

Tuesday, 10<sup>th</sup> July 2018

**Poster session I: Gas and vapor separation, Mixed matrix membranes, Membrane reactors and bioreactors, Micro-and Ultrafiltration, Membranes for drinking and process water production, Membranes for wastewater treatment, Hybrid membrane processes, Modelling and simulation, Inorganic membranes, Membrane contactors, Facilitated transport.**

## Gas and vapor separation

**P1. [11] Characterization of gas transport in polymers with NMR**

*Julio Guzmán, Leoncio Garrido*

Departamento de Química Física, Instituto de Ciencia y Tecnología de Polímeros, CSIC, Spain

**P2. [45]. Preparation of bicontinuous metal organic framework membranes for gas separation**

*P. Tonn\*, W.A. Goedel\**

\*Physical Chemistry, TU Chemnitz, Germany

**P3. [62]. MFI membrane applications in water rich and lean gas streams**

*S. Wohlrab\*, A. Wotzka\*, J. Wang\*\**

\*Leibniz Institute for Catalysis, Germany

\*\*Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences, China

**P4. [98]. Thin-film composite membranes (TFC) based on PTMSP loaded with porous aromatic frameworks: study of aging**

*D.S.Bakhtin\*, L.A.Kulikov\*\*, S.A.Legkov\*, V.S.Khotimskiy\*, I.S. Levin\*, I.L.Borisov\*, A.L.Maksimov\*,\*\*, V.V.Volkov\*, E.A.Karakhanov\*\*, A.V.Volkov\**

\*A.V.Topchiev Institute of Petrochemical Synthesis RAS, Russian Federation

\*\*Moscow State University, Moscow, Russian Federation

**P5. [133]. Composite ionic liquid-Pebax® 2533 membranes with enhanced properties towards H<sub>2</sub>/CO simultaneous recovery**

*\*F. Pardo, \*G. Zarca, \*A. Urtiaga*

\*Department of Chemical and Biomolecular Engineering, University of Cantabria, Spain

**P6. [155]. Surface functionalized UiO-66/Pebax-based ultrathin composite hollow fiber gas separation membranes**

*P. Sutrisna<sub>1</sub>, J. Hou<sub>1,2</sub>, H. Li<sub>1</sub>, D D'Alessandro<sub>3</sub> and V. Chen<sub>1</sub>*

1. UNESCO Centre for Membrane Science and Technology, School of Chemical Engineering, University of New South Wales, Australia

2. Department of Materials Science and Metallurgy, University of Cambridge, UK

3. School of Chemistry, The University of Sydney, Australia

**P7. [163]. Microstructured hollow fibre dual phase molten salt-ceramic membranes for CO<sub>2</sub> separation**

*M. Kazakli\**, *A. Gouveia Gil\**, *G.A. Mutch\**, *G. Triantafyllou\**, *T. Li\*\**, *B. Wang\*\**, *K. Li\*\**, *I.S. Metcalfe\**

\*School of Engineering, Newcastle University, United Kingdom

\*\*Department of Chemical Engineering, Imperial College London, United Kingdom

**P8. [189]. Polyalkylmethylsiloxane membranes: enhanced C<sub>3</sub><sup>+</sup> hydrocarbon selectivity**

*E.A. Grushevenko*, *A.A. Knyazeva*, *D.S. Bakhtin*, *I.L. Borisov*, *A.V. Volkov*

A.V.Topchiev Institute of Petrochemical Synthesis RAS, Russia

**P9. [205]. New approaches to enhance the CO<sub>2</sub> selectivity of fast permeable gas separation membranes**

*Marius Sandru<sup>1</sup>*, *Per Stenstad<sup>1</sup>*, *Eugenia Sandru<sup>1</sup>*, *Taek Joong Kim<sup>1</sup>*, *Jing Deng<sup>2</sup>*, *Liyuan Deng<sup>2</sup>*

1) SINTEF Materials and Chemistry, Trondheim, Norway

2) NTNU, Chemical Engineering, Trondheim, Norway

**P10. [208]. Facilitated transport membrane with amino acid salts as mobile carrier for CO<sub>2</sub> capture**

*Zhongde Dai*, *Jing Deng*, *Luca Ansaloni*, *Saravanan Janakiram*, and *Liyuan Deng\**

Department of Chemical Engineering, Norwegian University of Science and Technology, Trondheim, Norway

**P11. [214] Sorption and pervaporation study of mixture methanol/dimethyl carbonate on poly(etheretherketone) (PEEK-WC) membrane**

*Wenqi Li\**, *Francesco Galiano\*\**, *Figoli Alberto\*\**, *Julien Estager\*\*\**, *Damien P. Debecker\*\*\*\**, *Patricia Luis\**

\*Materials & Process Engineering (iMMC-IMAP), Université catholique de Louvain, Belgium

\*\*Research Institute on Membrane Technology (ITM-CNR), Italy

\*\*\*Certechn, Centre de ressources technologiques en chimie, Seneffe, Belgium

\*\*\*\*Institute of Condensed Matter and Nanoscience (IMCN), Université catholique de Louvain, Belgium

**P12. [235]. Applicability of PolyActive™ thin film composite membranes for CO<sub>2</sub> separation from C<sub>2</sub>H<sub>4</sub> containing multi-component gas mixtures at pressures up to 30 bar**

*K. Schuldt\**, *J. Pohlmann\**, *S. Shishatskiy\**, *T. Brinkmann\**

\*Helmholtz-Zentrum Geesthacht, Institute of Polymer Research, Germany

**P13. [250]. Polyetherimide with ZIFs-fillers membranes for CO<sub>2</sub> selectivity**

*L.F. del Castillo\**, *J. Vega\*\**, *A. A. Lemus\*\**, *J.A.I. Díaz\*\**, *A. Andrio\*\*\**, *R. J. Gavara\*\*\*\**, *V. Compañ. \*\*\*\*\**

\*Departamento de Polímeros, Instituto de Investigaciones en Materiales, Universidad Nacional Autónoma de México (UNAM), México

\*\*Centro de Investigación en Ciencia Aplicada y Tecnología Avanzada. Unidad Legarúa. Instituto Politécnico Nacional, México

\*\*\*Departamento de Física aplicada. Universitat Jaume I, Castellón, España.

\*\*\*\*Institute of Agrochemistry and Food Technology, CSIC, Valencia, Spain

\*\*\*\*\*Departamento de Termodinámica Aplicada. Escuela Técnica Superior de Ingenieros Industriales (ETSII). Universidad Politécnica de Valencia, Spain

**P14. [299]. Novel poly(ionic liquid)-based mixed matrix membranes for hydrogen purification**

*A. R. Nabais\**, *J. G. Crespo\**, *I. M. Marrucho\*\**, *L. C. Tomé\*\*\**, *L. A. Neves\**

\*LAQV/REQUIMTE, Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa, Caparica, Portugal

\*\*Centro de Química Estrutural, Departamento de Engenharia Química, Instituto Superior Técnico, Universidade de Lisboa, Portugal.

\*\*\*Instituto de Tecnologia Química e Biológica António Xavier, Universidade Nova de Lisboa, Portugal

**P15. [309]. Optimization and evaluation of non-porous membrane contactor for CO<sub>2</sub> capture using amine blend solvents**

*L. Ansaloni*, *V.E. Andreassen*, *H.K. Knuutila*, *L. Deng*

Department of Chemical Engineering, Norwegian University of Science and Technology, Norway

**P16. [323]. Interplay between nanostructure and water vapor transport in block copolymer membranes**

*Faheem Hassan Akhtar, Klaus–Viktor Peinemann*

\*Advanced Membranes & Porous Materials Center, King Abdullah University of Science & Technology (KAUST), Kingdom of Saudi Arabia

**P17. [325]. A ground breaking polymer blend for CO<sub>2</sub>/N<sub>2</sub> separation**

*Saeed Mazinani\*, Rouzbeh Ramezani\*\*, Ahmad Taghzade Damanabi\*\*\*, Siavash Darvishmanesh\*, Bart Van der Bruggen\**

\*Department of Chemical Engineering, KU Leuven, Leuven, Belgium

\*\*Department of Chemical and Environmental Engineering, University of Genoa, Italy

\*\*\*Department of Chemical Engineering, Urmia University of Technology, Iran

**P18. [342]. Microstructural investigation of La<sub>0.6</sub>Sr<sub>0.4</sub>Co<sub>0.2</sub>Fe<sub>0.8</sub>O<sub>3-δ</sub> after long-term operation in the presence of CO<sub>2</sub>-rich atmosphere**

*F. Drago\*, P. Pinacci\**

\*Ricerca sul Sistema Energetico S.p.A., Milano, ITALY

**P19. [351]. Experimental characterization and modelling of the sorption of CO<sub>2</sub>/CH<sub>4</sub> mixtures in thermally rearranged (TR) HAB-6FDA**

*E. Ricci\*, F.M. Benedetti\*, M.E. Dose\*\*, M.G. De Angelis\*, B.D. Freeman\*\*, D.R. Paul\*\**

\*University of Bologna, Italy

\*\*University of Texas at Austin, USA

**P20. [353]. Matrimid®5218 dense membrane for the separation of azeotropic MeOH-MTBE mixtures by pervaporation**

*R. Castro-Muñoz\*, \*\*, \*\*\*, F. Galiano\*, V. Fila\*\*, E. Drioli\*, A. Figoli\**

\*Institute on Membrane Technology, ITM-CNR, Italy

\*\*University of Chemistry and Technology Prague Technická, Czech Republic

\*\*\*Nanoscience Institute of Aragon (INA), Universidad de Zaragoza, Spain

**P21. [392]. Improvement of the gas separation performance in Claisen thermally rearranged (CTR) polymers**

*D. Meis\*, A. Tena\*, S. Neumann\*, P. Georgopoulos\*, T. Emmler\*, S. Rangou\*, S. Shishatskiy\*, V. Filiz\*, V. Abetz\*, \*\**

\*Helmholtz-Zentrum Geesthacht, Institute of Polymer Research, Germany

\*\*University of Hamburg, Institute of Physical Chemistry, Germany

**P22. [397]. Purification of flue gas by using the water condensing membrane**

*Andrea Žitková, Jiří Vejražka, Pavel Izák*

Institute of Chemical Process Fundamentals of the Czech Academy of Sciences, Czech Republic

**P23. [402]. Gas diffusion characteristics as criteria of nonequilibrium state of amorphous glassy polymers**

*A. Alentiev, N. Belov, S. Chirkov, Yu. Yampolskii*

A.V. Topchiev Institute of Petrochemical Synthesis of RAS, Russia

**P24. [420]. Enhanced selectivity of carbon molecular sieve membranes by an addition of iron compounds to the precursor**

*I. Kumakiri\*, K. Tamura\*, Y. Sasaki\*\*, K. Tanaka\*, H. Kita\**

\*Graduate School of Sciences and Technology for Innovation, Yamaguchi University, Japan

\*\*Japan Fine Ceramics Center (JFCC), Japan

**P25. [446]. Theoretical analysis of input errors for evaluation of vapour flux**

*L. Morávková, P. Dytrych, K. Machanová, Z. Petrusová*

Czech Academy of Sciences, Institute of Chemical Process Fundamentals, Czech Republic

**P26. [467]. Oriented-ZIF L/PEBAX MMMs for CO<sub>2</sub>/N<sub>2</sub> Separation**

*Fatma Şahin<sub>1,2</sub>, Berna Topuz<sub>3</sub>, Halil Kalıpçılar<sub>1</sub>*

1. Chemical Engineering Department, Middle East Technical University, Turkey
2. Chemical Engineering Department, Hitit University, Turkey
3. Chemical Engineering Department, Ankara University, Turkey

**P27. [470]. Oxygen Mass Transfer in Oxygen/Membrane/Water Flow Systems**

*M. Faria\**, *C. Moreira\**, *V. Semião\*\**, *M. N. de Pinho\**

\*CeFEMA, Chemical Engineering Department, Instituto Superior Técnico, Universidade de Lisboa, Portugal

\*\*IDMEC, Mechanical Engineering Department, Instituto Superior Técnico, Universidade de Lisboa, Portugal

**P28. [504]. Metathesis and addition polynorbornenes bearing trialkoxysilyl groups: synthesis and gas permeation properties**

*D.A. Alentiev,<sup>a</sup> M.V. Bermeshev,<sup>a,b</sup> L.E. Starannikova,<sup>a</sup> M.P. Filatova,<sup>a</sup> Yu.P. Yampolskii,<sup>a</sup> E.Sh. Finkelshteina*

a. A.V. Topchiev Institute of Petrochemical Synthesis of RAS, Russia

b. D.I. Mendeleev University of Chemical Technology of Russia, Russia

**P29. [511]. PEG-based membranes with dual cross-linking networks for enhanced CO<sub>2</sub> separation**

*Jing Deng\**, *Zhongde Dai\**, *Junbo Yu\**, *Marius Sandru\*\**, *Liyuan Deng\**

\*Department of Chemical Engineering, Norwegian University of Science and Technology, Norway

\*\*SINTEF Materials and Chemistry, Norway

**P30. [527]. Polyvinylalcohol/Nanocellulose composite membranes for CO<sub>2</sub>-separation in flue gas**

*Ragne Marie Helberg, Jonathan Ø. Torstensen, Liyuan Deng*

Norwegian University of Science and Technology, Norway

**P31. [561]. CO<sub>2</sub>/H<sub>2</sub> separation using poly(ionic liquid)/ionic liquid composite membranes**

*Andreia S.L. Gouveia\**, *Liliana C. Tomé\*\** and *Isabel M. Marrucho\**

\*Centro de Química Estrutural, Instituto Superior Técnico, Universidade de Lisboa, Portugal

\*\*Instituto de Tecnologia Química e Biológica António Xavier, Universidade Nova de Lisboa, Portugal

**P32. [571]. PBI mixed matrix hollow fiber membranes for pre-combustion CO<sub>2</sub> capture**

*M. Etxeberria-Benavides<sup>a,b</sup>, T. Johnson<sup>c</sup>, X. Liu<sup>b</sup>, A. Sabetghadam<sup>b</sup>, F. Kapteijn<sup>b</sup>, J. Gascon<sup>b</sup>, O. David<sup>a</sup>*

a Tecnalia Research and Innovation, Spain

b Delft University of Technology, The Netherlands

c Johnson Matthey Technology Centre, UK

**P33. [589]. Pervaporation Membranes and Process for the Regeneration of TEG in Natural Gas dehydration**

*L. Ansaloni, K. Dalane, M. Ahmadi, N.T. Josefsen, E. Tabarizadeh, L. Deng*

Department of Chemical Engineering, Norwegian University of Science and Technology, Norway

**P34. [594]. Preparation and gas permeation properties of Ti-CHA zeolite membranes**

*S. Araki\**, *H. Ishii\**, *S. Imasaka\*\**, *H. Yamamoto\**

\*Department of Chemical, Energy and Environmental Engineering, Kansai University, Japan

\*\*Hitachi Zosen Corporation, Japan

**P35. [603]. Mechanically robust, plasticization resistant polyurethane membranes for gas separation**

*Ali Pournaghshband Isfahani, Behnam Ghalei, Easan Sivaniah, Morteza Sadeghi*

Institute for Integrated Cell-Material Sciences (iCeMS), Kyoto University, Japan

**P36. [605]. Enhanced CO<sub>2</sub> selectivity by polyethylene glycol-based polyurethane membranes**

*Ali Pournaghshband Isfahani, Morteza Sadeghi, Easan Sivaniah, Behnam Ghalei*

Institute for Integrated Cell-Material Sciences (iCeMS), Kyoto University, Japan

**P37. [618]. Synthesis, gas permeability and diffusivity for novel polyetherimides with Me<sub>3</sub>C- and F<sub>3</sub>C-groups**

*N. Belov\**, *R. Nikiforov\**, *V. Ryzhykh\**, *R. Chatterjee\*\**, *S. Bisoi\*\**, *A. G. Kumar\*\**, *S. Banerjee\*\**, *Yu. Yampolskii\**

\*A.V. Topchiev Institute of Petrochemical Synthesis of RAS, Russia

\*\*Indian Institute of Technology, India

**P38. [694]. Comparing separation performance of commercial ceramic and polymeric membrane for bioethanol dehydration**

*A. Angelini<sup>1,3</sup>, D. Berling<sup>2</sup>, L. Leva<sup>3</sup>, W. Yave<sup>3\*</sup>*

1 Faculté des Sciences et Techniques, Université de Haute-Alsace (UHA), France

2 Institut de Science des Matériaux de Mulhouse (IS2M) UMR 7361 CNRS, Université de Haute-Alsace (UHA), France

3 DeltaMem AG, Switzerland

**P39. [718]. New and effective vapor-phase membrane method of bioalcohols recovery**

*A.A. Kozlova\*, M.G. Shalygin\*\*, V.V. Teplyakov, S.Yu. Markova*

\*, \*\* A.V. Topchiev Institute of Petrochemical Synthesis, Russian Academy of Sciences (TIPS RAS), Russia

**P40. [753]. Recovery of n-butanol by pervaporation using polymer-ionic liquid composite membranes**

*M. Fallanza\*, D. Echevarría\*, C. Arregoitia\*, D. Gorri\*, I. Ortiz\**

\*Department of Chemical and Biomolecular Engineering, University of Cantabria, Spain

**P41. [800]. Enhancing the separation efficiency of the membrane module for low-permeable component recovery by semi-batch pulsed retentate gas separation process**

*M.M. Trubyanov, S.V. Battalov, E.S. Puzanov, P.N. Drozdov, V.M. Vorotyntsev, I.V. Vorotyntsev*

Laboratory of membrane and catalytic processes, Nizhny Novgorod State Technical University, Russia

**P42. [809]. Preparation of polyetherimide hollow fibre membrane with enhanced permeance**

*D. Malý\*,\*\*\*, R. Válek\*, J. Peter\*,\*\**

\*MemBrain s.r.o., Czech Republic

\*\*Institute of Macromolecular Chemistry AS CR, v. v. i., Czech Republic

\*\*\*University of Chemistry and Technology, Department of polymers, Czech Republic

**P43. [816]. New possibilities for the theory and practice of membrane gas separation in high purification of gases**

*V.M. Vorotyntsev*

Laboratory of membrane and catalytic processes, Nanotechnology and Biotechnology Department, Nizhny Novgorod State Technical University, Russia

**P44. [817]. Experimental study of water and lower alcohols vapors diffusion in polymeric membrane materials**

*M.G. Shalygin\*, A.A. Kozlova\*\*, D.A. Syrtsova, S.Yu. Markova, O.R. Ryabova, V.V. Teplyakov*

\*, \*\* A.V. Topchiev Institute of Petrochemical Synthesis, RAS (TIPS RAS), Russia

**P45. [848]. Mixed-Matrix Thin Film Composite Membranes for CO<sub>2</sub>/N<sub>2</sub> Separation**

*G. Büyükolca, A. Kiliç, S. B. Tantekin-Ersolmaz*

Istanbul Technical University, Dept. of Chemical Eng., Turkey

**P46. [854]. On-line monitoring of gases and vapours transport from complex feed streams through dense membranes using Mass Spectrometry**

*S.C. Fraga, J.G. Crespo and C. Brazinha*

LAQV-REQUIMTE, Chemistry Department, FCT, Universidade Nova de Lisboa, Portugal

**P47. [858]. Synthesis of bio-based molecules by CO<sub>2</sub> capture and conversion under enzymatic action**

*M. Garcia-Alvarez\**

\*Materials & Process Engineering (iMMC-IMAP), Université catholique de Louvain, Belgium

**P48. [865]. Efficient hydrogen separation membranes based on graphene oxide membrane materials: Effect of modifications on gas transport**

*M. Lanč\*, Z. Sofer\*\*, D. Bouša\*\*, J. Luxa\*\*, V. Fíla\*\*\*, K. Fónod\*, P. Číhal\*, O. Vopička\* and K. Friess\**

\*University of Chemistry and Technology Prague, Department of Physical Chemistry, Czech Republic

\*\*University of Chemistry and Technology Prague, Department of Inorganic Chemistry, Czech Republic

\*\*\* University of Chemistry and Technology Prague, Department of Inorganic Technology, Czech Republic

**P49. [890]. Multilayer hollow fiber membranes for removing CO<sub>2</sub> from flue gas – laboratory and pilot tests**

*Jakub Peter\**, *Zbyněk Pientka\**, *Robert Válek\*\**, *David Malý\*\**

\*Institute of Macromolecular Chemistry CAS, Czech Republic

\*\*MemBrain s.r.o., Czech Republic

**P50. [900]. Amorphization of metal organic frameworks inside gas separation membranes combined with fast, in-situ synthesis methods of mixed matrix membranes**

*J. Didden\**, *A. Kertik\**, *I.F.J. Vankelecom\**

\*Centre for Surface Chemistry and Catalysis, Department of Molecular and Microbial Systems, Leuven, Belgium

**P51. [913]. Preparation and Transport Properties Polybenzimidazol Nanocomposite Membrane for Gas Separations**

*Chang Hwa Woo<sup>2</sup>*, *Moon Ki Jeong<sup>1</sup>* and *Sang Yong Nam<sup>1,\*</sup>*

1 Department of Materials Engineering and Convergence Technology, Engineering Research Institute, Gyeongsang National University, Korea

2 Director of Planning Center, Gyeongsang National University Academy and Industry Collaboration, Korea

**P52. [922]. MEMBER project. Advanced MEMBRanes and membrane assisted procEsses for pre- and post- combustion CO<sub>2</sub> captuRe**

*M. Etxeberria-Benavides\**

Fundación Tecnalia Research & Innovation\*, Technische Universiteit Eindhoven, Technische Universiteit Deldt, Institut for Energiteknikk, Universidad de Zaragoza, Fundación Ciudad de la Energía, Marion Technologies S.A., C&CS catalysts and chemical specialties GmbH, Polymem S.A., Hygear BV, Eco Recycling S.R.L., Zeg Power AS, Quantis Sarl, KT - Kinetics Technology SPA, Petroleos de Portugal - Petrogal SA, Arkema France, Johnson Matthey PLC

## Mixed matrix membranes

**P53. [83]. Effect of graphene lateral flake size on polymer of intrinsic microporosity thin film nanocomposite membranes**

*M Alberto<sup>1</sup>*, *R Bhavsar<sup>2</sup>*, *J M Luque-Alled<sup>1</sup>*, *L Gao<sup>2</sup>*, *G Szekely<sup>1</sup>*, *S M Holmes<sup>1</sup>*, *A Vijayaraghavan<sup>3</sup>*, *P M Budd<sup>2</sup>*, *P Gorgojo<sup>1</sup>*

