

***Selected papers presented at the conference on Membrane and Electromembrane Processes  
MELPRO 2014***

***18–21 May 2014, Prague, Czech Republic***

Foreword

L. Novák and M. Bleha (Česká Lípa, Czech Republic) .....	3129
Toward sustainability	
B. Mack (Waltham, MA, USA) .....	3131
Electrodialysis of salts from heat-transfer medium solutions using ion-exchange membranes	
T. Kotala and J. Kinčl (Stráž pod Ralskem, Czech Republic) .....	3136
Innovative process simulation software not only for electromembrane processes	
M. Bobák (Stráž pod Ralske), D. Šnita, J. Hrdlička, V. Pelc (Prague) and T. Kotala (Stráž pod Ralske, Czech Republic) .....	3141
Selective composite cation-exchange membrane based on S-PVDF	
H. Farrokhzad, T. Van Gerven and B. Van der Bruggen (Leuven, Belgium) .....	3146
Synthesis and characterization of hybrid membranes based on sulfonated poly(ether ether ketone) (SPEEK) and polysiloxane	
J.C. Ruiz-Segura, L.G. Mendoza-Reyes, E.R. de San Miguel, A.L. Ocampo and J. de Gyves (Mexico, Mexico) .....	3153
Increasing selectivity of a heterogeneous ion-exchange membrane	
J. Křivčík, D. Neděla, J. Hadrava (Stráž pod Ralskem) and L. Brožová (Prague, Czech Republic) .....	3160
Ion exchange membranes based on vinylphosphonic acid-co-acrylonitrile copolymers for fuel cells	
J. Žitka, M. Bleha, J. Schauer, B. Galajdová, M. Paidar, J. Hnát and K. Bouzek (Prague, Czech Republic) .....	3167
Electrodialytic concentration of NaCl for the chlor-alkali industry	
K. Mitko, W. Mikołajczak and M. Turek (Gliwice, Poland) .....	3174
Modification of the organoleptic properties of beverages	
R. Halama, T. Kotala (Stráž pod Ralskem) and J. Vrána (Prague, Czech Republic) .....	3181
Current–voltage curves of ion-exchange membranes in electrodialysis of solutions containing alkyl aromatic amino acids and various mineral salts	
A.Yu. Kharina, V.I. Kabanova and T.V. Eliseeva (Voronezh, Russia) .....	3191
Antibacterial properties of membranes modified by acrylic acid with silver nanoparticles	
M. Bojarska and W. Piątkiewicz (Warsaw, Poland) .....	3196
Alkaline water electrolysis with perfluorinated cation-selective membrane	
M. Paidar, K. Vazač, M. Roubalík and K. Bouzek (Prague, Czech Republic) .....	3203
Chronopotentiometry and impedancemetry of homogeneous and heterogeneous ion-exchange membranes	
S. Mareev, A. Kozmai, V. Nikonenko (Krasnodar, Russia), E. Belashova (Krasnodar, Russia) and Montpellier, France), G. Pourcelly and P. Sistat (Montpellier, France) .....	3207
Electrodialysis desalination process in conditions of mixed convection	
A. Pismenskiy, M. Urtenov, A. Kovalenko and S. Mareev (Krasnodar, Russia) .....	3211
Ion-exchange membrane reinforcing	
J. Křivčík, D. Neděla and R. Válek (Stráž pod Ralskem, Czech Republic) .....	3214
Relationships between transport and physical–mechanical properties of ion exchange membranes	
E. Stránská (Stráž pod Ralskem, Czech Republic) .....	3220
The influence of activation of heterogeneous ion-exchange membranes on their electrochemical properties	
L. Brožová (Prague), J. Křivčík, D. Neděla (Stráž pod Ralskem), V. Kysela and J. Žitka (Prague, Czech Republic) .....	3228
Cation-exchange membrane modified by inorganic short fibres	
R. Válek and J. Zachovalová (Stráž pod Ralskem, Czech Republic) .....	3233

