374
Fouling and cleaning of gas-filled membrane for cyanide removal from acrylonitrile wastewater J. Wu, J. Wang, H. Liu and S. He (Beijing, China) .....	382
Zero discharge fermentation plant design T. Handelsman, J. Kavanagh, H. Coster and G. Barton (Sydney, Australia).....	389
Removal of nitrate from groundwater using the technology of electrodialysis and electrodeionization J. Bi, C. Peng, H. Xu and A.-S. Ahmed (Qingdao, China) .....	394
Strategies to enhance the removal of the persistent pharmaceutically active compound carbamazepine by membrane bioreactors X. Li, F.I. Hai, N. Tadkaew, S. Gilbertson and L.D. Nghiem (NSW, Australia).....	402
Wastewater reuse through RO: a case study of four RO plants producing industrial water R. Shang (Delft, The Netherlands), W.B.P. van den Broek (Rotterdam, The Netherlands), S.G.J. Heijman (Delft, The Netherlands), S. van Agtmaal (Rotterdam, The Netherlands) and L.C. Rietveld (Delft, The Netherlands) .....	408
Preferential fouling of Natural Organic Matter (NOM) fractions in submerged low-pressure membrane filtration G.S. Raspati, H.N. Høvik and T. Leiknes (Norway) .....	416
Effects of operating conditions on hollow fiber membrane systems used as pretreatment for spandex wastewater reverse osmosis Y. Yun (Beijing, China), P. Le-Clech (Sydney, Australia), C. Tang (Beijing, China) and J. Mao (Wenzhou, China) .....	423
Author Index.....	429