1 School of Chemical Engineering and Analytical Science, The University of Manchester, Oxford Road, Manchester, UK

2 School of Chemistry, The University of Manchester, Oxford Road, UK

3 School of Materials, The University of Manchester, Oxford Road, UK

**P54. [149]. Preparation and characterization of dense membranes based metal organic networks (MOF- 5) for separation: aromatic-aliphatics mixtures**

*L. Aouinti\**, *A. Hamli\**

\*aLSPBE Laboratoire de synthèse organique physico chimie biomoléculaire et environnement, USTO –MB, Algeria

**P55. [154]. Elaboration of novel PES/nanocomposites mixed matrix membranes**

*I. Ben Belgacem\**, *P. Loulergue\*\**, *H. Bouhamed\*\*\** and *S. Khemakhem\**

\*Laboratoire Sciences des Matériaux et Environnement, Université de Sfax, Faculté des Sciences de Sfax, Tunisia

\*\*Univ Rennes, CNRS, France

\*\*\*Laboratoire de Chimie Industrielle (LCI), Ecole Nationale d'Ingénieurs de Sfax (ENIS), Tunisia

**P56. [216]. Advanced Mixed Matrix Membranes with Metal Organic Frameworks Supporting Ionic Liquids**

*Inês Ferreira\**, *Ana R. Nabais\**, *Rui P.P.L. Ribeiro\**, *José P.B. Mota\**, *Isabel A.A.C. Esteves\**, *Luís C. Silva\*\**, *Luísa A. Neves\**

\*LAQV/REQUIMTE, Departamento de Química, Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa, Portugal

\*\*LAQV/REQUIMTE, Departamento de Química e Bioquímica, Faculdade de Ciências, Universidade do Porto, Portugal

**P57. [222]. Flux-enhanced PVDF mixed matrix membranes incorporating APTS-functionalized graphene oxide for membrane distillation**

*Sebastian Leaper<sup>1</sup>, Ahmed Abdel-Karim<sup>1,3</sup>, Bilal Faki<sup>1</sup>, Jose Miguel Luque-Allied<sup>1</sup>, Monica Alberto<sup>1</sup>, Aravind Vijayaraghavan<sup>2</sup>, Stuart M Holmes<sup>1</sup>, Nima Shokri<sup>1</sup>, Mohamed I. Badawy<sup>3</sup>, Patricia Gorgojo<sup>1</sup>*

1 School of Chemical Engineering and Analytical Science, The University of Manchester, UK

2 School of Materials, The University of Manchester, UK

3 Water Pollution Research Department, National Research Centre, Egypt

**P58. [264]. Adsorptive Mixed Matrix Membranes for CO<sub>2</sub> Capture from Ambient Air**

*Jinguk Kim\*, Daniel Wirawan\*, Wong Him Cheng\*, Hong Yee Low\*, Mei Chee Tan\**

\*Engineering Product Development, Singapore University of Technology and Design, Singapore

**P59. [282]. Effects of incorporating ionic liquids in cellulose acetate-SAPO-34 mixed matrix membranes for CO<sub>2</sub> separation**

*Cigdem Atalay-Oral*

Istanbul Technical Univ., Dept. of Chemical Eng., Turkey

**P60. [289]. Influence of controlled functionalization of mesoporous silica nanoparticles as tailored fillers for thin-film nanocomposite membranes on stability and desalination performance**

*Ahmed Abdelsamad, Ahmed S.G. Khalil, Mathias Ulbricht*

Lehrstuhl für Technische Chemie II, and Center for Water and Environmental Research (ZWU), Universität Duisburg-Essen, Germany

**P61. [335]. Effect of amine functionalization of CuO and ZnO nanoparticles used as additives on the morphology and permeation properties of polyethersulfone ultrafiltration membranes**

*Nazanin Nasrollahi\*, Soheil Aber\*\*, Vahid Vatanpour\*\*\*, Niyaz Mohammad Mahmoodi\*\*\*\**

\*Environment Protection Research Laboratory, Department of Applied Chemistry, Faculty of Chemistry, University of Tabriz, Tabriz, Iran

\*\*Engineering Faculty, Near East University, North Cyprus, Turkey

\*\*\*Faculty of Chemistry, Kharazmi University, Iran

\*\*\*\*Department of Environmental Research, Institute for Color Science and Technology, Iran

**P62. [389]. Preparation and characterization of mixed matrix membranes based on a polyamide-imide (Torlon®) and ZIF-8 for gas separation at different temperatures**

*M. De Pascale\*, F.M. Benedetti\*, E. Lasseuguette\*\*, M.C. Ferrari\*\*, M.G. De Angelis\**

\*Dipartimento di Ingegneria Civile Chimica Ambientale e dei Materiali, Alma Mater Studiorum- Università di Bologna, Italy

\*\*The University of Edinburgh, School of Engineering, UK

**P63. [436]. Metal organic framework MOF-76(Y) based mixed matrix membranes and their gas separation application**

*Asim Laeeq Khan\*, Sadia Bano\*, Sadia Rashid\*\*, Ivo F.J. Vankelecom\*\*\**

\*Department of Chemical Engineering, COMSATS Institute of Information Technology, Pakistan

\*\*Department of Chemistry, Lahore College for Woman University, Pakistan

\*\*\*Center for Surface Chemistry and Catalysis, KU Leuven, Belgium

**P64. [451]. Ultrafiltration membrane composites incorporating MOF@GO with highly improved organic dye rejection performances**

*T.A. Makhetha\*\*, R.M. Moutloali\*\*,\*\**

\*Department of Applied Chemistry, University of Johannesburg, South Africa

\*\*DST/Mintek Nanotechnology Innovation Centre – UJ Water Research Node, University of Johannesburg, South Africa

**P65. [508]. Effect of Ionic liquids on nanocellulose membranes for CO<sub>2</sub> capture**

*X. Yu\*, S. Janakiram\*, Z. Dai\*, S. Evjen\*\*, L. Ansaloni\*, A. Fiksdahl\*\*, L. Deng\**

\*Department of Chemical Engineering, Norwegian University of Science and Technology (NTNU), Norway

\*\*Department of Chemistry, Norwegian University of Science and Technology (NTNU), Norway

**P66. [509]. Graphene oxide embedded in PES layers deposited on a UF PES/PVP membrane to enhance its performances in desalination**

*Samhari Omar\*, \*\*, Loulergue Patrick\*, Alami-Younssi Saad\*\*, Rabiller-Baudry Murielle\**

\*Univ Rennes, CNRS, ISCR (Institut des Sciences Chimiques de Rennes) - Rennes, France

\*\*Laboratoire des Matériaux Membranes et Environnement, Faculté des Sciences et Techniques Mohammedia - Université Hassan II de Casablanca, Morocco

**P67. [513]. Mixed matrix membranes comprising of BioMOF-1 in Polysulfone matrix for CO2 separation**

*Rahma Tamime\*, Sudeeha Ishaq\*, Asim Laeeq Khan\*\**

\*Department of Environmental Science, Lahore School of Economics, Pakistan

\*\*Department of Chemical Engineering, COMSATS Institute of Information Technology, Pakistan

**P68. [532]. Modification of Nafion membrane with aligned aminosiloxane-functionalized Co3O4/PW12 nanoparticles for direct methanol fuel cell**

*Kolsoum Pourzare<sup>a,b</sup>, Yaghoub Mansourpanah<sup>a,b</sup>, Saeed Farhadi<sup>a</sup>, Mohammad mahdi Hasani-Sadrabadi<sup>c</sup>*

a Department of Chemistry, Lorestan University, Iran

b Membrane Research Laboratory, Lorestan University, Iran

c Parker H. Petit Institute for Bioengineering and Bioscience, G.W. Woodruff School of Mechanical Engineering, Georgia Institute of Technology, USA

**P69. [535]. H2-selective Mixed Matrix Membranes based on PPO and ZIF-8**

*F. M. Benedetti\*§, M. G. De Angelis\*§, M. Degli Esposti\*, P. Fabbri\*, A. Orsini\*\*, A. Pettinau\*\**

\*Department of Civil, Chemical, Environmental and Materials Engineering (DICAM), University of Bologna, Italy

\*\*Sotacarbo SpA, Italy

§National Interuniversity Consortium of Materials Science and Technology (INSTM), Italy

**P70. [614]. Carbon capture capable membranes through tuning of zirconium-MOF mixed matrix membranes**

*Behnam Ghalei, Kento Sakurai, Yosuke Kinoshita, Kazuki Wakimoto, Ali Pournaghshband Isfahani, Easan Sivaniah*

Institute for Integrated Cell-Material Sciences (iCeMS), Kyoto University, Japan

**P71. [667]. Mixed-Matrix Membranes Utilizing Highly CO2 Selective Microporous Metal Imidazolate Framework (MMIF)**

*M. Ahmadi, A. Kilic, E. Tas, M. G. Ahunbay, S. B. Tantekin-Ersolmaz*

Istanbul Technical University, Dept. of Chemical Eng., Maslak, Turkey

**P72. [677]. Mixed Matrix Membranes based on PPO and graphene for gas separation**

*R. Rea\*, M.G. De Angelis\*, S. Ligi\*\*, M. Giacinti Baschetti\**

\*Università di Bologna, Italy

\*\*Graphene XT s.a.s, Italy

**P73. [778]. Reduction of PIMs physical aging by the presence of MOFs**

*E. Esposito\*, M. Carta\*\*, C. Sicard\*\*\*, A. Fuoco\*, C. Serre\*\*\*, N.B. McKeown\*\*\*\*, J.C. Jansen\**

\*Institute on Membrane Technology, ITM-CNR, Italy

\*\*Department of Chemistry, College of Science, Swansea University, UK

\*\*\*Institut Lavoisier de Versailles, Univ. de Versailles St Q. en Y.s, Univ. Paris, France

\*\*\*\*EastChem, School of Chemistry, University of Edinburgh, UK

**P74. [792]. Size-selective Mixed Matrix Membranes based on PPO and Zeolite 3A: effect of chemical modification and temperature**

*F. M. Benedetti\*§, M. G. De Angelis\*§, M. Degli Esposti\*, P. Fabbri\*, A. Orsini\*\*, A. Pettinau\*\**

\*Department of Civil, Chemical, Environmental and Materials Engineering (DICAM), University of Bologna, Italy

\*\*Sotacarbo SpA, Italy

§National Interuniversity Consortium of Materials Science and Technology (INSTM), Italy

**P75. [894]. ZIF-71 Filled Mixed Matrix Membranes for Gas Separation**

*Sennur Deniz\*, Esra İlhan\*, Serra Kolçak\**

\*Yıldız Technical University, Chemical Engineering Dept., Turkey



**P76. [895]. Preparation and Gas Permeability Properties of PI/Zr-Imidazolates Mixed Matrix Membranes**

*Sennur Deniz\*, Esra İlhan\*, Serra Kolçak\**

\*Yıldız Technical University, Chemical Engineering Dept., Turkey

## Membrane reactors and bioreactors

**P77. [81]. High catalytic efficiency of gel-trapped palladium nanoparticles in catalytic polymeric membranes**

*M.López-Viveros\*, Y.Gu\*, C.Emin\*, I. Favier\*\*, M. Gómez\*\*, J-F.Lahitte\*, J-C.Remigy\**

\*Laboratoire de Génie Chimique, Université de Toulouse, CNRS, INPT, UPS, France

\*\*Laboratoire Hétérochimie Fondamentale et Appliquée, Université de Toulouse, France

**P78. [447]. Experimental test of zeolite membrane reactor for methanol synthesis**

*R. Raso\*, J. Lasobras\*, J. Herguido\*, I. Kumakiri\*\*, M. Menéndez\**

\*Aragon Institute of Engineering Research, University of Zaragoza, Spain

\*\*Engineering Faculty, Yamaguchi University, Japan

**P79. [615]. Optimization of a magnetically induced vibration (MMV) system for fouling control in a membrane bioreactor (MBR)**

*M. Mertens\*, M. Quintelier\*, I.F.J. Vankelecom\**

\*Centre for Surface Chemistry and Catalysis, KU Leuven, Belgium

**P80. [674]. Porphyrin-functionalized polyvinylidene fluoride membrane for a visible light degradation in a continuous flow**

*R. Lyubimenko\*, A. I. Schäfer†, B. S. Richards\*, A. Turshatov\**

\*Institute of Microstructure Technology (IMT) † Membrane Technology Department, Institute of Functional Interfaces (IFG) Karlsruhe Institute of Technology (KIT), Germany

**P81. [720]. Evaluation of a forward osmosis to combined microalgae dewatering and wastewater reuse**

*G. Blandin\*, O. Onyshchenko\*\*\*, L. Afif\*, J. Comas\*, \*\*, I. Rodriguez-Roda\*, \*\**

\*LEQUIA, Institute of the environment, University of Girona, Spain

\*\*ICRA, Catalan Institute for Water Research, Girona, Spain

\*\*\*Dnipropetrovsk State Agrarian and Economic University, Ukraine

**P82. [744]. Single-pass organic dye degradation by TiO<sub>2</sub>-coated photocatalytic AAO membranes**

*T. E. Berger\*, †, B. Breitung‡, B. S. Richards\*, A. I. Schäfer†*

\*Institute of Microstructure Technology Karlsruhe Institute of Technology (KIT), Germany

†Membrane Technology Department, Institute of Functional Interfaces, KIT, Germany

‡ Karlsruhe Nano Micro Facility, KIT, Germany

**P83. [908]. Filtration process performance in a Membrane Anaerobic Co-Digester (M-AcoD)**

*J.F. Mora-Sanchez\*, A. Robles\*\*, M.V. Ruano\*\*, J. Ribes\*\*, G. Noriega-Hevia\*, R. Serna-García\*\*, J. Ferrer\**

\*CALAGUA – Unidad Mixta UV-UPV, Institut Universitari d'Investigació d'Enginyeria de l'Aigua i Medi Ambient – IIAMA, Universitat Politècnica de València, Spain

\*\*CALAGUA – Unidad Mixta UV-UPV, Departament d'Enginyeria Química, Universitat de València, Spain

**P84. [926]. Comparison of bacterial communities of activated sludge and membrane biofilm of MBRs treating landfill leachates**

*J.L. Alonso\*, J. Fernández-Navarro\*, L. Moreno-Mesonero\*, E. Zuriaga-Agustí\*\*, J.A. Mendoza-Roca\*\*, Y. Moreno\*, C. Alvarez-Requena\*\*\**

\*Instituto Ingeniería del Agua y Medio Ambiente, Universitat Politècnica de València, Spain

\*\*Instituto de Seguridad Industrial, Radiofísica y Medioambiental, Universitat Politècnica de València, Spain

\*\*\*URBASER, Madrid, Spain

**P85. [931]. Mini-reactors for the generation of high value-added products (MALTA project)**

*Oana David\**, *Ekain Fernandez\**, *Jose Luis Viviente\**

\*TECNALIA, Energy and Environment Division, Spain

## Micro-and Ultrafiltration

**P86. [43]. Performance of Spiral Ultrafiltration Membrane and Dynamic Modelling**

*Ashraf Sadik Hassan*

Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, Qatar

**P87. [59]. Treatment of effluents from oyster farm by membrane process**

*C. Cordier\**, *C. Stavrakakis\*\**, *B. Dupuy\*\**, *M. Papin\*\**, *P. Sauvade\*\*\**, *F. Coelho\*\*\**, *P. Moulin\**

\*Laboratoire de Mécanique, Modélisation et Procédés Propres, Aix-Marseille Université, France

\*\*Laboratoire Sécurisation des Productions en Conchyliculture, France

\*\*\*Suez - Aquasource, France

**P88. [112]. Effect of the Surface Charge of Monodispersed Particulate Foulants on Cake Formation**

*Qi Han<sup>a, b, c</sup>*, *Weiyi Li<sup>a, b</sup>*, *Thien An Trinh<sup>a, b</sup>*, *Anthony G. Fane<sup>b</sup>*, *Jia Wei Chew<sup>a, b, \*</sup>*

a School of Chemical and Biomedical Engineering, Nanyang Technological University, Singapore

b Singapore Membrane Technology Centre, Nanyang Environment and Water Research Institute, Nanyang Technological University, Singapore

c Interdisciplinary Graduate School, Nanyang Technological University, Singapore

**P89. [129]. Influence of feed pH and membrane material on protein fractionation of brewer's spent yeast hydrolysate**

*G. V. Marson \**, *M. T. C. Machado\*\**, *M. D. Hubinger\**

\*Department of Food Engineering, School of Food Engineering, UNICAMP, Brazil

\*\*Department of Food Technology, Federal Rural University of Rio de Janeiro, Brazil

**P90. [150]. Self-Assembled Hybrid Isoporous Membranes with Enhanced Antifouling and Antibiofouling Capabilities**

*Rahul Shevate*, *Mahendra Kumar* and *Klaus-Viktor Peinemann*

Advanced Membranes and Porous Materials Center, King Abdullah University of Science and Technology (KAUST), Kingdom of Saudi Arabia

**P91. [258]. Ultrafiltration applied to concentrate lactose-free milk**

*R. Dos R. M. Azevêdo\**, *S. A. Moreira\*\**, *A. L. Carvalho\**, *H. L. Malta\**

\*UEFS – State University of Feira de Santana, Brazil

\*\*Food Engineer

**P92. [296]. Residence Time of Milk Concentrates during Rinsing of Spiral Wound Membranes (UF) with Water**

*I. Kieferle*, *S. Benteler*, *M. Hartinger*, *U. Kulozik*

Chair of Food- and Bioprocess Engineering, Technical University of Munich, Germany

**P93. [390]. A novel approach to Liquid Liquid Porometry (LLP) for the characterisation of ultrafiltration membranes**

*A. Serner\**, *I. Kienbaum*, *I. Struzynska-Piron*, *K. van der Kamp\**, *D. Pattyn\*\**, *A. Odena\*\**

\*IB-FT GmbH, Germany

\*\*POROMETER NV, Belgium

**P94. [398]. Direct filtration of brackish surface water with ceramic and polymeric membranes in RO plants**

*J. Arévalo*, *J.M. Viñas*, *M. Burgos*, *F. Rogalla*, *V.M. Monsalvo*

\*Aqualia Innovation and Technology Department, Spain

**P95. [399]. Microfiltration and ultrafiltration in diafiltration mode to obtain bioactive immunoglobulin rich whey from immune milk**

*H.-J. Heidebrecht\**, *U. Kulozik\**

\*Chair for Food and Bioprocess Engineering, Technische Universität München, Germany

**P96. [494]. Surface zeta potential analysis of hollow fibre membranes**

*T. Luxbacher\**, *V. Petek Regorsek\*\**, *I. Petrinic\*\**, *H. Buksek\*\**, *I. Jesswein\*\*\**, *T. Schiestel\*\*\**

\*Anton Paar GmbH, Graz, Austria

\*\*University of Maribor, Faculty of Chemistry and Chemical Engineering, Slovenia

\*\*\*Fraunhofer Institute for Interfacial Engineering and Biotechnology, Germany

**P97. [524]. Membrane separation of anthocyanins and sugars in extracts of chokeberry pomace**

*M. C. Roda-Serrat\**, *J. S. Fredsted\**, *B. Razi Parjikolaei\**, \*\*, and *B. Norddahl\**

\*Department of Chemical Engineering, Biotechnology and Environmental Technology, University of Southern Denmark, Denmark

\*\*Arla Foods Ingredients Group P/S, Denmark

**P98. [547]. New hydrophilic PVDF ultrafiltration hollow fiber membrane with durable hydrophilicity for water and wastewater treatment**

*Olivier LORAIN\**, *Sébastien MARCELLINO*, *Maxime ZEVACO*, *Isabelle DUCHEMIN*, *Jean Michel ESPENAN*

\*POLYMEM, France

**P99. [712]. Ultrasounds cleaning of inorganic membranes fouled by proteins**

*M.J. Luján-Facundo*, *J.A. Mendoza-Roca*, *B. Cuartas-Uribe*, *S. Álvarez-Blanco*

Instituto de Seguridad Industrial, Radiofísica y Medioambiental. Universitat Politècnica de València, Spain

**P100. [775]. Rheological properties of alginate fouling layers developing during ultrafiltration**

*D. Sioutopoulos\**, *A. Karabelas\**, *T. Goudoulas\*\**

\* Centre for Research and Technology-Hellas (CERTH), Greece

\*\* Department of Chemical Engineering, Aristotle University of Thessaloniki, Greece

**P101. [784]. Towards Stimuli Responsive Membranes for the selective capture of blood platelets**

*Y. Chang\**, *A. Venault\**, *J. Wang\**, *C-J Chou\**, *P. Roblin*, *C. Causserand\*\**, *P. Bacchin\*\**, *P. Aimar\*\**, *J.Y. Lai\**

\*R&D Center for Membrane Technology, Chung Yuan Christian University, Taiwan

\*\*Laboratoire de Génie Chimique, Université de Toulouse, France

**P102. [789]. Impact of skim milk thermal history on microfiltration performance**

*M. Granger-Delacroix\*\**, *N. Leconte\**, *F. Garnier-Lambrouin\**, *F. Le Goff\*\**, *M. Van Audenhaege\*\**, *G. Gésan-Guiziou\**

\*STLO, INRA, France

\*\*Sodiaal International, R&I department, France

**P103. [916]. Properties of biodegradable poly(lactic acid)/nanozeolite based ultrafiltration membranes for water treatment**

*MS Matseke\**, *EN Nxumalo\*\*\**, and *J Ramontja\**, \*\*

\*Department of Applied Chemistry, University of Johannesburg, Doornfontein, Johannesburg, South Africa

\*\*DST/Mintek Nanotechnology Innovation Centre – UJ Water Research Node, University of Johannesburg, South Africa

\*\*\*Nanotechnology and Water Sustainability Research Unit, College of Science, Engineering and Technology, University of South Africa, South Africa

**P104. [930]. Ultrafiltration of oil-in-water emulsions at several pH in a dead-end unit**

*G. Gutiérrez*, *M. Matos*, *A. Cambiella*, *S. Álvarez*, *L. Pérez*, *J. R. Álvarez*, *S. Luque*

Department of Chemical and Environmental Engineering, University of Oviedo, Spain

**P105. [932]. Conventional tertiary treatment versus ultrafiltration for wastewater tertiary treatment**

*F.J. Martínez-Francisco*, *J.A. Mendoza-Roca*, *J. Lora-García*, *M.C. Vincent-Vela*

Research Institute for Industrial, Radiophysical and Environmental Safety (ISIRYM), Universitat Politècnica de València, Spain