Recovery of H <sub>2</sub> SO <sub>4</sub> and NaOH from Na <sub>2</sub> SO <sub>4</sub> by electrodialysis with heterogeneous bipolar membrane J. Kroupa (Pardubice), J. Kinčl (Stráž pod Ralskem) and J. Cakl (Pardubice, Czech Republic) .....	3238
Membrane and AOP processes – their application and comparison in treatment of wastewater with high organics content N. Savchuk and P. Krizova (Stráž pod Ralskem, Czech Republic) .....	3247
Biocide modification of ultrafiltration membranes using nanofiber structures J. Dolina, T. Jiříček (Liberec) and T. Lederer (Liberec and Prague, Czech Republic) .....	3252
Clogging of the electrodeionization chamber J. Marek (Liberec), M. Šimunkova (Stráž pod Ralskem) and H. Parschova (Prague, Czech Republic) .....	3259
Electrode overvoltage in low concentrated electrolytes M. Doležel and L. Machuča (Stráž pod Ralskem, Czech Republic) .....	3264
Influence of water content on properties of a heterogeneous bipolar membrane D. Neděla, J. Křivčík, R. Válek, E. Stránská (Stráž pod Ralskem) and J. Marek (Pardubice, Czech Republic)...	3269
Using foil membranes for demineralization of whey by electrodialysis J. Ečer, J. Kinčl (Stráž pod Ralskem) and L. Čurda (Prague, Czech Republic) .....	3273
The development of electrodialysis modules for specific applications L. Václavík, N. Káňavová, L. Machuča, M. Doležel, M. Amrich and D. Tvrzník (Stráž pod Ralskem, Czech Republic) .....	3278
Gas transport properties of novel mixed matrix membranes made of titanate nanotubes and PBI or PPO V. Giel, B. Galajdová, D. Popelková, J. Kredatusová, M. Trchová, E. Pavlova, H. Beneš (Prague), R. Válek (Stráž pod Ralskem) and J. Peter (Prague, Czech Republic) .....	3285
Enhancement of productivity of humidification-dehumidification desalination using modified air heater C. Muthusamy (Virudhunagar), M. Gowtham, S. Manickam, M. Manjunathan and K. Srithar (Madurai, India) .....	3294
Factors influencing critical flux of UF membrane in drinking water treatment Lu Qi (Beijing), Xiang Zheng and Guibai Li (Harbin, China) .....	3305
Study on the removal of nitrate in groundwater from Căpuș, Cluj county by natural zeolite of Mir id and granular activated carbon S.C. Moșneag, V. Popescu, C. Neamțu and G. Borodi (Cluj-Napoca, Romania) .....	3313
Study of hexamine removal by activated carbon modified with magnetic iron oxide nanoparticles for application in treatment of hexamine industrial wastewater M. Taghdiri (Tehran), N. Zamani (Zahedan) and S.A. Mousavian (Tabriz, Iran) .....	3323
Modelling and optimization of the coagulation of highly concentrated coking wastewater by ferrous sulfate using a response surface methodology Chong Lin, Jianbo Liao and Chaohai Wei (Guangzhou, China) .....	3334
Degradation of burazol blue ED by heterogeneous Fenton process: simultaneous optimization by central composite design U. Akay and E.A. Demirtas (Eskisehir, Turkey) .....	3346
The effects of substrate type, HRT and reed on the lead removal in horizontal subsurface-flow constructed wetland S. Taheri Ghannad, S. Boroomandnasab, H. Moazed and N. Jaafarzadeh (Ahvaz, Iran) .....	3357
Seasonal variation of dissolved heavy metals in the reservoir of Shahid Rajaei dam, Sari, Iran S.M. Shoaee, S.A. Mirbagheri (Tehran), A. Zamani and J. Bazargan (Zanjan, Iran) .....	3368
Adsorption of cadmium onto modified nanosized magnetite: kinetic modeling, isotherm studies, and process optimization A.A. Babaei (Ahvaz), M. Bahrami (Fasa), A. Farrokhian Firouzi, A. Ramazanpour Esfahani (Ahvaz) and L. Alidokht (Tabriz, Iran) .....	3380
Comparison study of phenol degradation using cobalt ferrite nanoparticles synthesized by hydrothermal and microwave methods L. Roshanfekr Rad (Guilan and Tehran), B. Farshi Ghazani (Tehran), M. Irani (Guilan and Tehran), M. Sadegh Sayyafan (Shiraz) and I. Haririan (Tehran, Iran) .....	3393
Factorial design analysis for biosorption of Reactive Red-84 dye using fermentation spent waste biomass, biosorbent regeneration and desorbed dye photo-degradation using TiO <sub>2</sub> nanoparticles N.Sh. El-Gendy (Cairo, Egypt), S.S. Abu Amr (Nibong Tebal, Malaysia), R.A. El-Salamony and H.N. Nassar (Cairo, Egypt) .....	3403
Author Index .....	3414