## Membranes for drinking and process water production

**P106. [15]. A simple and new approach to determine the structural parameter of forward osmosis membrane supports**  
*M. Mohammadifakhr\**, *R. Tanumiharja\**, *J. de Groot\**, *K. Trzaskus\*\**, *A.J.B. Kemperman\**, *H.D.W. Roesink\**

\*Membrane Science and Technology cluster, Department of Science and Technology, Mesa+ Institute for Nanotechnology, University of Twente, The Netherlands

\*\*Department of Research and Development, Aquaporin A/S, Denmark

**P107. [28]. Innovative membrane concepts enabled by specialty polymers: from optical detection to water filtration**

*P. Campanelli\**, *E. Di Nicolò\**

\*Solvay Specialty Polymers Italy S.p.A., Italy

**P108. [33]. Electrodialysis Reversal and Nanofiltration applied to the Sinos River water treatment**

*L. E. Bacher\**, *C. D. Venzke\**, *N. E. Lauffer\**, *F. M. de Souza\**, *M. A. S. Rodrigues\*\**

\*Post-Graduation Program in Environmental Quality, Feevale University, Brazil

\*\*Pure Sciences and Technology Institute, Feevale University, Brazil

**P109. [147]. A case of study about the nanofiltration and reverse osmosis for the retention of some pharmaceutical products present in Doce river in Brazil**

*A.F.S. Foureaux\**, *V.R. Moreira\*\**, *Y.A.R. Lebron\*\**, *E.O. Reis\**, *L.B.M. Barros\**, *L.V.S. Santos\*\**, *M.S. Amaral\**, *W.G. Moravia\*\*\**, *L.C. Lange\**

\* UFMG, School of Engineering, Brazil

\*\* PUC-MG, Polytechnic Institute – Belo Horizonte, Brazil

\*\*\* CEFET-MG, Department of Environmental Science and Technology, Brazil

**P110. [194]. Integration of functional particles into hollow fiber membranes for the separation of micropollutants**

*C. Rösler\**, *T. Schiestel\**, *W. Wietschorke\*\**, *D. Oechsle\*\**, *M. Jeske\*\*\**, *W. Zhang\*\*\**

\*Fraunhofer Institute for Interfacial Engineering and Biotechnology, Germany

\*\*Poromembrane, Germany

\*\*\*FUMATECH BWT GmbH, Bietigheim-Bissingen, Germany

**P111. [195]. Flexible integration of functional groups into hollow fiber membranes for the separation of micropollutants and heavy metals**

*T. Schiestel\**, *C. Rösler\**, *D. Koch\*\**, *M. Ulbricht\*\**, *W. Wietschorke\*\*\**, *D. Oechsle\*\*\**, *M. Jeske\*\*\*\**, *W. Zhang\*\*\*\**

\*Fraunhofer Institute for Interfacial Engineering and Biotechnology, Germany

\*\*Lehrstuhl für Technische Chemie II, Universität Duisburg-Essen, Germany

\*\*\*poromembrane, Germany

\*\*\*\*FUMATECH BWT GmbH, Bietigheim-Bissingen, Germany

**P112. [234]. Eco-design for membrane elaboration and drinking water process**

*F. Prézéus\**, *L. Barna\*\**, *C. Guigui\*\**, *J.-C. Remigy\**

\*Laboratoire de Génie Chimique, Université de Toulouse, CNRS, INPT, UPS, France

\*\*LISBP, Université de Toulouse, CNRS, INRA, INSA, France

**P113. [347]. Hydrophilic Polydopamine/graphene oxide interlayer on polysulfone support layer for thin film nanocomposite forward osmosis membrane**

*Aatif Ali Shah\*, \*\*, Hyeon-gyu Choi\*, Seung-Eun Nam\*, You-In Park\*, \*\*, Hosik Park\*, \*\**

\*Center for Membranes, Advanced Materials Division, Korea Research Institute of Chemical Technology (KRICT), Republic of Korea

\*\*Department of Green Chemistry and Environmental Biotechnology, University of Science and Technology, Republic of Korea

**P114. [406]. Nules BWRO Plant. Performance of the water quality and energy efficiency**

*J. García Castillo\**, *M. Ortiz Gómez\**

\* FACSA, Spain

**P115. [502]. Removal of pesticides from aqueous solution using aquaporin FO membrane**

*Mahdi Nikbakht Fini\**, *Henrik Tækker Madsen\*\**, *Jens Muff\**

\*Aalborg University, Department of Chemistry and Bioscience, Section of Chemical Engineering, Denmark

\*\*Aalborg University, Department of Chemistry and Bioscience, Section of Sustainable Biotechnology, Denmark

**P116. [754]. Pushing intensification of membrane distillation: materials vs process potentialities**

*Deisy Mejia\**, *Cecile Lemaitre\**, *Eric Favre\**, *Christophe Castel\**

\*Laboratory of Reactions and Process Engineering (LRGP), France

**P117. [759]. Hybrid Hollow Fibre NF-Calcite Contactor as a Point of Entry Treatment Method to Remove Mn, Fe, Hardness and NOM from domestic Groundwater Supplies**

*M. Haddad\**, *T. Okame\*\**, *P. R. Bérubé\*\*\**, *B. Barbeau\**

\*NSERC-Industrial Chair on Drinking Water, Polytechnique Montreal, Canada

\*\*Toyobo Research Center, Japan

\*\*Civil Engineering Department, University of British Columbia, Canada

**P118. [763]. Polyamide/CNT Thin Film Nanocomposite Membranes for Simultaneous Boron Removal and Desalination of Seawater**

*A. Güvensoy\**, *S. Kürklü-Kocaoglu\*,\*\**, *S. Velioglu\**, *M. G. Ahunbay\**, and *S. B. Tantekin-Ersolmaz\**

\*Department of Chemical Eng., Istanbul Technical University, Turkey

\*\*Department of Chemical Engineering, Pamukkale University, Turkey

**P119. [810]. Interplay of process and membrane materials properties on reverse osmosis performances: towards maximal module effective permeance**

*Deisy Mejia\**, *Cecile Lemaitre\**, *Eric Favre\**, *Christophe Castel\**

\*Laboratory of Reactions and Process Engineering (LRGP), France

**P120. [882]. Responsible reduction of nitrates in the comprehensive water cycle**

*R. Teruel-Juanes<sup>1</sup>*, *C. Moliner-Estopiñan<sup>2</sup>*, *Carmem T. Primaz<sup>1</sup>*, *J. D. Badia<sup>3l</sup>*, *I. Bautista<sup>1</sup>*, *J. M. Navarro<sup>1</sup>*, *Barbara Bosio<sup>2</sup>*, *Elisabetta Arato<sup>2</sup>*, *P. Campíns-Falcó<sup>3</sup>*, *C. Molíns-Legua<sup>3</sup>*, *Francesc Hernandez<sup>3</sup>*, *Placid Madramany<sup>4</sup>*, *Jose Moran<sup>5</sup>*, *Pepe Castro<sup>5</sup>*, *Fco Javier. Sanchis<sup>6</sup>*, *Jose D. Martinez<sup>7</sup>*, *Frank Hiddink<sup>8</sup>*, *A. Ribes-Greus<sup>1\*</sup>*

(1) Instituto de Tecnología de Materiales (ITM), Universitat Politècnica de València, Spain

(2) Dipartimento di Ing. Civile, Chimica e Ambientale (DICCA), Università degli Studi Genova, Italy

(3) Universitat de València, Spain

(4) Consorci de la Ribera, Spain

(5) La Unió de Llauradors i Ramaders del País Valencià, Spain

(6) Aguas de Valencia, S.A, Spain

(7) Diputació de València, Spain

(8) Stichting Incubator, The Netherlands

## Membranes for waste water treatment

**P121. [13]. Membrane Distillation to the Treatment of Reverse Osmosis Brine**

*C. D. Venzke\**, *A. Giacobbo\**, *M. A. S. Rodrigues\*\**, *A. M. Bernardes\**

\*Post-Graduation Program in Mining, Metallurgical and Materials Engineering, (PPGE3M), Federal University of Rio Grande do Sul (UFRGS), – Porto Alegre - RS, Brazil

\*\*Pure Sciences and Technology Institute, Feevale University, Vila Nova – Novo Hamburgo - RS, Brazil

**P122. [23]. Coupling nanofiltration with Fenton oxidation for pharmaceutical abatement in wastewater treatment**

*Mattia Giagnorio\**, *Andrea Gallo\**, *Marco Minella\*\**, *Davide Vione\*\**, *Alberto Tiraferri\**

\*Department of Environment, Land and Infrastructure Engineering (DIATI) Politecnico di Torino, Italy

\*\*Department of Chemistry, Università degli Studi di Torino, Italy

**P123. [85]. Valorization of ammonium from urban waste waters as liquid fertilizers by integration of liquid-liquid membrane contactors and electro dialysis**

*X. Vecino\**, *M. Reig\**, *B. Bhushan\**, *J. López\**, *C. Valderrama\**, *O. Gibert\**, \*\*, *J.L. Cortina\**, \*\*

\*Chemical Engineering Department, UPC-Barcelona TECH; Barcelona Research Center for Multiscale Science and Engineering, Spain

\*\*CETaqua, Spain

**P124. [104]. Integration of diffusion dialysis for sulphuric acid recovery from metallurgical process streams**

*J. Lopez\**, *M. Reig\**, *X. Vecino\**, *C. Valderrama\**, *O. Gibert\**, \*\*, *J.L. Cortina\**, \*\*

\*Chemical Engineering Department (UPC-BarcelonaTECH) and Barcelona Research Center for Multiscale Science and Engineering, Spain

\*\*Water Technology Center (CETaqua), Spain

**P125. [117]. Comparison of selective and non-selective membrane for potassium recovery from vinasse by electro dialysis**

*Laura B. M. Barros\**, *Laura H. Andrade\**, *Miriam C.S. Amaral\**, *Paulo V. Cunha\**

\*Department of Sanitary and Environmental Engineering, Federal University of Minas Gerais, Belo Horizonte, Brazil

**P126. [118]. Membrane bioreactor powder activated carbon hybrid system in the treatment of reverse osmosis concentrate**

*Y. Jo\**, *M. Johir\**, *J. Kandasamy\**, *S. Vigneswaran\**

\*Faculty of Engineering, University of Technology Sydney (UTS), Australia

**P127. [303]. Impact of operational conditions on rejection of trace organic compounds in forward osmosis using Aquaporin-based Hollow Fiber membranes**

*S. Braekevelt\**, *S. Hussain\*\**, *M. Friis Andersen\**, *K. Bester\*\*\**, *U. E. Bollmann\*\*\**, *I. Petrushina\*\*\*\**, *V. Sanahuja-Embuena\*\*\*\*\**, *J. Vogel\**, *C. Hélix-Nielsen\*\*\*\*\**

\*Aquaporin A/S, Department of Research and Development, Denmark

\*\*Technical University of Denmark, Department of Chemical and Biochemical Engineering, Denmark

\*\*\*Aarhus University, Faculty of Science and Technology, Department of Environmental Science, Denmark

\*\*\*\*Technical University of Denmark, Department of Energy Conversion and Storage, Denmark

\*\*\*\*\*Technical University of Denmark, Faculty of Environmental Engineering, Denmark

**P128. [315]. RO and EDR processes for petrochemical wastewater treatment**

*C. D. Venzke\**, *A. Giacobbo\*\**, *M. N. de Pinho\*\*\**, *M. A. S. Rodrigues\**, *A. M. Bernardes\*\**

\*Instituto de Ciências Exatas e Tecnológicas – ICET, Universidade Feevale, Novo Hamburgo, Brazil

\*\*Programa de Pós-Graduação em Engenharia de Minas, Metalúrgica e de Materiais – PPGE3M, Universidade Federal do Rio Grande do Sul – UFRGS, Brazil

\*\*\*Center of Physics and Engineering of Advanced Materials, Instituto Superior Técnico, University of Lisbon, Portugal

**P129. [316]. Municipal wastewater tertiary treatment by reverse osmosis**

*E. K. Schoenell\**, *C. Oliveira\**, *L. R. H. Santos\**, *A. Giacobbo\*\**, *A. M. Bernardes\*\**, *M. A. S. Rodrigues\**

\*Programa de Pós-Graduação em Qualidade Ambiental, Universidade Feevale, Brazil

\*\*Programa de Pós-Graduação em Engenharia de Minas, Metalúrgica e de Materiais – PPGE3M, Universidade Federal do Rio Grande do Sul – UFRGS, Brazil

**P130. [319]. Nanofiltration and Advanced Oxidation Process for textile wastewater post-treatment**

*F. L. C. Lisboa\**, *A. P. B. Araújo\**, *E. Smolders\**, *L. M. Oliveira\**, *G. G. Melo\**, *S. B. Oliveira\**, *C. B. Alvim\*\**, *M. C. S. Amaral\*\**, *R. B. P. Marcelino\*\**, *B. C. Ricci\**, *L. H. Andrade\**

\*Pontifical Catholic University of Minas Gerais, Brazil

\*\*Federal University of Minas Gerais, Brazil

**P131. [320]. Evaluation of recycled RO performance for textile wastewater post-treatment**

*L. M. Oliveira\**, *A. P. B. Araújo\**, *E. Smolders\**, *F. L. C. Lisboa\**, *G. G. Melo\**, *S. B. Oliveira\**, *C. B. Alvim\*\**, *M. C. S. Amaral\*\**, *E. C. de Paula\*\**, *B. C. Ricci\**, *L. H. Andrade\**

\*Pontifical Catholic University of Minas Gerais, Brazil

\*\*Federal University of Minas Gerais, Brazil

**P132. [334]. Removal of a carbamazepine ciprofloxacin and ibuprofen mix on a combined process of a membrane bioreactor with advanced oxidation processes for wastewater treatment**

*A. Monteoliva-García\**, *J. Martín-Pascual\**, *M. M. Muñio\*\**, *J. M-Poyatos\**,

\*Department of Civil Engineering and Institute of Water Research, University of Granada, Spain

\*\*Department of Chemical Engineering, University of Granada, Spain

**P133. [404]. Interfacial polymerization study for recycling RO membranes in FO wastewater treatment**

*P. Arribas\**, *J. Contreras-Martínez\**, *M. C. García-Payo\**, *M. Khayet\**, *\*\*\**

\*Department of Applied Physics I, Faculty of Physics, Complutense University of Madrid, Spain

\*\*Campus of International Excellence, Moncloa Campus, Complutense University and Technical University of Madrid (UCM-UPM), Spain

\*\*\*Madrid Institute for Advanced Studies of Water (IMDEA Water Institute), Spain

**P134. [434]. Fenton oxidation of phenol in a tubular packed ceramic membrane reactor**

*G. Carrasco\**, *F. Alvarez\**, *M. Olkiewicz\**, *J. Font\**, *F. Stüber\**

\*Universitat Rovira i Virgili, Departament d'Enginyeria Química, Spain

**P135. [476]. Preliminary study about the naproxen recovery by emulsion liquid membranes**

*T. A. Razo-Lazcano\**, *M. P. González-Muñoz\**, *M. Ávila-Rodríguez\**

\*Universidad de Guanajuato, Department of Chemistry, Mexico

**P136. [487]. NF membrane flux enhancement during two-phase olive mill wastewater phenolic fraction recovery and reclamation**

*J.M. Ochando-Pulido\**, *A. Martínez-Férez\**

\*Department of Chemical Engineering, University of Granada, Spain

**P137. [489]. About sub-boundary operating conditions as efficient process control tool during purification of agro-industrial effluents**

*J.M. Ochando-Pulido\**, *M. Stoller\*\**, *A. Martínez-Férez\**

\* Department of Chemical Engineering, University of Granada, Spain

\*\*University of Rome La Sapienza, Dept. Chemical Materials Environmental Engineering, Italy

**P138. [497]. The effect of membrane material on fouling behavior in anaerobic membrane bioreactor treating domestic wastewater**

*A.D. Grossman\**, *Y. Yang\**, *G. Oron\**, *R. Bernstein\**

\*The Zuckerberg Institute for Water Research, J. Blaustein Institutes for Desert Research, Ben-Gurion University of the Negev, Israel

**P139. [501]. Low Pressure Reverse Osmosis and Electrodialysis in the Treatment of Landfill Leachate**

*M. Kulhavý\**, *J. Cakl\**, *J. Maršálek\*\**, *L. Václavík\*\**

\*Institute of Environmental and Chemical Engineering, Faculty of Chemical Technology, University of Pardubice, Czech Republic

\*\*MemBrain, s.r.o., Czech Republic

**P140. [525]. Removal of Heavy Metals by Ultrafiltration Assisted with Chitosan or Carboxy-methyl Cellulose**

*B. Lam\**, *S. Déon\**, *P. Fievet\**, *N. Crini\*\**, *G. Crini\*\**

\*Institut UTINAM (UMR CNRS 6213), France

\*\*Laboratoire Chrono-Environnement (UMR CNRS 6249), France

**P141. [533]. Novel polyethersulfone/phosphotungstic acid functionalized Co<sub>3</sub>O<sub>4</sub> nanocomposite ultrafiltration membrane for oil/water emulsion separation**

*Kolsoum Pourzare<sup>a,b</sup>*, *Yaghoub Mansourpana<sup>a,b</sup>*, *Saeed Farhadi<sup>a</sup>*

<sup>a</sup> Department of Chemistry, Lorestan University, Iran

<sup>b</sup> Membrane Research Laboratory, Lorestan University, Iran

- P142. [536]. Ammonia transfer in forward osmosis during operation to concentrate digester centrate**  
*K. C. Kedwell\**, *C. A. Quist-Jensen \**, *M. K. Jørgensen\**, *M. L. Christensen\**  
\*Department of Chemistry and Bioscience, Aalborg University, Denmark
- P143. [541]. Preparation of Photocatalytic Membranes for Water Purification Using a Solvent Free Sol-Gel Process**  
*Rosa M. Huertas\**, *João G. Crespo\*\**, *Vanessa Pereira\**  
\*IBET, Instituto de Biologia Experimental e Tecnológica, Portugal  
\*\*LAQV/Requimte, Departamento de Química, Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa, Portugal
- P144. [549]. Effect of feed pretreatment in direct contact membrane distillation**  
*L B Grossi\**, *R L Ramos\**, *C M S Alvares*, *C B Alvim*, *M F Martins*, *M C S Amaral*  
\*Department of Sanitary and Environmental Engineering - Federal University of Minas Gerais, Brazil
- P145. [552]. The development of a novel metal nanocomposite PSF membrane for use in wastewater treatment**  
*H.L. Richards\**, *N.D. Enemu\**, *P.G.L Baker\*\**, *E. Iwuoha\*\**  
\*University of the Witwatersrand, Johannesburg, South Africa  
\*\*University of the Western Cape, Cape Town, South Africa
- P146. [554]. Pilot scale membrane filtration and photocatalytic membrane treatment of olive mill wastewaters**  
*M.C. Fraga<sup>1,2</sup>*, *S. Sanchez<sup>1,2</sup>*, *R. Huertas<sup>1,2</sup>*, *V.J. Pereira<sup>2</sup>*, *J.G. Crespo<sup>1</sup>*  
1REQUIMTE/LAQV, Department of Chemistry, Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa, Portugal  
2 iBET - Instituto de Biologia Experimental e Tecnológica, Portugal
- P147. [621]. A free-standing CNT membrane for treating oily wastewater**  
*Viatcheslav Freger\**, *Karen Tankus\**, *Liron Issman\*\**  
\*Technion – IIT, Wolfson Department of Chemical Engineering, Israel  
\*\*Tortech Nano-fibers, Israel
- P148. [697]. Pd/Cu-loaded polymer porous hollow fiber membranes for removal of nitrates from water**  
*M. I. Kostyanaya*, *I. V. Petrova*, *V. V. Volkov*, *A. B. Yaroslavtsev*  
A.V.Topchiev Institute of Petrochemical Synthesis RAS, Russia
- P149. [703]. Rejection of the oxyanion forms of Se(IV) and Se(VI) by tight ultrafiltration membranes alone and assisted by chitosan addition**  
*S. Déon\**, *B. Lam\**, *J. Deher*, *P. Fievet\**, *N. Crini\*\**, *G. Crini\*\**  
\*Institut UTINAM, Université de Bourgogne Franche-Comté, France  
\*\*Chrono-environnement, Université de Bourgogne Franche-Comté, France
- P150. [707]. Flue-gas desulfurization (FGD) wastewater reclamation by integrated membrane process**  
*A. Cassano\**, *F. Macedonio\**, *A. Criscuoli\**, *C. Conidi\**, *P. Argurio\*\**, *A. Ali\**, *E. Drioli\**, *D. Cumbo\*\*\**  
\*Institute on Membrane Technology (ITM–CNR), Italy  
\*\*Department of Environmental and Chemical Engineering, University of Calabria, Italy  
\*\*\*ENEL Produzione S.p.A., Global Thermal Generation Innovation Department, Italy
- P151. [721]. Recovery of phenolic compounds present in the residual fermentation brine from table olive production by an integrated membrane process**  
*Carlos Carbonell-Alcaina\**, *Silvia Álvarez-Blanco\**, *M<sup>o</sup> Amparo Bes-Piá\**, *José Antonio Mendoza-Roca\**, *Laura Pastor-Alcañiz\*\*\**  
\*Research Institute for Industrial, Radiophysical and Environmental Safety (ISIRYM), Universitat Politècnica de València, Valencia, Spain  
\*\*Department of Chemical and Nuclear Engineering, Universitat Politècnica de València, Spain  
\*\*\*Depuración de Aguas del Mediterráneo (DAM), Spain
- P152. [724]. Characterization of ZW-1 ultrafiltration membrane and its application for direct municipal wastewater treatment**  
*Marko Racar\**, *Ivan Barišić*, *Davor Dolar*, *Krešimir Košutić*



Faculty of Chemical Engineering and Technology, University of Zagreb, Croatia

**P153. [740]. Optimising membrane performance for anaerobic urban wastewater treatment**

*A. Robles\**, *J.B. Giménez\**, *F. Durán\*\**, *J. Serralta\*\*\**, *F. Rogalla\*\**, *J. Ferrer\*\*\**, *A. Seco\**, *J. Ribes\**

\*CALAGUA – Unidad Mixta UV-UPV, Departament d'Enginyeria Química, Universitat de València, Spain

\*\*FCC Aqualia, S.A., Spain

\*\*CALAGUA – Unidad Mixta UV-UPV, Institut Universitari d'Investigació d'Enginyeria de l'Aigua i Medi Ambient – IIAMA, Universitat Politècnica de Valencia, Spain

**P154. [773]. Environmental-friendly solvent PolarClean® to replace polar aprotic solvent for PVDF, PSF, PES and CA membrane preparation**

*HH Wang\**, *JT Jung\**, *J. F. Kim\**, *E Drioli\*\**, *YM Lee\**

\*Department of Energy Engineering, Hanyang University, South Korea

\*\*ITM-CNR, University of Calabria, Italy

**P155. [791]. Recovery of valuable compounds from dairy wastewaters using membrane technology**

*D. Sioutopoulos\**, *H. Lounis\*\**, *K. Kontogianopoulos\**, *K. Georgakidis\*\*\**, *A. Karabelas\**

\*Centre for Research and Technology-Hellas (CERTH), Greece

\*\*Department of Chemical Engineering, Aristotle University of Thessaloniki, Greece

\*\*\*Mevgal SA, Greece

**P156. [801]. Integrated electrocoagulation – ultrafiltration process for treating poultry processing wastewaters**

*K. Sardari*, *Y. Chiao*, *S. R. Wickramasinghe*

Ralph E. Martin Department of Chemical Engineering, University of Arkansas, Fayetteville, AR, USA

**P157. [806]. Direct Contact Membrane Distillation (DCMD) applied to gold mining effluent treatment**

*B G Reis\**, *M R Silva\**, *N. C. Magalhães\**, *H C Ferraz\*\**, *C Cabassud \*\*\**, *M C S Amaral\**

\*Federal University of Minas Gerais (UFMG), Brazil

\*\*Federal University of Rio de Janeiro (UFRJ), Brazil

\*\*National Institute of Applied Sciences of Toulouse (INSA), France

**P158. [849]. Membrane process for water recycle and lupanine recovery on lupin bean processing: preliminary results**

*T. Esteves\**, *S. Battello\*\**, *A. Mota\**, *C. Afonso\*\*\**, *F. Malpei\*\**, *D. Scaglione*, *F. C. Ferreira\*+*

\*Department of Bioengineering and iBB-Institute for Bioengineering and Biosciences, Instituto Superior Técnico, Universidade de Lisboa, Portugal

\*\*Politecnico di Milano, POLIMI DICA, Italy

\*\*Research Institute for Medicines (iMed. ULisboa), Faculty of Pharmacy, Universidade de Lisboa, Portugal

**P159. [851]. Nanofiltration applied for the treatment of cheese, winery and olive oil wastewaters in a region of Portugal**

*T. Bras<sup>1,2</sup>*, *R. Martins<sup>2,3</sup>*, *M. F. Duarte<sup>2,3</sup>*

1 LAQV/ REQUIMTE, FCT, Universidade Nova de Lisboa, Campus de Caparica, Caparica, Portugal

2 Centro de Biotecnologia Agrícola e Agro-Alimentar do Alentejo (CEBAL)/ Instituto Politécnico de Beja (IPBeja), Portugal

3 ICAAM - Instituto de Ciências Agrárias e Ambientais Mediterrânicas, Universidade de Évora, Portugal

**P160. [863]. Mycofilm development in a Membrane-Aerated Biofilm Reactor**

*Ester Rosa\**, *Antonio Comite\*\**, *Mirca Zotti\**

\*Laboratory of mycology, Department of Earth, Environment and Life Sciences (DISTAV), University of Genoa, Italy

\*\*Department of Chemistry and Industrial Chemistry (DCCI), University of Genoa, Italy

**P161. [864]. Permeation of volatile fatty acids in membrane distillation of high protein loaded waste water from meat processing**

*B. Muster-Slawitsch\*,\*\**, *M. Duke\**, *N. Dow\**, *D. Desai\*\*\**, *D. Pinches\*\*\**

\*Institute for Sustainability and Innovation, College of Engineering and Science, Victoria University, Werribee Campus, Australia

\*\*AEE – Institute for Sustainable Technologies, Dep. Industrial Processes and Energy Systems, Austria

\*\*\*Pinches Consolidated Industries, Australia

**P162. [877]. Experimental analysis of plate-and-Frame forward osmosis membrane elements**

*Y. C. Kim\**, *S. Lee\*\**

\*Department of Environmental Machinery, Korea Institute of Machinery & Materials, South Korea

\*\*Department of Environmental Machinery, Korea Institute of Machinery & Materials, South Korea

**P163. [893]. Treatment of table olive wastewaters by means of a low fouling nanofiltration membrane**

*Magdalena Cifuentes-Cabezas\*,\*\*, Silvia Álvarez-Blanco\*,\*\*, José Antonio Mendoza-Roca\*,\*\*, Laura Pastor-Alcañiz\*\*\**

\*Research Institute for Industrial, Radiophysical and Environmental Safety (ISIRYM), Universitat Politècnica de València, Spain

\*\*Department of Chemical and Nuclear Engineering, Universitat Politècnica de València, Spain

\*\*\*Depuración de Aguas del Mediterráneo (DAM), Spain

**P164. [901]. Removal of pharmaceutically active compounds from wastewater treatment plants by a tertiary treatment method**

*Carlos Carbonell-Alcaina\*, María-Isabel Iborra-Clar\*, María-Isabel Alcaina-Miranda\*, Jorge García-Ivars\*, Sergio Barredo-Damas\*, Esperanza M. García Castelló\*\**

\*Research Institute for Industrial, Radiophysical and Environmental Safety (ISIRYM), Universitat Politècnica de València, Spain

**P165. [914]. Study of NF/RO processes to remove pharmaceutically active compounds from wastewater treatment effluents**

*Carlos Carbonell-Alcaina\*, María-Isabel Iborra-Clar\*, María-Isabel Alcaina-Miranda\*, Lucia Martella\*\*, Jorge García-Ivars\*, Sergio Barredo-Damas\*, Alicia Iborra-Clar\**

\*Research Institute for Industrial, Radiophysical and Environmental Safety (ISIRYM), Universitat Politècnica de València, Spain

\*\*Dipartimento di Ingegneria Civile, Chimica, Ambientale e dei Materiali, Università di Bologna, Italy

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**P166. [92]. Integration of electrodialysis and ion-exchange for copper and zinc recovery from metallurgical process streams containing arsenic**

*M. Reig\*, X. Vecino\*, M. Hermassi\*, J. López\*, C. Valderrama\*, O. Gibert\*,\*\*, J.L. Cortina\*,\*\**

\*Chemical Engineering Department, UPC-Barcelona TECH; Barcelona Research Center for Multiscale Science and Engineering, Spain

\*\*CETaqua, Spain

**P167. [109]. A study of hybrid processes for carbon capture**

*A. M. Arias\*, P. L. Mores\*, N. J. Scenna\*, J. A. Caballero\*\*, M. C. Mussati\*\*\*, S. F. Mussati\*\*\**

\*CAIMI Centro de Aplicaciones Informáticas y Modelado en Ingeniería (UTN-FRRo), Argentina

\*\*Chemical Engineering Department, University of Alicante, Spain

\*\*\*INGAR Instituto de Desarrollo y Diseño (CONICET-UTN), Argentina

**P168. [110]. Highlighting the benefits of using state-of-the-art membranes in the propylene production through process optimization**

*R. Zarca\*, A. Ortiz\*, D. Gorri\*, L.T. Biegler\*\*, I. Ortiz\**

\*Department of Chemical and Biomolecular Engineering, University of Cantabria, Spain

\*\*Department of Chemical Engineering, Carnegie-Mellon University, United States

**P169. [237]. A sustainable remineralisation process for hybrid water treatment**

*A.A.M. Abusultana<sup>a</sup>, A.J.B. Kemperman<sup>a</sup>, W.G.J. van der Meer<sup>a, b</sup>*

<sup>a</sup>Membrane Science and Technology Cluster, MESA+ Institute for Nanotechnology, Faculty of Science and Technology, University of Twente, The Netherlands

b Oasen Drinkwater, The Netherlands

**P170. [246]. Evaluation of removal of dissolved organic matter of petroleum refinery effluent in a hybrid uf-osmotic membrane bioreactors by EEMs analysis**

*Clara B. Alvim\**, *Priscila B. Moser\**, *Bárbara C. Ricci\**, *Míriam C.S. Amaral\**

\*Department of Sanitary and Environmental Engineering, Federal University of Minas Gerais, Brazil

**P171. [249]. Concentration by membrane filtration before wet air oxidation for full intensified seawater and wastewater treatment**

*M. Monnot\**, *C. Cordier\**, *S. Lefèvre\*\**, *M. Desdouits\*\*\**, *S. Le Guyader\*\*\**, *C. Stavrakakis\*\*\**, *P. Moulin\**

\* Aix Marseille Univ, CNRS, Cent Marseille, Marseille, France, Equipe Procédés Membranaires (EPM), France

\*\*A3i – Inovertis 255, France

\*\*\*Laboratoire Santé, Génétique et Microbiologie des Molusques (SG2M), France

**P172. [261]. Towards Scaling-Free Design: Deep Concentration of Produced Water by Integrated Membrane Process**

*Sigui Hu<sup>1</sup>*, *Shuaifei Zhao<sup>2</sup>*, *Xiaofei Zhang<sup>3,4</sup>*, *Lei Song<sup>3,4</sup>*, *Yilin Wang<sup>3,4</sup>*, *Yang Zhang<sup>1,5\*</sup>*

1. Qingdao Institute of Bioenergy and Bioprocess Technology, Chinese Academy of Sciences, China

2. Department of Environmental Sciences, Macquarie University, Australia

3. State Key Laboratory of Petroleum Pollution Control, China

4. CNPC Research Institute of Safety and Environmental Technology, China

5. University of Chinese Academy of Sciences, China

**P173. [312]. Controlling the structure of PVDF-TiO<sub>2</sub> membranes prepared by nonsolvent induced phase separation**

*D.T. Tran, J-P. Mericq, J. Mendret, S. Brosillon, C. Faur*

Institut Européen des Membranes (IEM), Université de Montpellier, France

**P174. [575]. PAC-UF treatment for micropollutant removal in municipal wastewater treatment**

*G. Hoffmann\**, *A. Boekels\*\**, *D. Antakyali\*\**, *R. L. Lange\*\*\**, *S. Panglisch\**

\* University Duisburg-Essen, Chair for Mechanical Process Engineering / Water Technology, Germany

\*\* Sweco GmbH, Germany

\*\*\* Emschergerossenschaft, Germany

**P175. [580]. Integration of forward osmosis and membrane distillation for wastewater treatment focused in pharmaceutical removal**

*B.C.Ricci\* \*\**, *C. Mancel\*\*\**, *C. Q. Celestino\*\**, *I. L. C. Cunha\*\**, *M. R. Silva \*\**, *L. D. Miranda\*\**, *M. T. C. Frias\*\**, *C. B. Alvim\**, *L. H. Andrade\*\**, *M. C. S. Amaral\*\**

\*Universidade Federal de Minas Gerais, Brazil

\*\* Pontifícia Universidade Católica de Minas Gerais, Brazil

\*\*\*Avans University of Applied Sciences, The Netherlands

**P176. [923]. Confinement of photocatalytic particles in a slurry photocatalytic membrane reactor using ceramic ultrafiltration membranes**

*R. Janssens, R. Hainaut, P. Luis,*

Université catholique de Louvain, Belgium

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*S. Haindl\**, *A. Reiche\**

\*Sartorius Stedim Biotech, Germany

**P178. [44]. ‘Pervamodel’ enables optimization of single and multichannel pervaporation system design**

*M. Sarić\**, *H.M. van Veen*, *Y.C. van Delft*

Energy Research Center of the Netherlands (ENC), The Netherlands

**P179. [46]. Kinetic Investigations of the Crosslinking of Cellulose Membranes with Bifunctional Epoxides**

*D. Ruhr\*, J. A. Tolk\*, S. van der Kruijs\* and A. Reiche\**

\* Sartorius Stedim Biotech GmbH, Germany

**P180. [132]. Membrane formation by phase inversion in industrial scale - techniques to gain process insight**

*J. Schwellenbach\*, M. Hoehse\*, V. Guschin\*\*, B. Hansmann\**

\*Sartorius Stedim Biotech GmbH, Germany

\*\*Sartorius Stedim Systems GmbH, Germany

**P181. [162]. Modelling mixed gas sorption in glassy polymers for CO<sub>2</sub> capture from gaseous streams**

*E. Ricci, E. Tacchini, M. G. De Angelis*

DICAM, Department of Civil, Chemical, Environmental and Materials Engineering, University of Bologna, Italy

**P182. [173]. A rigorous approach for the reliable description of gas sorption thermodynamics in glassy Cellulose Acetates**

*E. Ricci\*, E. Di Maio\*\*, M. Degli Esposti\*, P. Fabbri\*, G. Mensitieri\*\*, M.G. De Angelis\**

\*Department of Civil, Chemical, Environmental and Materials Engineering, University of Bologna, Italy

\*\*Dipartimento di Ingegneria chimica, dei Materiali e della Produzione industriale, University of Naples, Italy

**P183. [174]. Combined Membrane and Thermal Desalination Processes for the Treatment of Industrial Brines**

*M. Micari\*, M. Moser\*, B. Fuchs\*, M. Bevacqua\*\*, A. Tamburini\*\*, A. Cipollina\*\*, G. Micale\*\**

\*German Aerospace Center (DLR), Institute of Engineering Thermodynamics, Germany

\*\*Dipartimento dell'Innovazione Industriale e Digitale (DIID), Università degli Studi di Palermo (UNIPA), Italy

**P184. [200]. Predicting the evolution of performances during nanofiltration of ionic solutions in concentration and diafiltration modes**

*S. Déon, B. Lam, P. Fievet*

Institut UTINAM, Université de Bourgogne Franche-Comté, France

**P185. [206]. Modelling of gas flow through microporous media: application for membrane characterization.**

*C. Savaro\*, J.P. Bonnet\*, P. Moulin\**

\*Aix Marseille Université, CNRS, Centrale Marseille, Equipe Procédés Membranaires (EPM), France

**P186. [253]. Mathematical Modeling of Hollow Fiber Membrane Module for Multicomponent Gas Separation Using Orthogonal Collocation**

*Y. Chu, X. He, A. Lindbråthen, M. Hillestad*

Department of Chemical Engineering, Norwegian University of Science and Technology, Norway

**P187. [324]. Multi-scale modelling of proteins fouling in membrane based processes**

*G. De Luca\*, F. Petrosino\*\*, M. Morrone\*\*, S. Curcio\*\**

\*Research Institute on Membrane Technology (CNR), University of Calabria, Italy

\*\*Department of Informatics, Modelling, Electronics and Systems Engineering (D.I.M.E.S.), Laboratory of Transport Phenomena and Biotechnology, University of Calabria, Italy

**P188. [326]. The Relevance of Critical "Liquid Entry Pressure" in Membrane Distillation**

*J.W. Tan\*, G. Leslie\**

\*UNESCO Centre for Membrane Science and Technology, School of Chemical Engineering, UNSW Sydney, Australia

**P189. [341]. Modelling of the transfer mechanisms of a protein during its ultrafiltration in hydro-alcoholic media**

*Al Jawad Hiba\*, \*\*, Rabiller-Baudry Murielle\*, Loulergue Patrick\**

\*Univ Rennes, CNRS, ISCR (Institut des Sciences Chimiques de Rennes) - Rennes, France

\*\*Université Libanaise, Ecole Doctorale des Sciences et Technologies, Centre AZM pour la recherche en biotechnologie et ses applications, Liban

**P190. [350]. Atomistic simulation of gas diffusion and sorption in CO<sub>2</sub>-polystyrene systems**

*E. Ricci\**, *N. Vergadou\*\**, *G. Vogiatzis\*\*\**, *M.G. De Angelis\**, *D.N. Theodorou\*\*\*\**

\*Department of Civil, Chemical, Environmental and Materials Engineering, University of Bologna, Italy

\*\*Institute of Nanoscience and Nanotechnology, NCSR Demokritos, Greece

\*\*\*Department of Mechanical Engineering, Eindhoven University of Technology, Netherlands

\*\*\*\*School of Chemical Engineering, National Technical University of Athens, Greece

**P191. [360]. Modelling humid gas permeability in perfluorosulfonic acid Membranes**

*L. Olivieri\**, *M. Giacinti Baschetti\**, *G. C. Sarti\**

\*Dipartimento di Ingegneria Civile Chimica Ambientale e dei Materiali, Alma Mater Studiorum-Università di Bologna, Italy

**P192. [365]. A thermodynamic model for the prediction of mixed gas transport and solubility in glassy polymers**

*M. Minelli,<sup>a,b</sup> G.C. Sarti<sup>a</sup>*

a. Dept. Civil, Chemical, Environmental and Materials Engineering, University of Bologna, Italy

b. Interdept. Center for Industrial Research, Adv. Mechanics and Materials, Univ. of Bologna, Italy

**P193. [395]. Effect of membrane initial state on the pH of desalinated solution in the course of neutralization dialysis process**

*A. Kozmai\**, *V. Nikonenko\**, *N. Pismenskaya\**, *A. Klevtsova\**, *L. Dammak\*\**

\*Membrane Institute, Kuban State University, Russia

\*\*Institut de Chimie et des Matériaux Paris-Est (ICMPE), Université Paris-Est Créteil, France

**P194. [431]. Mechanical-fluid dynamics coupled model for profiled Ion Exchange Membranes design**

*G. Battaglia\**, *M. Ciofalo\*\**, *A. Cipollina\*\**, *A. Di Matteo\**, *L. Gurreri\*\**, *A. Pirrotta\**,<sup>\*\*\*</sup>, *A. Tamburini\*\**, *G. Micale\*\**

\*Dipartimento di Ingegneria Civile, Ambientale, Aerospaziale, dei Materiali (DICAM), Università degli Studi di Palermo, Italy

\*\*Dipartimento dell'Innovazione Industriale e Digitale (DIID), Università degli Studi di Palermo, Italy

\*\*\*Department of Mathematical Sciences, University of Liverpool, United Kingdom

**P195. [433]. Prediction of Plasticization Resistance of Gas-Separation Polymers via Atomistic Simulations**

*Marcel Balcik\**, *M. Göktug Ahunbay\**

\*Department of Chemical Engineering, Istanbul Technical University, Turkey

**P196. [439]. Modeling and simulation of photovoltaic solar energy electro dialysis with bipolar membranes**

*M. Herrero-Gonzalez*, *G. Diaz-Sainz*, *A. Dominguez-Ramos*, *R. Ibañez*, *A. Irabien*

Departamento de Ingenierías Química y Biomolecular, Universidad de Cantabria, Spain

**P197. [479]. Effect of fibre packing density on shear stress induce by pulse bubble aeration: CFD modelling comparison with experiments**

*Elham Radaei\**, *Xuefei Liu\**, *Giuseppe Merendino\*\**, *Francisco Trujillo\**, *Pierre Berube\*\*\**, *Greg Leslie\**

\*UNESCO Centre for Membrane Science & Technology, School of Chemical Engineering, University of New South Wales, Australia

\*\*Technische Universität, Germany

\*\*\*Filtration Technology Group, Department of Civil Engineering, University of British Columbia, Canada

**P198. [728]. CO<sub>2</sub>-Induced Plasticization of PIM-1 Membranes**

*Marcel Balcik*, *M. Göktug Ahunbay*

Department of Chemical Engineering, Istanbul Technical University, Turkey

**P199. [731]. Efficient use of steam as sweep in facilitated transport membrane processes from post-combustion carbon capture**

*Stuart Blackburn\**, *Marco Giacinti Baschetti\*\**, *Maria-Chiara Ferrari\**

\*School of Engineering, Institute for Materials and Processes, The University of Edinburgh, United Kingdom

\*\*Dipartimento di Ingegneria Civile, Chimica, Ambientale e dei Materiali (DICAM), Alma Mater Studiorum - Università di Bologna, Italy

**P200. [748]. Molecular simulation of ionic liquids as gas separation media**

*N. Vergadou\**, *E. Androulaki\**, *I.G. Economou\*\**

\*Institute of Nanoscience and Nanotechnology, National Center for Scientific Research "Demokritos", Greece

\*\*Texas A&M University at Qatar, Chemical Engineering Program, Qatar

**P201. [749]. Simulation of dynamic ultrafiltration using a state-space model**

**V. H. Grisales Díaz\***, **O. A. Prado-Rubio\*\***, **M. J. Willis\***, **M. von Stosch\***

\*School of Engineering, Newcastle University, UK

\*\*Departamento de Ingeniería Química, Universidad Nacional de Colombia, Colombia

**P202. [760]. Antibacterial Activity of Nanomaterials: Computer Simulations of Physical Contacts between Nanoparticles and Cell Membrane**

*O.-S. Lee*, *K. A. Mahmoud*

Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, Qatar

**P203. [807]. Simulation of the radial membrane gas separation module for hybride processes in Aspen Plus**

*M.M. Trubyanov*, *S.V. Battalov*, *E.S. Puzanov*, *A.A. Kozlova*, *P.N. Drozdov*, *I.V. Vorotyntsev*

Laboratory of membrane and catalytic processes, Nanotechnology and Biotechnology Department, Nizhny Novgorod State Technical University, Russia

**P204. [822]. Multiparametric mathematical model for optimization of unsteadystate membrane gas separation with pulsed retentate mode**

*T.S. Sazanova*, *M.M. Trubyanov*, *S.V. Battalov*, *E.S. Puzanov*, *V.M. Vorotyntsev*, *P.N. Drozdov*, *I.V. Vorotyntsev*

Laboratory of membrane and catalytic processes, Nanotechnology and Biotechnology Department, Nizhny Novgorod State Technical University, Russia

**P205. [855]. Recovery of gas transport properties in glassy membranes using the concept of instantaneous time-lag**

*H. Wu\**, *N. O. Usifoh\**, *J. Thibault\**, *B. Kruczek\**

\*University of Ottawa, Canada

**P206. [857]. Prediction of gas mixture transport through zeolitic membranes based on a limited number of pure gas permeation experiments**

*David Carter\**, *Dana Li\**, *Anwuli Omenogor\**, *F. Handan Tezel\**, *Boguslaw Kruczek\**

\*Department of Chemical and Biological Engineering, University of Ottawa, Canada

**P207. [867]. New approach to the membrane scaling risk assessment – numerical simulation of the CaSO<sub>4</sub> scaling prevention**

*M. Turek\**, *K. Piotrowski\*\**, *P. Dydo\**, *K. Mitko\**, *E. Laskowska\**, *A. Jakóbi-Kolon\**

\*Silesian University of Technology, Faculty of Chemistry, Department of Inorganic, Analytical Chemistry and Electrochemistry, Poland

\*\*Silesian University of Technology, Faculty of Chemistry, Department of Chemical Engineering and Process Design, Poland

**P208. [892]. Evaluation of Tortuosity as a Geometrical Parameter to quantify the 3D Connectivity of a Membrane Structure**

*G. Azzato\**, *Y. Sun\*\**, *V. Stellato\*<sup>b</sup>*, *G. De Marco\*\*\*<sup>c</sup>*, *A. Caravella\*<sup>a</sup>*

\*Department of Environmental and Chemical Engineering (DIATIC), University of Calabria, Italy

\*\*International Institute for Carbon-Neutral Energy Research (WPI-I2CNER), Kyushu University, Japan

\*\*\*Information Technology Center (ICT), University of Calabria, Rende (CS), Italy

**P209. [905]. Viscoelastic effects on the response of electroelastic materials**

*R. Diaz-Calleja<sup>1</sup>*, *P. Llovera-Segovia<sup>1,3</sup>*, *A. Quijano-López<sup>1,3</sup>*, *D. Ginestar<sup>2</sup>*, *C. Burgos-Simón<sup>2</sup>*, *J.C. Cortes<sup>2</sup>*

<sup>1</sup>ITE-Universitat Politècnica de València, Valencia (Spain)

<sup>2</sup> Instituto Universitario de Matemática Multidisciplinar- Universitat Politècnica de València, Spain

<sup>3</sup> Instituto Tecnológico de la Energía-Redit, Spain

**P210. [919]. CFD study on the influence of water transpiration on flow and mass transfer in channels with bipolar membranes**

*L. Gurreri, M. Di Liberto, L. Scelsi, A. Tamburini, A. Cipollina, M. Ciofalo, G. Micale*

Dipartimento dell'Innovazione Industriale e Digitale (DIID), Università degli Studi di Palermo, Italy

## Inorganic membranes

**P211. [36]. Development of porous ceramic substrates for zeolite membranes**

*Hirokazu Watanabe, Tomokazu Eda, Yuko Nishida and Keita Miyajima*

Research and Development Center, Noritake Co., Limited, Japan

**P212. [58]. Characterization Of Silicon Carbide (SiC) Membranes**

*M. Trevisan\*., J. Vicente\*\*, S. Lacampagne\*\*\*\*, R. Ghidossi\*\*\*\*, A. Vincent\*, P. Moulin\*\**

\*Saint-Gobain CREE, Centre d'Etude et de Recherche Européen, Cavaillon

\*\*Laboratoire de Mécanique, Modélisation et Procédés Propres (M2P2-CNRS-UMR 7340), Aix-Marseille Université, France

\*\*\*Institut Universitaire des Systèmes Thermiques Industriels (IUSTI-CNRS-UMR 6595), Aix-Marseille Université Technopole de Château-Gombert, France

\*\*\*\*Institut des Sciences de la Vigne et du Vin, UR OEnologie - Axe Identité et Qualité du Vin, Université de Bordeaux, France

**P213. [169]. Effect of pore size, surface coating material and electrolyte in the diffusive transport across ceramic ALD-coated nanoporous alumina membranes**

*L. Gelde\*, M<sup>a</sup>.V. Martínez de Yuso\*\*, V. Romero\*, V. Vega\*\*\*, A.S. González\*\*\*\*, V.M. Prida\*\*\*\*, B. Hernando\*\*\*\*, J. Benavente\**

\*Dpto. Física Aplicada I. Facultad de Ciencias. Universidad de Málaga, Spain

\*\*Servicios Centrales de Investigación. Universidad de Málaga, Spain

\*\*\*Laboratorio de Membranas Nanoporosas. Servicios Científico-Técnicos Universidad de Oviedo, Spain

\*\*\*\* Depto. Física. Facultad de Ciencias. Universidad de Oviedo, Spain

**P214. [537]. Elaboration and characterization of flat ceramic microfiltration membrane made from natural Moroccan kaolinite. Application for pretreatment of seawater desalination**

*Samhari Omar\*, \*\*, Alami Younssi Saad\*, Rabiller-Baudry Murielle \*\*, Bouhria Mohamed\*, Loulergue Patrick \*\**

\*Laboratoire des Matériaux Membranes et Environnement, Faculté des Sciences et Techniques Mohammedia - Université Hassan II de Casablanca, Morocco

\*\*Univ Rennes, CNRS, ISCR (Institut des Sciences Chimiques de Rennes), France

**P215. [578]. Wastes from industrial processes introduced as chamottes in ceramic membranes**

*M-M. Lorente-Ayza\*, M.C. Bordes\*, S. Sales\*, E. Sánchez\*, P. Ugarte\*\*, A. Ramo\*\*, M. Menéndez\*\*, J.A. Peña\*\*, E. Zuriaga-Agusti\*\*\*, E. Santateresa\*\*\*, A. Gozalbo\*\*\*, J. Rubert\*\*\*\*, O. Sos\*\*\*\*, J.A. Basiero\*\*\*\*\**

\*Departamento de Ingeniería Química, Instituto Universitario de Tecnología Cerámica (ITC). Universitat Jaume I, Spain

\*\*Catalysis, Molecular Separations and Reactor Engineering Group (CREG). Aragon Institute of Engineering Research (I3A), Universidad Zaragoza

\*\*\*Sociedad Fomento Agrícola Castellonense, FACSA, Spain

\*\*\*\*Natucer, S.L., Spain

\*\*\*\*\*Entidad Pública de Saneamiento de Aguas Residuales de la Comunidad Valenciana (EPSAR), Spain

**P216. [595]. Pervaporation of ethyl acetate/ethanol mixuter using hydrophobic silica membrane**

*M. Nakata\*, A. Okabe\* S. Araki\*, H. Yamamoto\**

\*Department of Chemical, Energy and Environmental Engineerign, Kansai University, Japan

**P217. [596]. Separation of methanol from organic mixtures using CHA type zeolite membranes**

*Yuto Okubo\*, Hitomi Miyamoto\*, Satoshi Imasaka\*, Sadao Araki\*, Hideki Yamamoto\**

\* Department of Chemical, Energy and Environmental Engineerign, Kansai University, Japan

**P218. [776]. Electrophoretic Nuclei Assembly for Crystallization of High Performance Membranes on Unmodified Supports**

*Guangwei He, Kumar Varoon Agrawal*

1 Laboratory of Advanced Separations (LAS), École Polytechnique Fédérale de Lausanne (EPFL), Switzerland

**P219. [852]. Synthesis of self-supported geopolymeric membrane from waste ashes**

*Amir Naveed, Saeed Gul*

Department of Chemical Engineering, University of Engineering & Technology Peshawar, Pakistan

**P220. [876]. Robust Alumina Hollow Fiber Membranes and Their Applications in Harsh Environment**

*Young Hoon Cho, Seongmin Jeong, Sung-Joong Kim, Yeojin Kim, Jeong Kim, Hosik Park, Pyung Soo Lee, You-In Park, Seung-Eun Nam*

Center for Membrane, Advanced Green Chemical Material Division, Korea Research Institute of Chemical Technology, Korea

## Membrane contactors

**P221. [29]. Liquid breakthrough of hydrophobic membranes: a novel method of characterization at high temperature**

*F. Varela-Corredor, S. Bandini*

Department of Civil, Chemical, Environmental and Materials Engineering, University of Bologna, Italy

**P222. [30]. Liquid breakthrough of hydrophobic membranes: a study of the Temperature dependency**

*F. Varela-Corredor, M. K. Fawzy, S. Bandini*

Department of Civil, Chemical, Environmental and Materials Engineering, University of Bologna, Italy

**P223. [31]. Characterization of multilayer hydrophobic ceramic membranes for sweeping gas membrane distillation**

*M. K. Fawzy\*, F. Varela-Coredor, S. Bandini*

Department of Civil, Chemical, Environmental and Materials Engineering, University of Bologna, Italy

**P224. [84]. 3D printed membranes for enhanced oil-water separation**

*A. Thalib, J. Chew, D. Mattia*

Centre for Advanced Separations Engineering and Department of Chemical Engineering, University of Bath, UK

**P225. [91]. Ammonia recovery from urban treated wastewater by using hollow fiber liquid-liquid membrane contactors**

*B. Bhushan\*, X. Vecino\*, M. Reig\*, I. Sancho, J. López\*, C. Valderrama\*, O. Gibert\*, \*\*, J.L. Cortina\*, \*\**

\*Chemical Engineering Department, UPC-Barcelona TECH; Barcelona Research Center for Multiscale Science and Engineering, Spain

\*\*CETaqua, Spain

**P226. [230]. Porous and composite hollow fiber membranes for ethylene/ethane separation in gas-liquid membrane contactor**

*A. Ovcharova\*, V. Vasilevsky\*, I. Borisov\*, S. Bazhenov\*, A. Bilyukevich\*\*, V. Volkov\**

\*A.V. Topchiev Institute of Petrochemical Synthesis RAS (TIPS RAS), Russia

\*\*Institute of Physical Organic Chemistry NASB (IPOC NASB), Belarus

**P227. [308]. Effect of absorbent viscosity on the performance of non-porous membrane contactor for CO<sub>2</sub> separation**

*L. Ansaloni, H.K. Betten, H.K. Knuutila, L. Deng*

Department of Chemical Engineering, Norwegian University of Science and Technology, Norway

**P228. [359]. Broadening the applications of membrane distillation towards high salinity brines – from lab to pilot scale**

*L. Eykens\*, K. De Sitter\**



\* VITO NV – Flemish institute for technological research, Belgium

**P229. [427]. Membrane condenser use in cooling towers**

*F. Macedonio, M. Frappa, A. Brunetti, G. Barbieri, E. Drioli*  
Institute on Membrane Technology, ITM-CNR, Italy.

**P230. [429]. Comparison of harvesting by membrane filtration and permeate treatment performances for different microalgae systems**

*CF Galinha\*, J Monte\*\*, J Bernardo\*\*, M Cadima\*\*, M Sá\*, B Cristovão\*\*, V Pereira\*\*, C Brazinha\*, JG Crespo\**  
\* LAQV-REQUIMTE, Chemistry Departments, FCT, Universidade Nova de Lisboa, Portugal  
\*\*iBET, Instituto de Biologia Experimental e Tecnológica, Portugal

**P231. [496]. Purification of anaesthetic gases using gas-ionic liquid membrane contactors**

*C. F. Martins\*, L. A. Neves\*, C. A. M. Afonso\*\*, I. M. Coelho\*, J. G. Crespo\**  
\*LAQV, Requite, Chemistry Department, Faculdade de Ciências e Tecnologia, Universidade NOVA de Lisboa, Portugal  
\*\*Instituto de Investigação do Medicamento (iMed.Ulisboa), Faculdade de Farmácia, Universidade de Lisboa, Portugal

**P232. [608]. Recovery of uranium and other valuable metals from phosphate rocks using the membrane contactor**

*A. Miśkiewicz, K. Kiegiel, D. Gajda, G. Zakrzewska-Kottuniewicz*  
\*Institute of Nuclear Chemistry and Technology, Poland

**P233. [631]. Harnessing clean water from power plant emissions using membrane condenser technology**

*J Kim\*, A Park\*, SJ Kim\*\*, PS Lee\*, YH Cho\*, HS Park\*, SE Nam\*, YI Park\**  
\*Research Center for Membranes, Advanced Materials Division, Korea Research Institute of Chemical Technology, Republic of Korea  
\*University of Science & Technology (UST), Republic of Korea

**P234. [737]. Membrane distillation for juice concentration in the food industry**

*R.J.M. Creusen, N.J.M. Kuipers, W.G.J.M. van Tongeren, J.G.H. Brouwer*  
Wageningen Food and Biobased Research, The Netherlands

**P235. [796]. Membrane-based liquid extraction as a key technology for secondary zinc recovery from spent pickling acids**

*Ane Urriaga<sup>1,\*</sup>, Inmaculada Ortiz<sup>1</sup>, Javier Pinedo<sup>2</sup>, Pedro Gómez<sup>2</sup>*  
1 Department of Chemical and Biomolecular Engineering. University of Cantabria, Spain  
2 APRIA Systems S.L. Parque Empresarial de Morero, Cantabria, Spain

**P236. [831]. Reactive extraction in membrane contactors for *in situ* product recovery of biobased 3-hydroxypropionic acid**

*Florian Chemarin<sup>1,2</sup>, Marwen Moussa<sup>1,\*</sup>, Ana Karen Sanchez-Castaneda<sup>1</sup>, Cristian Trelea<sup>1</sup>, Violaine Athès<sup>1</sup>*  
1 UMR GMPA : AgroParisTech, INRA, Université Paris-Saclay, France  
2 Chaire AgroBiotechnologies Industrielles, AgroParisTech, France

## Facilitated transport

**P237. [301]. Transport of Kraft lignin and lignosulphonates through supported ionic liquid membranes**

*R. Abejón, S. Lanza, J. Rabadán, A. Garea, A. Irabien*  
\*Chemical and Biomolecular Engineering Department, University of Cantabria, Spain

**P238. [374]. Nafion membranes for propylene/propane separation using AgBF<sub>4</sub>/BMImBF<sub>4</sub> system**

*A. Campos\*, D. Gorri\*, R. Reis\*\*, A. Ortiz\*, I. Ortiz\**  
\*Department of Chemical and Biomolecular Engineering. University of Cantabria, Spain

\*\*Institute of Chemistry, Rio de Janeiro State University (UERJ), Brazil

**P239. [413]. Acid Orange 6 removal from aqueous solutions by emulsion liquid membranes using a facilitated counter-transport mechanism**

*G. León\**, *F. Andúa\**, *A. Hidalgo\*\**, *B. Miguel\**, *E. Gómez\*\**

\*Departamento de Ingeniería Química y Ambiental. Universidad Politécnica de Cartagena, Spain

\*\*Departamento de Ingeniería Química. Facultad de Química. Universidad de Murcia, Spain

**P240. [506]. Hybrid facilitated transport membranes containing GO-based nanoplatelets for CO<sub>2</sub> separation**

*S. Janakiram\**, *Z. Dai\**, *L. Ansaloni\**, *H. B. Park\*\**, *L. Deng\**

\*Department of Chemical Engineering, Norwegian University of Science and Technology (NTNU), Norway

\*\*Department of Energy Engineering, Hanyang University, South Korea

**P241. [653]. Supported ionic liquid membranes applied to metal ions recognition: study of membrane impregnation and stability**

*G. Zante\**, *\*\**, *A. Masmoudi\**, *M. Boltoeva\**, *R. Barillon\**, *D. Trébouet\**

\*Université de Strasbourg, CNRS, France

\*\* ADEME 20, France

**P242. [709]. Development and application of passive samplers based on polymer inclusion membranes for evaluating the fate of toxic metals in Wetlands**

*N M Motsoane\**, *H Richards*, *\*\*L Chimuka\*\**

\* University of Witwatersrand, South Africa

**P243. [765]. Polymer inclusion membranes containing different ionic liquids as carriers for the transport of As in natural waters**

*R. Vera\**, *E. Antico\**, *C. Fontàs\**

\*Chemistry Department, University of Girona, Spain

Wednesday, 11<sup>th</sup> July 2018

**Poster session II: Membrane formation and surface modification, Membrane fouling and ageing, Nanofiltration and Reverse Osmosis, Electrochemical membrane processes, Membranes for energy conversion and storage, Fuel cells and batteries, Nanotechnology and membranes, Emerging membrane science and technology, Biomedical membrane applications, Process intensification and economic analysis, Membrane module development, Osmotic membrane contactors.**

## Membrane formation and surface modification

**P1. [14]. Modelling of porous polymer membrane formation**

*Manuel Hopp-Hirschler\**, *Ulrich Nieken\**

\*University of Stuttgart, Institute of Chemical Process Engineering, Germany

**P2. [22]. Sulfonated polysulfone-based membranes for forward osmosis with highly hydrophilic and stable support layers**

*D. Grinic\**, *M. Giagnorio\**, *M. Sangermano\*\**, *A. Tiraferri\**

\*Department of Environment, Land and Infrastructure Engineering, Politecnico di Torino, Italy

\*\*Department of Applied Science and Technology, Politecnico di Torino, Italy

**P3. [67]. Examining the phase separation behaviour of polymer solutions for the production of macroporous membranes via NIPS**

*C. Kahrs\**, *\*\**, *J. Schwellenbach\*\**, *M. Metze\*\**, *B. Hansmann\*\**

\*Institute of Technical Chemistry, Leibniz University Hannover, Germany

\*\*Sartorius Stedim Biotech GmbH, Germany

**P4. [74]. Investigation of the liquid film retention in slippery liquidinfused membranes (SLIMs)**

*H. Bazyar\**, *S. Porada\*\**, *R. G. H. Lammertink\**

\*University of Twente, department of science and technology (TNW), Soft matter fluidics and interfaces (SFI), The Netherlands

\*\*Wetsus, European centre of excellence for sustainable water technology

**P5. [75]. PHAs polymers for the development of new membrane materials with controlled structure**

*P. Tomietto<sup>a,b</sup>*, *P. Loulergue<sup>b</sup>*, *L. Paugam<sup>b</sup>*, *J.-L. Audic<sup>a,b</sup>*

a Ecole Nationale Supérieure de Chimie de Rennes, France

b Univ Rennes, CNRS, ISCR, France

**P6. [138]. Polyacrylonitrile electrospun nanofiber based membranes for air filtration**

*Riyadh Al-Attabi<sup>1,2,3</sup>*, *Yosry Morsi<sup>1</sup>*, *Jürg A. Schütz<sup>4</sup>*, *Ludovic F. Dumée<sup>3</sup>*

1 Faculty of Science, Engineering and Technology, Swinburne University of Technology, Australia

2 Deakin University, Institute for Frontier Materials, Australia

3 Middle Technical University, Al-Zafaraniyah, Iraq

4 CSIRO Manufacturing, Australia

**P7. [151]. Silica nanotemplate/PVDF membrane composites for advanced crystallization processes**

*E. Pantuso\**, *K. Armentano\**, *P. Formoso\**, *G. De Filpo\*\**, *G. Di Profio\*\*\**, *T.F. Mastropietro\*\*\**, *J.Y.Y. Heng\*\*\*\**, *E. Curcio\*\*\*\**, *F.P. Nicoletta\**

\*University of Calabria (UNICAL), Department of Pharmacy, Health and Nutritional Sciences (DFSSN), Italy

\*\*University of Calabria (UNICAL), Department of Chemistry and Chemical Technologies (DCTC), Italy

\*\*\*National Research Council of Italy (CNR) - Institute on Membrane Technology (ITM), Italy

\*\*\*Surfaces and Particle Engineering Laboratory, Department of Chemical Engineering, Imperial College London, UK  
\*\*\*\*University of Calabria (UNICAL), Department of Environmental and Chemical Engineering (DIATIC), Italy

**P8. [159]. Formation of block copolymer membranes from polystyrene-*b*-poly(solketal methacrylate) (PS-*b*-PSMA) and polystyrene-*b*-poly(glyceryl methacrylate) (PS-*b*-PGMA)**

*Sarah Saleem* \*, *Sofia Rangou* \*, *Clarissa Abetz* \*, *Brigitte Lademann* \*, *Volkan Filiz* \*, *Volker Abetz* \*, \*\*

\*Helmholtz-Zentrum Geesthacht, Institute of Polymer Research, Germany

\*\*University of Hamburg, Institute of Physical Chemistry, Germany

**P9. [176]. 3D-printed rotating spinnerets create helical multibore membranes – fabrication and characterization**

*D. Rall* \*, \*\*, *T. Luef* \*, \*\*, *D. Wypysek* \*, \*\*, *M. Wiese* \*, *T. Femmer* \*, *C. Bremer* \*, *J. Michaelis* \*, *M. Wessling* \*, \*\*

\*RWTH Aachen University, AVT.CVT – Chemical Process Engineering, Germany

\*\*DWI Leibniz Institute for Interactive Materials, Germany

**P10. [196]. Continuous dip coating of hollow fiber membranes**

*I. Jesswein* \*, *S. Uebele* \*\*, *T. Schiestel* \*\*

\*Institute of Interfacial Process Engineering and Plasma Technology IGVP, Germany

\*\*Fraunhofer Institute for Interfacial Engineering and Biotechnology IGB, Germany

**P11. [223]. Grafting of polyvinylidene fluoride ultrafiltration membrane by low-dose electron beam**

*M.N. Nguyen* \*, *N. Karpel Vel Leitner* \*, *B. Teychene* \*

\*Institut de Chimie des Milieux et des Matériaux de Poitiers (UMR CNRS 7285), École Nationale Supérieure d'Ingénieurs de Poitiers (ENSIP), University of Poitiers, France

**P12. [321]. Novel strategies of PVA membranes modification to improve pervaporation properties**

*A.V. Penkova* \*, *M.E. Dmitrenko* \*, *A.I. Kuzminova* \*, *D. Roizard* \*\*

\*St.-Petersburg State University, Russia

\*\*CNRS, Université de Lorraine, ENSIC, France

**P13. [322]. Novel hemodialysis membranes: Effect of MMT clay in polysulfone/AN69 membrane**

*A. Ouradj*<sup>a,b</sup>, *N. Chérifi*<sup>a,c</sup>, *F. Ouhib*<sup>d</sup>, *Q.T. Nguyen*<sup>f</sup>, *A. Benaboura*<sup>a</sup>

a Université des Sciences et Technologie Houari Boumediene, Faculté de Chimie, Laboratoire de Synthèse Macromoléculaire et Thio-Organique Macromoléculaire, Algeria

b Faculté des sciences, Université Saad Dahleb de Blida, Algeria

c Centre de Recherche Scientifique et Technique en Analyses Physico-Chimiques, Algeria

d Centre for Education and Research on Macromolecules, Chemistry Department, University of Liège, Belgium

f Laboratoire “Polymères, Biopolymères, Surfaces”, Université de Rouen UMR CNRS, France

**P14. [348]. Development of electrospun PIM1 fibres**

*Elsa Lasseguette*, *Anna Fox*, *Maria-Chiara Ferrari*

School of Engineering, Institute for Materials and Processes, The University of Edinburgh, United Kingdom

**P15. [358]. Development of mixed-matrix green membranes based on PVA and chitosan for pervaporation**

*M.E. Dmitrenko* \*, *A.V. Penkova* \*, *A.I. Kuzminova* \*, *D. Roizard* \*\*

\*Institute of Chemistry, St. Petersburg State University, Russia

\*\* Laboratoire Réactions et Génie des Procédés, UMR CNRS-Université de Lorraine, France

**P16. [375]. Preparation of heterogeneous anion exchange membranes from recycled membranes**

*A. Ortiz de Lejarazu* \*, *S. Molina* \*, *J. M. Ortiz* \*, *R. Navarro* \*\*, *J. Landaburu-Aguirre* \*, *E. García-Calvo* \*, \*\*\*

\*IMDEA Water Institute, Spain

\*\*Institute of Polymer Science and Technology (CSIC), Spain

\*\*\*Chemical Engineering Department, University of Alcalá, Spain

**P17. [380]. Effect of different polyanions on properties of polyelectrolyte multilayer membranes**

*A. Pihlajamäki*<sup>1</sup>, *A. Carrete Raposo*<sup>2</sup>, *M. Mänttär*<sup>1</sup>

1 Lappeenranta University of Technology, Finland

2 University of Oviedo, Spain

**P18. [384]. A Greener Process for the production of tailored PVDF membranes**

*T. Poerio\**, *E. Fontananova\**, *C. Meringolo\**, *T. F. Mastropietro\**, *G. De Filpo\*\**, *E. Curcio\*\*\**, *G. Di Profio\**

\*National Research Council of Italy (CNR) - Institute on Membrane Technology (ITM), Italy

\*\*University of Calabria (UNICAL), Department of Chemistry and Chemical Technologies (DCTC), Italy

\*\*\*University of Calabria (UNICAL), Department of Environmental and Chemical Engineering (DIATIC), Italy

**P19. [388]. Antibiofouling surface modification of recycled reverse osmosis membranes for membrane bioreactors**

*L. Rodríguez-Sáez\**, *J. Landaburu-Aguirre\**, *S. Molina\**, *Eloy García-Calvo\*\*,\*\**

\*IMDEA Water Institute, Spain

\*\*Chemical Engineering Department, University of Alcalá, Spain

**P20. [421]. Selective diffusion of solvent and nonsolvent in triple spinneret to prepare of high-performance PVDF hollow fiber membranes**

*J.T Jung\**, *H.H Wang\**, *J. F. Kim\**, *E. Drioli\*\*\**, *Y.M Lee\**

\*Department of Energy Engineering, Hanyang University, South Korea

\*\*ITM-CNR, University of Calabria, Italy

**P21. [440]. Material, Charge and Retention for a series of TFC Nanofiltration Membranes**

*A. Otero-Fernández\**, *P. Díaz\*\**, *J.A. Otero\*\*\**, *R. Ibáñez\*\**, *A. Maroto-Valiente\**, *L. Palacio\*\*\*\**, *P. Prádanos\*\*\*\** and *A.Hernández\*\*\*\**

\*Departamento de Química Inorgánica y Química Técnica, Facultad de Ciencias, Universidad Nacional de Educación a Distancia (UNED), Madrid, Spain

\*\*Grupo de Ingeniería de procesos sostenibles. Depto. de Ingeniería Química y Biomolecular, E.T.S. de Ingenieros Industriales y Telecomunicación, Universidad de Cantabria, Spain

\*\*\*Grupo de Ingeniería de Procesos de Filtración con Membranas (IPFM), Depto.de Ingeniería Química y Biomolecular. E.T.S. de Ingenieros Industriales y Telecomunicación. Universidad de Cantabria, Spain

\*\*\*\*Grupo de Superficies y Materiales Porosos (SMAP), Dpto. de Física Aplicada, Facultad de Ciencias, Universidad de Valladolid, Spain

**P22. [460]. Novel spinning methods for the preparation of corrugated hollow fiber membranes for membrane distillation**

*L. García-Fernández\*,\*\**, *M.C. García-Payo\*\**, *M. Khayet\*\*\**, *\*\*\**

\*Laboratoire des Fluides Complexes et leurs Réservoirs-IPRA, Univ Pau & Pays Adour, France

\*\*Department of Applied Physics I, Faculty of Physics, University Complutense of Madrid, Spain

\*\*\*Madrid Institute for Advanced Studies of Water (IMDEA Water Institute), Spain

**P23. [482]. Fabrication of cellulose-based OSN membranes from DMSO/IL solutions**

*T.S. Anokhina*, *V.Ya. Ignatenko*, *A.A. Yushkin*, *S.O. Ilyin*, *S.V. Antonov*, *A.V. Volkov*

A.V.Topchiev Institute of Petrochemical Synthesis RAS, Russia

**P24. [483]. PAN membranes for aprotic solvents filtration application**

*A.A.Yushkin\**, *M.N.Efimov\**, *L.Marbelia\*\**, *I.F.J.Vankelecom\*\**, *A.V.Volkov\**

\*A.V.Topchiev Institute of Petrochemical Synthesis RAS, Russia

\*\*Centre for Surface Chemistry and Catalysis, Faculty of Bioscience Engineering, Katholieke, Universiteit Leuven

**P25. [503]. Surface Modification of an Ultrafiltration Membrane to reject Polyvalent Anions**

*I.G. Sandoval-Olvera\**, *P. González-Muñoz\**, *L. Palacio\*\**, *A. Hernández\*\**, *M. Ávila-Rodríguez\**, *P. Prádanos\*\**

\*Departamento de Química, Universidad de Guanajuato, México

\*\*Grupo de Superficies y Materiales Porosos, Dpto. Física Aplicada, Facultad de Ciencias, Universidad de Valladolid, Spain

**P26. [585]. Towards the synthesis of greener membranes: interest of PVA as porous support for application in liquid separations**

*T. Eljaddi\**, *D. Roizard\**, *L. Giordano\**

\*LRGP - Laboratoire Réactions et Génie des Procédés, France

**P27. [590]. Polysulfone /clay composite membranes properties in the presence of raw and modified clays**

*N. Cherifi<sup>a,b</sup>, A. Ouradi<sup>b,c</sup>, F. Ouhib<sup>d</sup>, Q.T. Nguyen<sup>f</sup>, A. Benaboura<sup>b</sup>*

a Centre de Recherche Scientifique et Technique en Analyses Physico-Chimiques, Algeria

b Université des Sciences et Technologie Houari Boumediene, Faculté de Chimie, Laboratoire de Synthèse Macromoléculaire et Thio-OrganiqueMacromoléculaire, Algeria

c Faculté des sciences, Université Saad Dahleb de Blida, Algeria

d Centre for Education and Research on Macromolecules, Chemistry Department, University of Liège, Belgium

f Laboratoire "Polymères, Biopolymères, Surfaces", Université de Rouen UMR CNRS, France

**P28. [600]. Recycling RO membranes for the treatment of high saline solutions by membrane distillation**

*J. Contreras-Martinez<sup>\*</sup>, P. Arribas<sup>\*</sup>, M. Khayet<sup>\*,\*\*</sup>, M.C. Garcia-Payo<sup>\*</sup>*

<sup>\*</sup>Department of Structure of Matter, Thermal Physics and Electronics, Faculty of Physics, University Complutense of Madrid, Spain

<sup>\*\*</sup>Madrid Institute of Advances Studies of Water (IMDEA Water Institute), Spain

**P29. [601]. Hydrophobic/hydrophilic composite nanofibrous membranes for direct contact membrane distillation**

*M. Khayet<sup>\*,\*\*</sup>, M.C. Garcia-Payo<sup>\*</sup>, L. García-Fernández<sup>\*,\*\*\*</sup>, J. Contreras-Martínez<sup>\*</sup>*

<sup>\*</sup>Department of Applied Physics I, Faculty of Physics, University Complutense of Madrid, Spain

<sup>\*\*</sup>Madrid Institute of Advances Studies of Water (IMDEA Water Institute), Spain

<sup>\*\*\*</sup>Laboratoire des Fluides Complexes et leurs Réservoirs-IPRA, Univ Pau & Pays Adour, France

**P30. [617]. Advanced synthesis and characterization of Thin-Film Nanocomposite membranes**

*Van Goethem C.<sup>\*</sup>, Verbeke R.<sup>\*</sup>, Dierendonck C.<sup>\*</sup>, Pfanmüller M.<sup>\*\*</sup>, Koschine T.<sup>\*</sup>, Egger W.<sup>\*\*\*</sup>, Bals S.<sup>\*\*</sup>, Bernstein R.<sup>\*\*\*\*</sup> and Vankelecom I.<sup>\*</sup>*

<sup>\*</sup>Center for Surface Chemistry and Catalysis, KU Leuven, Leuven, Belgium

<sup>\*\*</sup>Electron Microscopy for Materials science, UAntwerp, Belgium

<sup>\*\*\*</sup>Institut für Angewandte Physik und Messtechnik, Universität des Bundeswehr Munich, Germany

<sup>\*\*\*\*</sup>Zuckerberg Institute for Water Research, Ben-Gurion University of the Negev, Israel

**P31. [625]. UV cross-linking of PSU membranes for preparation of solvent resistant supports: Selection of optimal UV curing unit**

*P.-R. Van den Mooter, N. Daems, I.F.J. Vankelecom*

Centre for Surface Chemistry and Catalysis, Faculteit Bio-ingenieurswetenschappen, Katholieke Universiteit Leuven, Belgium

**P32. [632]. Functionalization of zirconia membranes by organo-titanates grafting for organic solvent nanofiltration**

*Keraani Adel<sup>\*,\*\*</sup>, Delaunay David<sup>\*,\*\*\*</sup>, Renouard Thierry<sup>\*</sup>, Rabiller-Baudry Murielle<sup>\*</sup>*

<sup>\*</sup>Univ Rennes, CNRS, ISCR (Institut des Sciences Chimiques de Rennes), France

<sup>\*\*</sup>Université de Tunis El Manar, Faculté des Sciences de Tunis, Laboratoire de Chimie Analytique et d'Electrochimie, Tunisia

<sup>\*\*\*</sup>Université de Caen Basse-Normandie, Unité de Recherche Aliments Bioprocédés Toxicologie Environnements, France

**P33. [637]. Preparation of thermo-responsive PNIPAAm grafted PES membranes via UV-induced polymerization**

*F. F. Ghiggi<sup>\*</sup>, N. S. M. Cardozo<sup>\*\*</sup>, I. C. Tessaro<sup>\*</sup>*

<sup>\*</sup> Laboratory of Membrane Separation Processes, UFRGS, Brazil

<sup>\*\*</sup> Laboratory of Polymer Processing Technology, UFRGS, Brazil

**P34. [642]. Development of SBA-15 intermediate layers onto tubular PSS supports to prepare Pd-membranes for H<sub>2</sub> production**

*D. Sanz, D. Alique, A.J. Vizcaíno, R. Sanz, J.A. Calles*

Department of Chemical and Energy Technology, Rey Juan Carlos University, Spain

**P35. [673]. Multi-scale topography analysis of ultrafiltration membrane surface for performance control**

*M. A. Kammoun<sup>\*,\*\*</sup>, S. Gassara<sup>\*\*</sup>, T. Thami<sup>\*\*</sup>, R. Ben Amar<sup>\*</sup>, A. Deratani<sup>\*\*</sup>*

<sup>\*</sup>Faculté des Sciences de Sfax, Laboratoire des Sciences des Matériaux et Environnement, Tunisia

<sup>\*\*</sup>Institut Européen des Membranes, Univ Montpellier, France

**P36. [678]. Synthesis and characterization of polysulfone nanocomposite membrane embedded with nano alumina for Cu<sup>2+</sup> removal from wastewater**

*M. Younas<sup>1\*</sup>, M. Ayaz\*, A. Muhammad\**

\*Department of Chemical Engineering, University of Engineering and Technology, Peshawar, University Campus, Peshawar, Pakistan

**P37. [695]. Selective gas permeability of poly(4-methyl-1-pentene) modified by gas phase fluorination**

*S. Yu. Markova, A. A. Kozlova, V. V. Teplyakov*

A.V.Topchiev Institute of Petrochemical Synthesis RAS, Russia

**P38. [699]. Fabrication of structured Nafion membranes for protein crystallization**

*M. Polino<sup>\*,\*\*,\*\*</sup>, C. A. M. Portugal\*, I. M. Coelho<sup>\*</sup>, R. Tiggelaar<sup>\*\*\*\*</sup>, H. Le The<sup>\*\*\*\*\*</sup>, J. Eijkel<sup>\*\*\*\*\*</sup>, J. G. Crespo<sup>\*</sup>, M.P. Pina<sup>\*\*</sup>, R. Mallada<sup>\*\*</sup>*

\*LAQV-REQUIMTE/CQFB, Department of Chemistry, FCT/Universidade Nova de Lisboa, Portugal

\*\*Nanoscience Institute of Aragon (INA), Department of Chemical and Environmental Engineering, Universidad de Zaragoza, Spain

\*\*\*Mesoscale Chemical Systems (MCS)

\*\*\*\*NanoLab Cleanroom

\*\*\*\*\*BIOS Lab-on-a-Chip, MESA+ Institute for Nanotechnology, University of Twente, The Netherlands

**P39. [702]. Tailoring of polymer membranes properties with reactive ionic liquids**

*E. Rynkowska<sup>\*,\*\*</sup>, K. Fatyeyeva<sup>\*\*</sup>, J. Kujawa<sup>\*</sup>, A. Wolan<sup>\*</sup>, K. Dzieszkowski<sup>\*</sup>, W. Kujawski<sup>\*</sup>*

\*Nicolaus Copernicus University in Toruń, Faculty of Chemistry, Poland

\*\*Normandie University, UNIROUEN, INSA Rouen, France

**P40. [727]. Polymer additive monitoring during fabrication and ageing of UF hollow fibre membranes**

*S. Gassara<sup>\*</sup>, C. Pochat-Bohatier<sup>\*</sup>, O. Lorain<sup>\*\*</sup>, A. Deratani<sup>\*</sup>*

\*Institut Européen des Membranes, Univ Montpellier, France

\*\*POLYMEM, France

**P41. [768]. Evaluation of different polymers to prepare polymer inclusion membranes: effect on their physical-chemical characteristics and transport efficiency**

*I. Ait Khaldoun<sup>\*,\*\*</sup>, J.A. Méndez<sup>\*\*\*</sup>, L. Mitiche<sup>\*</sup>, A. Sahmoune<sup>\*</sup>, C. Fontàs<sup>\*\*</sup>*

\*Equipe de Recherche Matériaux et Procédés pour l'Environnement, Université Mouloud Mammeri Tizi-Ouzou, Algeria

\*\*Chemistry Department, University of Girona, Spain

\*\*\* Department of Chemical Engineering, University of Girona, Spain

**P42. [793]. Solvent tolerant nanofiltration membrane development using epoxy ring opening reactions**

*M. Bastin<sup>\*</sup>, E. Dom<sup>\*</sup>, K. Bogaert<sup>\*</sup>, S. Rutten<sup>\*</sup>, J. Van den Bosch<sup>\*</sup>, S. Hermans<sup>\*</sup>, G. Koeckelberghs<sup>\*\*</sup>, I. F. J. Vankelecom<sup>\*</sup>*

\*Centre for Surface Chemistry and Catalysis, Department of Molecular and Microbial Systems, KU Leuven, Leuven, Belgium

\*\*Laboratory for Polymer Synthesis, KU Leuven, Belgium

**P43. [811]. Fabrication and application of high flux layer-by-layer nanofiltration membranes in brackish ground water desalination**

*Machawe M Motsa<sup>\*</sup>, Bhekie B. Mamba<sup>\*</sup>*

\*Nanotechnology and Water Sustainability (NanoWS) Research Unit, School of Science, Engineering and Technology, University of South Africa, South Africa

**P44. [832]. Novel synthesis of ZIF-8 membrane synthesised with isolated pre-cursors**

*Q. Mushtaq, E. Lester and B. Tokay*

University of Nottingham, Department of Chemical and Environmental Engineering Faculty of Engineering, The University of Nottingham, UK

**P45. [835]. Chemical treatment and insertion of TiO<sub>2</sub> particles on polymeric PDVF membranes, and their application in heterogeneous catalysis**

*F.V.Arias-Ruiz<sup>\*</sup>, G. Rangel-Porras<sup>\*</sup>, T.A Razo-Lazcano<sup>\*</sup>, M. Avila-Rodriguez<sup>\*</sup>, M.P.Gonzalez-Muñoz<sup>\*</sup>*

\* Universidad de Guanajuato, Department of chemistry, México

**P46. [845]. Selective modification of membrane pore and external surfaces**

*Arijit Sengupta\**, *Xianghong Qian\*\**, *R. Wickramasinghe\**

\*Ralph E. Martin Department of Chemical Engineering, University of Arkansas, USA

\*\*Department of Biomedical Engineering, University of Arkansas, USA

**P47. [868]. Preliminary study on asymmetric Polysulphone (PSF) membranes for ultrafiltration processes application into industrial grade wastewaters purification field**

*A. Sacca\**, *Y. Gutierrez-Piña\*\**, *M. Pilar González-Muñoz\*\**, *R. Pedicini\**, *A. Carbone\**, *F.V. Matera\**, *I. Gatto\**, *L. Espitia-Villanueva\*\**, *S. Gutierrez-Granados\*\**, *L. Hernandez-Perales\*\**, *I. Olvera\*\**, *T.A. Razo-Lazcano\*\**, *M. Avila-Rodriguez\*\**

\*National Research Council of Italy, Institute for Advanced Energy Technologies "Nicola Giordano", Italy

\*\*University of Guanajuato, Mexico

**P48. [910]. Controlling the Hydrophobicity of Electrospun PVDF-HFP Membranes for Membrane Distillation**

*O. Makanjuola\**, *I. Janajreh\*\**, *R. Hashaikeh\**

\*Chemical Engineering Department, Khalifa University of Science and Technology, Masdar Institute, United Arab Emirates

\*\*Mechanical Engineering Department, Khalifa University of Science and Technology, Masdar Institute, United Arab Emirates

**P49. [912]. Preparation and Characterization of membrane with PVDF-diluent mixtures using thermally induced phase separation (TIPS) process**

*Sang Yong Nam\**, †, *Jeong Woo Lee\*\**, and *Jae Young Jang\*\**

\*Department of Materials Engineering and Convergence Technology, Engineering Research Institute, Gyeongsang National University, Korea

\*\*PURE-ENVITECH Co., Ltd, Korea

**P50. [917]. Preparation and characterization of composite cation-exchange membranes for the speciation of metal ions in natural waters**

*V. Salvadó*, *C. Fontàs*, *N. Sánchez-Gil*

Department of Chemistry, University of Girona, Spain

**P51. [925]. How surface functionalization can influence membrane performance?**

*S. Al-Gharabli\**, *J. Kujawa\*\**, *W. Kujawski\*\**, *E. M. Hamad\*\*\**

\*Pharmaceutical and Chemical Engineering Department, German Jordanian University, Jordan

\*\*Faculty of Chemistry, Nicolaus Copernicus University in Toruń, Poland

\*\*\*Biomedical Engineering Department, German Jordanian University, Jordan

## Membrane fouling and ageing

**P52. [40]. The rejection and the fouling behaviour of naphthenic acids in oil sands process-affected water forward osmosis filtration**

*S Zhu\**, *L Xiang\*\**, *M Li\**, *H Zeng\*\**, *M Gamal El-Din\**

\*Department of Civil and Environmental Engineering, University of Alberta, Canada

\*\*Department of Chemical and Material Engineering, University of Alberta, Canada

**P53. [69]. Impact of operation conditions and foulant adsorption on the nanomechanical properties of UF hollow fiber membranes**

*L. Gutierrez\**, *A. Keucken\*\**, *N. Zaouri\*\*\**, *J.P. Croue\**

\*Curtin Water Quality Research Centre, Department of Chemistry, Curtin University, Australia

\*\*Vatten & Miljö i Väst AB (VIVAB), Sweden

\*Water Desalination and Reuse Center, King Abdullah University of Science and Technology, Kingdom of Saudi Arabia



**P54. [80]. Quantification of Fouling Formation in Membrane Distillation by means of Optical Coherence Tomography**

*A. Bauer\*,\*\*, V. Hilgenfeldt\*, F. Saravia\*, M. Wagner\*\*\*, Harald Horn\*,\*\**

\*Karlsruhe Institute of Technology (KIT), Engler-Bunte-Institut, Chair of Water Chemistry and Water Technology, Germany

\*\* DVGW-Research Center at the Engler-Bunte-Institut, Chair of Water Chemistry and Water Technology, Germany

\*\*\* Karlsruhe Institute of Technology (KIT), Institute of Functional Interfaces, Germany

**P55. [86]. MABMEM – a material toolbox for the modification of ultrafiltration membranes**

*Oliver Gronwald\*, Martin Weber\*, Lara Gruenig\*\*, Ulrich A. Handge\*\*, Martin*

*Heijnen\*\*\*, Stefan Panglisch\*\*\*\*, Arman Kouchaki Shalmani\*\*\*\*\**

\*BASF SE, Germany

\*\*Helmholz-Zentrum Geesthacht (HZG), Germany

\*\*\*Inge watertechnologies, Germany

\*\*\*\* University of Duisburg-Essen, Germany

**P56. [89]. Membrane cleaning and its impact on plant operations and economics in food and biotech industry**

*Frank Lipnizki\*, Ann-Sofi Jönsson\**

\*Department of Chemical Engineering, Lund University, Sweden

**P57. [102]. An investigation of the effect of 3-D printed patterned surfaces on membrane fouling**

*Saeed Mazinani, John Chew, Davide Mattia*

Centre for Advanced Separations Engineering and Department of Chemical Engineering, University of Bath, United Kingdom

**P58. [160]. 3DEEM fluorescence spectroscopy for on-line membrane bioreactor fouling control**

*G. Lesage\*, C. Jacquin\*, M. Heran\**

\*IEM (Institut Européen des Membranes), Université de Montpellier, France

**P59. [180]. Using electrokinetic leakage to probe internal fouling of ultrafiltration membranes**

*A. Szymczyk\*, V. Drevet\*, S. Liu\*\*, E. Clavijo Rivera\*\*, L. Villafañá López\*\*, M. Rabiller-Baudry\*, E. Couallier\*\*, M. Frappart\*\**

\*Univ Rennes, CNRS, France

\*\*CNRS, Université de Nantes, Laboratoire GEPEA, France

**P60. [182]. Fouling of ion-exchange membranes during acid whey electrodialysis**

*S Talebi\*, G Chen\*, S Kentish\*, A Freckleton\*\**

\*ARC Dairy Innovation Hub, Department of Chemical Engineering, University of Melbourne, Australia

\*\*Bega Cheese Pty. Ltd., Australia

**P61. [186]. Enhanced ultrafiltration performance by a pressure surge**

*F. Wicaksana, M. Aslam, A. Wong, M. Farid*

Department of Chemical and Materials Engineering, the University of Auckland, New Zealand

**P62. [197]. VicInAqua project: development of self-cleaning and antibiofouling membranes for wastewater treatment**

*F. Galiano\*, R. Mancuso\*\*, B. Armentano\*\*\*, M. Carraro\*\*\*\*, M. Bonchio\*\*\*\*, E. Gukelberger\*\*\*\*\*, J. Hoinkis\*\*\*\*\*, A. Criscuoli\*, A. R. Cappello\*\*\*, B. Gabriele\*\*, L. Giorno\*, A. Figoli\**

\*Institute on Membrane Technology (ITM-CNR), Italy

\*\*Dep. of Chemistry and Chemical Technologies, Univ. of Calabria, Italy

\*\*\*Dep. of Pharmacy and Health and Nutritional Sciences, Univ. of Calabria, Italy

\*\*\*\*Department of Chemical Sciences University of Padova, Italy

\*\*\*\*\*University of Applied Sciences Karlsruhe (HSKA), Germany

**P63. [224]. Alternative cleaning strategies for membranes in biorefineries**

*G. Rudolph, A.-S. Jönsson and F. Lipnizki*

Department of Chemical Engineering, Lund University Lund, Sweden

**P64. [270]. Study of interactions between microorganisms and material at the surface of a membrane with antibiofouling properties**

*S. BKHAÏT<sup>1</sup>\*, C. COETSIER<sup>1</sup>, J-F. LAHITTE<sup>1</sup>, C. CAUSSERAND<sup>1</sup>*

1 Laboratoire de Génie Chimique, Université de Toulouse, CNRS, INPT, UPS, France

**P65. [275]. Direct observation of oil fouling on osmotically-driven membrane processes: Effect of surfactant concentration and pH**

*Pattarasiri Fagkaew, Seoktae Kang*

Department of Civil and Environmental Engineering, Korea Advanced Institute of Science and Technology, Republic of Korea

**P66. [290]. How to shorten demonstration of harmlessness of new formulated disinfectants toward membrane material? Application to Reverse Osmosis and Ultrafiltration membranes**

*Le Petit Lucie\*, \*\*, Rabiller-Baudry Murielle\*, Touain Romain\*, Chataigner Raphaël\*, Thomas Patrick\*, Olivier Connan\*\*, Régis Périon\*\**

\*Univ Rennes, CNRS, ISCR (Institut des Sciences Chimiques de Rennes), France

\*\*Hypred, France

**P67. [291]. How algal caused ultrafiltration fouling depends on type and growth phase of algae**

*S. Laksono\*, A.K. Shalmani\*, J. Jansen\*, C. Staaks\*\*, S. Panglisch\**

\*Chair of Mechanical and Process Engineering / Water Technology, University Duisburg-Essen, Germany

\*\*Inge GmbH, Germany

**P68. [304]. Investigating the Filterability of Oil Containing Waste Waters Using Polymeric Membranes**

*H. Idrees, M. Keller, S. Panglisch*

\*Department of Mechanical Process Engineering / Water Technology, Duisburg-Essen University, Germany

**P69. [310]. On the evolution of membrane cleanability with ageing at both limiting and critical fluxes in the case of skim milk ultrafiltration**

*Rabiller-Baudry Murielle\*, Thomas Patrick\*, Nguyen Thi Khan Huyen\*, Drevet Vincent\*, Girard Jean\*, Loulergue Patrick\**

\*Univ Rennes, CNRS, ISCR (Institut des Sciences Chimiques de Rennes), France

**P70. [355]. A study on the relationship between membrane area requirements and specific boundary flux parameters**

*M. Stoller\*, J.M. Ochando-Pulido\*\**

\*Dept. of Chemical Materials Environmental Engineering, Sapienza University of Rome, Rome, Italy

\*\*Dept. of Chemical Engineering, University of Granada, Spain

**P71. [396]. Evolution of AMX-Sb anion-exchange membrane properties in initial stages of fouling by red wine**

*V. Sarapulova\*, E. Nevakshenova\*, D. Aleshkina, N. Pismenskaya\*, M. Bdiri\*\**

\*Kuban State University, Russia

\*\*Université Paris-Est, Institut de Chimie et des Matériaux Paris-Est, France

**P72. [407]. Linking ultrafiltration membrane materials modification to filtration performances after chlorine exposure**

*J. Chokki\*, \*\*, G. Darracq\*\*, B.Teychené\*, P.Pölt\*\*\*, S. Wurtzer\*\*, J. Baron\*\*, H. Gallard\*, M. Joyeux\*\**

\*Institut de Chimie des Milieux et Matériaux de Poitiers, Université de Poitiers, Ecole Nationale Supérieure d'Ingénieurs de Poitiers, France

\*\*Eau de Paris, Direction de la Recherche & Développement et de la Qualité de l'Eau, France

\*\*\*Institute of Electron Microscopy and Nanoanalysis, NAWI Graz, Graz University of Technology, Austria

**P73. [449]. Prevent membrane fouling by selecting appropriate dense membranes**

*M. Michaud, C. Charcosset, D. Mangin, E. Chabanon*

Univ Lyon, Université Claude Bernard Lyon 1, France

**P74. [488]. Fouling minimization on a reverse osmosis membrane based on boundary conditions statistical optimization**

*J.M. Ochando-Pulido\*, M. Stoller\*\*, A. Martínez-Férez\**

\*Department of Chemical Engineering, University of Granada, Spain

\*\*University of Rome La Sapienza, Dept. Chemical Materials Environmental Engineering, Italy

**P75. [567]. Elaboration of PVDF hollow fiber membranes for an improved fouling control**

*T. Vroman\**, *F. Beaume\*\**, *J.C. Remigy\**

\*Laboratoire de Génie Chimique, Université de Toulouse, CNRS, INPT, UPS, France

\*\*Arkema, France

**P76. [570]. Effect of surface roughness on membrane fouling for reverse osmosis applications**

*Zhiwei Jiang\**, *Santanu Karan*, *Andrew G. Livingston*

\*Barrer Centre, Department of Chemical Engineering, Imperial College London, United Kingdom

**P77. [579]. Optimizing surface modifying parameters of *in situ* redox-initiating graft polymerization for nanofiltration fouling mitigation**

*Justin Chun-Te Lin\**, *Yung-Lun Chu*

\*Department of Environmental Engineering and Science, Feng Chia University, Taiwan

**P78. [607]. Study of selected aspect of membrane fouling using photoacoustic spectroscopy**

*A. Miśkiewicz\**, *S. Pasieczna-Patkowska\*\**, *G. Zakrzewska-Koźtuniewicz\**

\*Institute of Nuclear Chemistry and Technology, Poland

\*\*University of Maria Curie-Skłodowska, Poland

**P79. [626]. Effect of chemical cleaning agents on ageing of commercial NF and RO membranes**

*P.R. Van den Mooter*, *I.F.J. Vankelecom*

a Centre for Surface Chemistry and Catalysis, Faculteit Bio-ingenieurswetenschappen, Katholieke Universiteit Leuven, Belgium

**P80. [657]. Usage of ppm h concept for membrane aging. Polyamide tolerance to free chlorine**

*R. García-Pacheco<sup>1</sup>*, *A. Ortiz de Lejarazu<sup>1</sup>*, *J. Landaburu-Aguirre<sup>1</sup>*, *S. Molina<sup>1</sup>*, *T. Ransome<sup>2</sup>*, *E. García-Calvo<sup>1,3</sup>*

<sup>1</sup> IMDEA Water Institute, Spain

<sup>2</sup> Southern Seawater Joint Venture, Australia

<sup>3</sup> Chemical Engineering Department. University of Alcalá, Spain

**P81. [693]. Application of DCMD for textile wastewater treatment and fouling study**

*M. Laqbaqbi<sup>1,2,4\*</sup>*, *J. El Kharraz<sup>4</sup>*, *M. Khayet<sup>1,3</sup>*, *K. Rahaoui<sup>5</sup>*, *M.C. García-Payo<sup>1</sup>*, *M. Chaouch<sup>2</sup>*

<sup>1</sup>Department of Applied Physics I, Faculty of Physics, University Complutense of Madrid, Madrid, Spain

<sup>2</sup>Laboratory of materials Engineering and Environment, Department of Chemistry, Faculty of Sciences Dhar El Mehraz, Morocco

<sup>3</sup>Madrid Institute for Advanced Studies of Water (IMDEA Water Institute), Alcalá de Henares, Madrid Spain

<sup>4</sup>MEDRC Water Research P.O., Sultanate of Oman

<sup>5</sup>Energy Conservation and Renewable Energy, School of Engineering, RMIT University, Bundoora East Campus, Australia

**P82. [705]. Acidification, de-carbonization and in-situ free-chlorine generation in seawater; a potential pretreatment for biofouling control in SWRO membranes**

*N. Harleva*, *O. Lahav*, *M. Herzberga*

a Jacob Blaustein Institutes for Desert Research, Zuckerberg Institute for Water Research, Ben-Gurion University of the Negev, Israel

b Faculty of Civil and Environmental Engineering, Technion, Israel

**P83. [711]. Preparation and Characterization of Antifouling Nanofiltration Membrane from a Responsive Block Copolymer**

*N. Çağlar<sup>1</sup>*, *Metin Uz<sup>2</sup>*, *Surya K. Mallaparagada<sup>2</sup>*, *S.A. Altinkaya<sup>1</sup>*

<sup>1</sup>Izmir Institute of Technology, Chemical Engineering Department, Turkey

<sup>2</sup>Iowa State University, Chemical and Biological Engineering Department, USA

**P84. [716]. One step surface modification of membranes with quaternary ammonium cations for improving antibacterial activity**

*A. Cihanođlu, S.A. Altinkaya*

İzmir Institute of Technology, Chemical Engineering Department, Yurkey

**P85. [717]. The Influence of Solvent Type on the Fouling Behaviour of PSf/SPES Blend Ultrafiltration Membranes During Filtration of Oil Water Emulsion**

*A. Cihanođlu, S.A. Altinkaya*

İzmir Institute of Technology, Chemical Engineering Department, Turkey

**P86. [726]. Colloidal deposition on polymer-brush-coated NF membranes**

*Naama Segev Mark<sup>1</sup>, Ningyuan Chen<sup>1</sup>, Anh Vu<sup>2</sup>, Xianghong Qian<sup>3</sup>, Ranil Wickramasinghe<sup>2</sup> and Guy Z. Ramon<sup>1</sup>*

<sup>1</sup>Department of Civil & Environmental Engineering, Technion - Israel Institute of Technology, Haifa, Israel

<sup>2</sup>Ralph E Martin Department of Chemical Engineering, University of Arkansas, United States

<sup>3</sup>Department of Biomedical Engineering, University of Arkansas, United States

**P87. [742]. Nanoscale detection of membrane fouling using combined sensorial surface-sensitive techniques**

*I. Rafaniello\*, T. Schäfer\*#*

\*POLYMAT, University of the Basque Country (UPV/EHU), Spain

#IKERBASQUE, Basque Foundation for Science, Spain

**P88. [821]. Monitoring and Prediction of Reverse Osmosis Membranes Biofouling: Surface Interactions and Viscoelastic Properties**

*M. Herzberga, D.L. Ferrando-Chaveza*

a The Zuckerberg Institute for Water Research, The Jacob Blaustein Institutes for Desert Research, Ben-Gurion University of the Negev - Sede Boqer Campus, Israel

**P89. [843]. Understanding of casein micelles concentrated layers properties during cross flow ultrafiltration by *in-situ* small-angle X-ray scattering (SAXS)**

*F. Doudiès\*, \*\*\*, M. Loginov\*, F. Garnier-Lambrouin\*, N. Leconte\*, L. Sharpnack\*\*, N. Hengl\*\*\*, F. Pignon\*\*\*, G. Gésan-Guiziou\**

\*INRA, UMR 1253 Science et Technologie du Lait et de l'oeuf, France

\*\*European Synchrotron Radiation Facility, France

\*\*\*Laboratoire Rhéologie et Procédés, Université Grenoble Alpes, CNRS, France

**P90. [861]. Study of pervaporation membranes on model media and fermentation broth, towards an extractive fermentation process for continuous production of bio-butanol**

*Marwen Moussa<sup>1</sup>\*, Pierre Berthier<sup>1</sup>, Isabelle Meynial-Salles<sup>2</sup>, Violaine Athès-Dutour<sup>1</sup>*

<sup>1</sup> UMR GMPA : AgroParisTech, INRA, Université Paris-Saclay, France

<sup>2</sup> UMR LISBP, INRA-INSA, CNRS-INSA, France

**P91. [875]. Validating the Performance of a Novel Bench-Scale Ultrafiltration System**

*C. Tang\*, A. Lok\*, P.R. Bérubé\*\*, R.C. Andrews\**

\* Department of Civil Engineering, University of Toronto

\*\* Department of Civil Engineering, University of British Columbia

**P92. [884]. In-situ microrheology of a foulant layer**

*Jose A. Epstein, Naama Segev Mark, Guy Z. Ramon\**

Department of Civil & Environmental Engineering, Technion – Israel Institute of Technology, Israel

**P93. [886]. Influence of wastewater type and bioreactor conditions on SMP production and on the subsequent ultrafiltration**

*Eva Ferrer-Polonio\*, Amparo Bes-Piá, Beatriz Cuartas-Urbe, José-Antonio Mendoza-Roca*

\* Universitat Politècnica de València, ISIRYM, Spain

## Nanofiltration and Reverse Osmosis

### P94. [18]. On the universal solvent occupancy of the excess free volume in glassy polymers

*K. Tempelman\**, *W. Ogieglo\*\**, *N.E. Benes\**

\*Films-in-Fluid group, University of Twente, MESA+ Institute for Nanotechnology, Department of Science and Technology, The Netherlands

\*\*Advanced Membranes and Porous Materials Center, King Abdullah University of Science and Technology (KAUST), Saudi Arabia

### P95. [90]. Experimental and theoretical study of nanofiltration of weak electrolytes: $\text{HSO}_4^- / \text{SO}_4^{2-}$ system

*J. Lopez\**, *M. Reig\**, *X. Vecino\**, *C. Valderrama\**, *O. Gibert\*, \*\**, *A. Yaroshchuk\*, \*\**, *J.L. Cortina\*, \*\**

\*Chemical Engineering Department (UPC-BarcelonaTECH) and Barcelona Research Center for Multiscale Science and Engineering, Spain

\*\*Water Technology Center CETaqua, Spain

\*\*\*Catalan Institute for Research and Advanced Studies (ICREA), Spain

### P96. [103]. Evaluation of polymeric nanofiltration membranes on metal valorisation from acidic mine waters

*J. Lopez\**, *M. Reig\**, *X. Vecino\**, *C. Valderrama\**, *O. Gibert\*, \*\**, *E. Torres\*\*\**, *C. Ayora\*\*\**, *J.L. Cortina\*, \*\**

\*Chemical Engineering Department (UPC-BarcelonaTECH) and Barcelona Research Center for Multiscale Science and Engineering, Spain

\*\*Water Technology Center (CETAqua), Spain

\*\*\*Institute of Environmental Assessment and Water Research IDAEA, Consejo Superior de Investigaciones Científicas (CSIC) Barcelona, Spain

### P97. [130]. Developing a novel amine functionalized boron nitride $\text{BN}(\text{NH}_2)$ -polypiperazine amide thin film composite nanofiltration membrane with enhanced flux and fouling resistance

*Sara Abdikhebari\**, *Weiwei Lei\*\**, *Ludovic Dumez\*\**, *Nicholas Milne\**, *Kanagaratnam Baskaran\**

\*School of Engineering, Faculty of Science, Engineering and Built Environment, Deakin University, Australia

\*\*Institute for Frontier Materials, Deakin University, Australia

### P98. [140]. Concentration of anthocyanins from grape marc extract using pressurized liquids and nanofiltration

*D. T. V. Pereira \**, *G. V. Marson \**, *M. D. Hubinger \**, *J. Martínez \**

\*Department of Food Engineering, Faculty of Food Engineering, State University of Campinas – São Paulo, Brazil

### P99. [143]. Maleic anhydride based copolymers grafted to $\gamma$ -alumina for high-performance organic solvent nanofiltration membranes

*M. Amirilargani\**, *R. B. Merlet\*\**, *A. Nijmeijer\*\**, *L. Winnubst\*\**, *L. C. P. M. de Smet\**, *E. J. R. Sudhölter\**

\*Department of Chemical Engineering, Delft University of Technology, The Netherlands

\*\*MESA+ Institute for Nanotechnology, University of Twente, The Netherlands

### P100. [152]. Nanofiltration for pre-treatment of acid mine drainage

*K. Zedda\**, *Y.W. Siew\*\**, *S. Velizarov\*\**

\*LANXEES – IAB Ionenaustauscher GmbH Bitterfeld, Germany

\*\*Universidade NOVA de Lisboa, Portugal

### P101. [167]. Use of renewable green solvents in membrane preparation

*M. A. Rasool\** and *Ivo F. J. Vankelecom\**

\*Centre for Surface Chemistry and Catalysis, Faculty of Bioengineering Sciences, KU Leuven, Belgium

### P102. [190]. Impact of the organic solvent on the nanofiltration transfer mechanism of hydro-organic mixtures: an experimental study

*Nguyen Thi Vi Na \**, *Paugam Lydie \**, *Rabiller-Baudry Murielle \**

\*Univ Rennes, CNRS, ISCR (Institut des Sciences Chimiques de Rennes), France

**P103. [203]. Ion transport through anodic alumina membranes**

*M.V. Berekchiiian<sup>1</sup>, G.N. Sizov<sup>1</sup>, D.I. Petukhov<sup>1,2</sup>*

1 Department of Materials Science, Lomonosov Moscow State University, Russia

2 Department of Chemistry, Lomonosov Moscow State University, Russia

**P104. [288]. Synthesis and characterization of novel functionalized graphene oxide/polyethersulfone nanocomposite membranes for water purification**

*J M Luque-Alled<sup>1</sup>, M Alberto<sup>1</sup>, S Leaper<sup>1</sup>, A Vijayaraghavan<sup>2</sup>, P Gorgojo<sup>1</sup>*

1 School of Chemical Engineering and Analytical Science, The University of Manchester, UK

2 School of Materials, The University of Manchester, UK

**P105. [295]. Concentration and selective separation of carboxylic acids from fermented effluents by employing membrane processes**

*J. M. B. Domingos, G. A. Martinez, E. Morselli, S. Puccio, S. Notarfrancesco, S. Bandini, L. Bertin*

Department of Civil, Chemical, Environmental and Materials Engineering (DICAM), University of Bologna, Italy

**P106. [297]. On the transfer mechanisms in organic solvent nanofiltration of a set of linear solutes of close molecular weight but different physico-chemical properties**

*Lejeune Antoine\*, Renouard Thierry\*, Rabiller-Baudry Murielle\**

\*Univ Rennes, CNRS, ISCR (Institut des Sciences Chimiques de Rennes), France

**P107. [317]. Lignin derived fractions: developing performance based chemicals and materials using membrane separation technology**

*Pieter Vandezande\*, Kelly Servaes, Richard Vendamme, Karolien Vanbroekhoven, Anita Buekenhoudt, Ludo Diels*

Flemish Institute for Technological Research – VITO, Separation & Conversion Technology, Belgium

**P108. [318]. The Effects of Membrane Compaction on Free Volume and Thickness of Reverse Osmosis (RO) Membrane**

*Sung-Jo Kim\*, Doseon Han\*, Tae-un Jeong\*, SangKwang Park\*\*, Moonhyun Hwang\*,\*\*\**

\*Research Institute for Environmental Technology and Sustainable Development, Korea University, Republic of Korea

\*\*LSTS,94, Republic of Korea

\*\*\*Headquarter of Research Planning, Korea University, Republic of Korea

**P109. [336]. Elemental composition and free-volume depth-profiling of PA TFC membranes with PALS and ERD**

*R. Verbeke\*, T. Koschine\*, M. Dickmann\*\*, W. Egger\*\*\*, A. Bergmaier\*\*\*, I.F.J. Vankelecom\**

\*Centre for Surface Chemistry and Catalysis, Faculty of Bioengineering Sciences, KU Leuven, Belgium

\*\*Heinz Maier-Leibnitz Zentrum (MLZ) and Physik Department E21, Technische Universität München, Germany

\*\*\*Institut für Angewandte Physik und Messtechnik, Universität der Bundeswehr München, Germany

**P110. [369]. Separation of organic compounds by reverse osmosis**

*K. Jastřembská, H. Jiráňková, P. Mikulášek*

Institute of Environmental and Chemical Engineering, Faculty of Chemical Technology, University of Pardubice, Czech Republic

**P111. [412]. Influence of physical-chemical parameters of dyes in the retention and flux in nanofiltration process**

*A. Hidalgo\*, M. Moret\*, G. León\*\*, M. Gómez\*, M.D. Murcia\**

\*Departamento de Ingeniería Química, Facultad de Química, Campus de Espinardo, Universidad de Murcia, Spain

\*\*Departamento de Ingeniería Química y Ambiental, Universidad Politécnica de Cartagena, Spain

**P112. [453]. Quantification of convective and diffusive proportions of solvent fluxes through polymeric OSN membranes**

*Y. Thiermeyer<sup>a,b</sup>, S. Blumenschein<sup>a</sup>, O. Starck<sup>c</sup>, A. Böcking<sup>c</sup>, M. Wessling<sup>c,d</sup>*

a Merck KGaA, Darmstadt, Germany

b TU Dortmund University, Department of Biochemical and Chemical Engineering, Laboratory of Fluid Separations, Germany

c RWTH Aachen AVT.CVT, Germany

d DWI – Leibniz Institute for Interactive Materials, Germany

**P113. [474]. Cellulose-based nanofiltration membranes by regeneration of cellulose acetate via alkaline hydrolysis**  
*Zeynep İmir\**, *P. Zeynep Çulfaz Emecen\**

\*Middle East Technical University, Faculty of Engineering, Chemical Engineering Department, TURKEY

**P114. [531]. Tuning performance of Polybenzimidazole Organic-Solvent-Nanofiltration Membranes via Post-modification approach**

*Marchetti Patrizia, Piers R. J. Gaffney, Daeok Kim, Andrew G. Livingston*

Department of Chemical Engineering, Imperial College London, United Kingdom

**P115. [538]. Exploring the effect of charged NF membranes on Calcium phosphate scaling**

*Michaela Kaganovich\**, *Roy Bernstein\**

\*Department of Desalination and Water Treatment, Zuckerberg Institute for Water Research, Jacob Blaustein Institutes for Desert Research, Ben-Gurion University of the Negev, Israel

**P116. [611]. Crosslinking of PVDF nanofiltration membranes for application in extreme conditions**

*C. Van Goethem\**, *M. Mertens\**, *I.F.J. Vankelecom\**

\*Centre for Surface Chemistry and Catalysis, KU Leuven, Belgium

**P117. [612]. Assesment of nanofiltration potenciality to recover lactic acid from whey**

*A. C. A. Adame\**, *P. C. F. Alves\**, *B. C. Ricci\**, *M. C. S. Amaral\*\**, *C. B. Alvim\*\**, *R. S. Jacob\**

\*Pontifical Catholic University of Minas Gerais, Brazil

\*Federal University of Minas Gerais, Brazil

**P118. [613]. Crosslinked PVDF membranes for Solvent Resistant Nanofiltration/Ultrafiltration**

*M. Mertens\**, *C. Van Goethem\**, *I.F.J. Vankelecom\**

\*Centre for Surface Chemistry and Catalysis, KU Leuven, Belgium

**P119. [629]. Preliminary study on chromium removal in contaminated groundwater by nanofiltration**

*Fuoco Ilaria\**, *Apollaro Carmine\**, *Brozzo Giampiero\*\**, *Galiano Francesco\*\*\**, *De Rosa Rosanna\**, *Gabriele Bartolo\*\*\*\**, *Criscuoli Alessandra\*\*\**, *Figoli Alberto\*\*\**

\*Department of Biology, Ecology and Earth Sciences (DIBEST), University of Calabria, Italy

\*\*ACAM Acque S.p.A., La Spezia, Italy

\*\*\*Research Institute on Membrane Technology (ITM-CNR), c/o University of Calabria, Italy

\*\*\*\*LISOC Group, Department of Chemistry and Chemical Tecnologie University of Calabria, Italy

**P120. [638]. Pilot-scale chlorination of brackish water reverse osmosis TFC membranes and their thorough physicochemical characterization**

*R. Verbeke\**, *V. Gomez\*\**, *W. Egger\*\*\**, *I.F.J. Vankelecom\**

\*Centre for Surface Chemistry and Catalysis, Faculty of Bioengineering Sciences, KU Leuven, Belgium

\*\*Dow Water and Process Solutions, Tarragona, Spain

\*\*\*Institut für Angewandte Physik und Messtechnik, Universität der Bundeswehr München, Germany

**P121. [668]. Using High Salinity Pulse Backwashing to remove adhered bacteria from Nanofiltration and Reverse Osmosis Membranes**

*A. Allen\**, *A. Semiao\**

\*School of Engineering, University of Edinburgh, UK

**P122. [672]. Olive pomace treatment by NF and RO membranes**

*M.A. Nunes\**, *S. Pawlowski\*\**, *M.B. Oliveira\**, *S. Velizarov\*\**

\*LAQV/Requimte, Faculty of Sciences and Technology, New University of Lisbon, Portugal

\*\*LAQV/Requimte, Faculty of Pharmacy, University of Porto, Portugal

**P123. [675]. Thin-film composite poly(ionic) gel membranes for nanofiltration in organic solvents**

*Salem AL-kharabsheh\**, *Roy Bernstein\**

\*Department of Desalination and Water Treatment, Zuckerberg Institute for Water Research, Jacob Blaustein Institutes for Desert Research, Ben-Gurion University of the Negev, Israel

**P124. [684]. Fate of micropollutants in combined magnetic ion exchange resin- nanofiltration (MIEX-NF) membrane process under fouling conditions**

*P. Samanta\**, *A. Imbrogno\**, *A. I. Schäfer\**

\*Membrane Technology Department, Institute of Functional Interfaces (IFG), Karlsruhe Institute of Technology (KIT), Germany

**P125. [698]. Recovering dewaxing solvent from lubrication oil by Organic Solvent Nanofiltration (OSN)**

*P van der Gryp*, *BA Dorrington*, *A Spratt*, *AJ Burger*

Department of Process Engineering, University of Stellenbosch, South Africa

**P126. [710]. Purification and concentration of cynaropicrin derived by ethanolic ultrasound cynara cardunculus extracts: influence of operating parameters**

*T. Bras*<sup>1,2</sup>, *L.A. Neves*<sup>1</sup>, *M. F. Duarte*<sup>2,3</sup>, *J. P. G. Crespo*<sup>1</sup>

1 LAQV/ REQUIMTE, FCT, Universidade Nova de Lisboa, Portugal

2 Centro de Biotecnologia Agrícola e Agro-Alimentar do Alentejo (CEBAL)/ Instituto Politécnico de Beja (IPBeja), Portugal

3 ICAAM - Instituto de Ciências Agrárias e Ambientais Mediterrânicas, Universidade de Évora, Portugal

**P127. [715]. Hydration effects in the nanofiltration of concentrated solutions**

*Victor Aguirre*<sup>\*1,2</sup>, *Anja E. M. Janssen*<sup>2</sup>, *A. Van der Padt*<sup>2,3</sup>, and *R. M. Boom*<sup>2</sup>

1 Institute for Sustainable Process Technology, The Netherlands

2 Wageningen University, Food Process Engineering Group, The Netherlands

3 FrieslandCampina, The Netherlands

**P128. [764]. Characterization of new and aged reverse osmosis membranes**

*C. Antonelli*, *J. Bouillonnet*, *M. A. Kammoun*, *S. Gassara*, *A. Deratani*

Institut Européen des Membranes, Univ Montpellier, France

**P129. [785]. Integration of nanofiltration in the fermentative production of lactic acid from cheese whey: selection of membrane for the separation of lactic acid and lactose**

*P. Díaz Guridi\**, *P. González Barrero\**, *S. Luguera González\**, *J. A. Otero Hermida\** and *R. Ibáñez Mendizábal\**

\*Chemical and Biomolecular Engineering Department, Universidad de Cantabria, Spain

**P130. [802]. Removal of heavy metal ions from aqueous solutions by nanofiltration**

*P. Mikulášek*, *J. Cuhorka*

Institute of Environmental and Chemical Engineering, Faculty of Chemical Technology, University of Pardubice, Czech Republic

**P131. [805]. Temperature measurement of the reaction zone during interfacial polymerization**

*Ben Ukrainsky* & *Guy Z. Ramon*

Department of Civil and Environmental Engineering, Technion – Israel Institute of Technology

**P132. [898]. Recovery of phenolic compounds by nanofiltration membranes. Effect of conductivity and organic matter**

*Karem Cazares Carrión\**, *Silvia Álvarez-Blanco\*\**, *Carlos Carbonell Alcaina\*\**, *M. Amparo Bes-Piá\*\**

\*Department of Life Sciences, Universidad Estatal Amazónica, Ecuador

\*\*Department of Chemical and Nuclear Engineering, Universitat Politècnica de València, Spain

**P133. [921]. Effective interfacially polymerized polyester solvent resistant nanofiltration membrane from bioderived materials**

*Mohamed H. Abdellah*<sup>b,†</sup>, *Liliana Pérez-Manríquez*<sup>a,†</sup>, *Tiara Puspasari*<sup>a</sup>, *Colin A. Scholes*<sup>b</sup>, *Sandra E. Kentish*<sup>b</sup>, *Klaus-Viktor Peinemann*<sup>a\*</sup>

[a] Advanced Membranes and Porous Materials Centre, King Abdullah University of Science and Technology (KAUST), Saudi Arabia

[b] Department of Chemical Engineering, The University of Melbourne, Australia

† both authors contributed equally



**P134. [924]. Improving the performance of polyamide Nano-filtration membrane in acidic media by incorporation of modified multi-walled carbon nanotubes**

*Sina Gholami<sup>1,2</sup>, Julio Lopez<sup>1</sup>, Vahid Vatanpour<sup>3</sup>, A.R.Rezvai<sup>2</sup>, Jose Luis Cortina<sup>1</sup>,*

\*1 Chemical Engineering Department, UPC-Barcelona TECH; Barcelona Research Center for Multiscale Science and Engineering, Spain

2 Department of Chemistry, Faculty of Science, University of Sistan and Baluchestan, Iran

3 Faculty of Chemistry, Kharazmi University, Iran

**P135. [928]. Influence of osmotic pressure and fouling on permeate flux during the NF of wastewater from table olive production**

*Carlos Carbonell-Alcaina\*, Silvia Álvarez-Blanco\*\*, M<sup>a</sup> Amparo Bes-Piá\*,\*\*, José Antonio Mendoza-Roca\*,\*\*, Laura Pastor-Alcañiz\*\*\**

\*Research Institute for Industrial, Radiophysical and Environmental Safety (ISIRYM), Universitat Politècnica de València, Spain

\*\*Department of Chemical and Nuclear Engineering, Universitat Politècnica de València, Spain

\*\*\*Depuración de Aguas del Mediterráneo (DAM), Parque Tecnológico, Paterna (Valencia), Spain

**P136. [929]. Utilization of nanofiltration to recover the phenolic compounds present in olive oil production wastes**

*Álvaro Jimeno-Jiménez\*\*, Carlos Carbonell-Alcaina\*, María-Cinta Vincent-Vela\*,\*\*, Silvia Álvarez-Blanco\*,\*\**

\*Research Institute for Industrial, Radiophysical and Environmental Safety (ISIRYM), Universitat Politècnica de València, Spain

\*\*Department of Chemical and Nuclear Engineering, Universitat Politècnica de València, Spain

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**P137. [100]. A novel method for characterization of ion-exchange membranes through transient membrane potential after concentration step**

*M. Fernández de Labastida\*, A. Yaroshchuk\*\**

\*Polytechnic University of Catalonia – BarcelonaTech, Spain

\*\*Polytechnic University of Catalonia - BarcelonaTech and ICREA, Spain

**P138. [158]. Electrochemical membrane reactor for lignin depolymerization: modelling and optimization**

*Bander Bawareth\*,\*\*, Davide Di Marino\*\*, T. Alexander Nijhuis\*, Matthias Wessling\*\**

\* SABIC-Glycols, Oxygenates and Functional Chemicals, 11551 Riyadh, Saudi Arabia.

\*\* AVT.CVT, Forckenbeckstr. 51, 52074 Aachen, Germany.

**P139. [164]. Anion-Exchange Membrane blended with a functionalized polyelectrolyte to enhance phosphate transport over sulfate**

*L. Paltrinieri†§, L. Poltorak†, L. Chu†, T. Puts||, W. van Baak||, E. J. R. Sudhölter†, L. C. P. M. de Smet†§‡*

†Delft University of Technology, Department of Chemical Engineering, Van der Maasweg 9, 2629 HZ Delft, The Netherlands

§Wetsus – European centre of excellence for sustainable water technology, The Netherlands

‡Wageningen University & Research, Laboratory of Organic Chemistry, The Netherlands

||FUJIFILM Manufacturing Europe B.V., The Netherlands

**P140. [171]. Temperature effects on elastic and diffusive permeability of electrolyte solutions across a swollen regenerated cellulose membrane**

*L. Gelde, L. Peláez, M.I. Vázquez, J. Benavente*

Grupo de Caracterización Electrocinética en Membranas e Interfases. Departamento de Física Aplicada I, Facultad de Ciencias. Universidad de Málaga, Spain

**P141. [293]. Preparation and identification of optimum synthesis conditions for a novel anion-exchange membrane**

*A. Marcos-Madrado\*, C. Casado-Coterillo\*, L. García-Cruz\*\*, J. Iniesta\*\*, A. Irabien\**

\*Department of Chemical and Biomolecular Engineering, Universidad de Cantabria, Spain

\*\*Departamento de Química Física e Instituto de Electroquímica, Universidad de Alicante, Spain

**P142. [305]. Proton transport on phosphoric-doped composite Polybenzimidazole membranes with ionic liquids for high temperature fuel cells applications**

*Abel Garcia-Bernabé\*, Jorge Escorihuela\*, Álvaro Montero\*, Óscar Sahuquillo\*\*, Enrique Gimenez\*\*, Vicente Compañ\**

\*Departamento de Termodinámica Aplicada, Universitat Politècnica de València, Spain

\*\*Instituto de Tecnología de Materiales, Universitat Politècnica de València, Spain

**P143. [306]. Effect of crosslinker in ionic transport on composite polymers containing covalently attached and absorbed ionic liquid fragments**

*Abel Garcia-Bernabé\*, José F. Fraile-Huercio\*, Santiago V. Luis\*\*, Vicente Compañ\**

\*Departamento de Termodinámica Aplicada, Universitat Politècnica de València, Spain

\*\*Departamento de Inorgánica y Orgánica, Universidad Jaume I, Spain

**P144. [307]. Sub-stoichiometric titanium oxide reactive electrochemical membrane for removal of organic pollutants from water: process and material development**

*C. Trelu\*, M. Rivallin\*, R. Esmilaire\*, S. Cerneaux\*, S. Lacour\*, J.C. Rouch\*\*, C. Coetsier\*\*, C. Causserand\*\*, M. Cretin\**

\*IEM, Univ Montpellier, CNRS, ENSCM, France

\*\*Laboratoire de Génie Chimique, Université de Toulouse, CNRS, INPT, UPS, Toulouse, France

**P145. [382]. Challenges in the use of reversal electro dialysis to upgrade the saline energy gradient in Cantabria**

*L. Gómez-Coma\*, J. Carrillo-Abad\*, R. Ortiz\*, A. Ortiz\*, R. Ibañez\*, N. Gordejuela\*\*, M. Mallavia\*\*, J. Pinedo\*, I. Ortiz\**

\*Chemical and Biomolecular Engineering Department, University of Cantabria (UC), Spain

\*\*Mare S.A, Spain

**P146. [386]. Influence of the pulsed electric field parameters on the chronoamperograms of Nafion™ 438**

*S. Zyryanova\*, D. Butylskii\*, N. Pismenskaya\*, G. Pourcelly\*\*, A. Uzdanova\*\*\*, V. Nikonenko\**

\*Membrane Institute, Kuban State University, Russia

\*\*European Membrane Institute, University of Montpellier, France

\*\*\*Karachaevo-Cherkessky State University, Karachaevsk, Russia

**P147. [419]. Conductivity, Diffusivity and Free Charge Density in Polymer-Supported Ionic-Liquid-Like Phases (SILLPs)**

*S. I. Hernández\*, C. García-Alcántara\*, A. Andrio\*\*, S.V. Luis\*\*\*, V. Compañ\*\*\*\**

\*Unidad Multidisciplinaria de Docencia e Investigación-Juriquilla, Facultad de Ciencias, Universidad Nacional Autónoma de México (UNAM), Mexico

\*\*Departamento de Física Aplicada. Universitat Jaume I, Spain

\*\*\*Departamento de Química Inorgánica y Orgánica. Universitat Jaume I, Spain

\*\*\*\*Departamento de Termodinámica Aplicada. Universitat Politècnica de València, Spain

**P148. [426]. Theoretical study of non-catalytic water splitting reaction in membrane systems**

*A.V. Pismenskiy, V.V. Nikonenko, A.V. Kovalenko, M.Kh. Urtenov*

Kuban State University, Russia

**P149. [438]. Desalination of sodium formate from methanol-formamide solution via electro dialysis**

*Libor Šeda, Ladislav Čopák*

MemBrain s.r.o., Czech Republic

**P150. [457]. Effect of current density on the structure of diffusion boundary layer adjacent to an ion-exchange membrane in solutions containing multiply charged ions**

*V.V. Gil, S.A. Mareev, V.V. Nikonenko, N.D. Pismenskaya*

Institute of Membranes, Kuban State University, Russia

**P151. [473]. Influence of roughness of microfiltration membranes in Electrical Impedance Spectroscopy measurements**

*D.R. Díaz\*, F.J. Carmona\*\*, L. Palacio\*\*\*, N.A. Ochoa\*, A. Hernández\*\*\*, P. Prádanos\*\*\**

\*Laboratorio de Membranas y Biomateriales, Instituto de Física Aplicada, Universidad Nacional de San Luis-CONICET, Argentina

\*\*Dpto. de Física Aplicada. Escuela Politécnica, Universidad de Extremadura, Spain

\*\*\*Grupo de Superficies y Materiales Porosos, Dpto. Física Aplicada, Facultad de Ciencias, Universidad de Valladolid, Spain

**P152. [490]. Regenerated cellulose membrane modification by Janus-silver nanoparticles inclusion**

*L. Gelde\**, *L. Peláez\**, *M.I. Vázquez\**, *M. Sánchez\*\**, *M. López-Romero\*\*\**, *J. Benavente\**

\*Dpto. de Física Aplicada I, Facultad de Ciencias. Universidad de Málaga, Spain

\*\*Dpto. de Química Orgánica, Facultad de Ciencias. Universidad de Málaga, Spain

\*\*\*Icon Nanotech, Spain

**P153. [516]. Modelling the transport of weak electrolytes through ionexchange membranes**

*M.C. Martí-Calatayud\**, *\*\**, *E. Evdochenko\*\**, *M. García-Gabaldón\**, *V. Pérez-Herranz\**, *M. Wessling\*\**, *§*

\*Grupo IEC, Dept. de Ingeniería Química y Nuclear, Universitat Politècnica de València, Spain

\*\*Chemical Process Engineering, RWTH Aachen University, Germany

§ DWI-Leibniz Institute for Interactive Materials, Aachen, Germany

**P154. [518]. Electrowinning of metallic iron from hematite leaching solutions with red cells**

*Gerardo Cifuentes<sup>1</sup>*, *Aldo Ahumada<sup>1</sup>*, *Manuel Muñoz<sup>1</sup>*, *Belén Garrido<sup>1</sup>* and *Magdalena Cifuentes<sup>2</sup>*

<sup>1</sup> Metallurgical Engineering Department, University of Santiago of Chile (USACH), Chile

<sup>2</sup> Chemical and Nuclear Engineering Department, Polytechnic University of Valencia (UPV), Spain

**P155. [573]. Chloride effect on transport properties of phosphate through an anion exchange membrane by chronopotentiometry**

*C. Gally\**, *E.M. Ortega\*\**, *M. García-Gabaldón\*\**, *V. Pérez-Herranz \*\**, *A.M. Bernardes\**

\*Departamento de Engenharia de Metais, Universidade Federal do Rio Grande do Sul, Brazil

\*\*IEC Group, Universitat Politècnica de València, València, Spain

**P156. [662]. Scale-up of a membrane electrochemical reactor for zinc recovery from spent pickling baths**

*J. Carrillo-Abad\**, *M. García-Gabaldón\**, *E. Ortega*, *A.M. Urtiaga\*\**, *V. Pérez-Herranz\**

\* Grupo IEC, Dept. de Ingeniería Química y Nuclear, Universitat Politècnica de València, Spain

\*\* Departamento de Ingenierías Química y Biomolecular, Universidad de Cantabria, Spain

**P157. [911]. The anion exchange membrane based poly(ether ether ketone) for fuel cell application**

*Sang Yong Nam, and Tae Yang Son*

Department of Materials Engineering and Convergence Technology, Engineering Research Institute, Gyeongsang National University, Korea

**P158. [918]. Cadmium (II) removal in water using nanoparticles embedded on a membrane and detection using anodic stripping voltammetry**

*S. Sam*, *S.P. Malinga*, *N. Mabuba*

\*Department of Applied Chemistry, University of Johannesburg, South Africa

## Membranes for energy conversion and storage

**P159. [19]. Chevron-profiled membranes – an innovative design for increasing net power density in Reverse Electrodialysis (RED)**

*S. Pawlowski\**, *T. Rijnaarts\*\**, *M. Saakes\*\*\**, *K. Nijmeijer\*\*\*\**, *J.G. Crespo\**, *S. Velizarov\**

\*LAQV-REQUIMTE, DQ, FCT, Universidade NOVA de Lisboa, Caparica, Portugal

\*\*Membrane Science & Technology, University of Twente, MESA+ Institute for Nanotechnology, The Netherlands

\*\*\*Wetsus, European Centre of Excellence for Sustainable Water Technology, The Netherlands

\*\*\*\*Membrane Materials and Processes, Eindhoven University of Technology, The Netherlands

**P160. [244]. Fabrication and characterizations of pore-filled ion-exchange membranes for efficient reverse electrodialysis**

*Do-Hyeong Kim\*, Bo-Sung Kang\*, Moon-Sung Kang\**

\*Sangmyung University, Republic of Korea

**P161. [262]. Robust thermally rearranged (TR) polymer membrane for high performance in pressure retarded osmosis (PRO) using highly concentrated solutions**

*S.J. Moon, J.H. Kim, S.H. Park, S.M Lee, and Y.M. Lee\**

\*Department of Energy Engineering, College of Engineering, Hanyang University, Republic of Korea

**P162. [271]. Scale-Up of planar oxygen transport membranes to component size**

*F. Schulze-Küppers\*, S. Baumann\*, F. Drago\*\*, P. Fedeli\*\*, W.A. Meulenber\**

\*Forschungszentrum Jülich GmbH, Institute of Energy and Climate Research, Materials Synthesis and Processing (IEK-1), Germany

\*\*Ricerca sul Sistema Energetico – RSE SpA, Italy

**P163. [373]. Synthesis and characterization of a novel functionalized crosslinked polysiloxane for proton exchange membrane fuel cell**

*G.M. González Guerra\*, M.A. Alatorre Ordaz\*, G. González García\*, J.A. Lambert\*\**

\*Universidad de Guanajuato, Depto. de Química, México

\*\*CIATEC, AC., México

**P164. [415]. Ternary polybenzimidazole membranes for advanced alkaline water electrolysis**

*David Aili\*, Mikkel Rykær Kraglund, Jens Oluf Jensen*

Department of Energy Conversion and Storage, Technical University of Denmark, Denmark

**P165. [416]. Removal of hydrogen sulfide impurities from biogas mixtures by hollow fibre PDMS membrane**

*A Salekovics, P. Bakonyi, K. Belafi-Bako, N. Nemestóthy*

1 Research Institute on Bioengineering, Membrane Technology and Energetics, University of Pannonia, Hungary

**P166. [546]. Cation Exchange Membrane Design for Reducing the Impact of Mg<sup>2+</sup> ion on Salinity Gradient Power-Reverse Electrodialysis**

*Ramato Ashu Tufa\*, Theo Piallat\*, Roman Kodym\*, Willem van Baak\*\*, Jaromír Hnát\*, Martin Paidar\*, Karel Bouzek\**

\*Department of Inorganic Technology, University of Chemistry and Technology Prague, Czech Republic

\*\*Fujifilm Manufacturing Europe BV, The Netherlands

**P167. [643]. Nanodispersed perfluorinated ionomers for polymer electrolyte membrane fuel cells**

*S. Y. Pyo, J. P. Hwang, J. H. Ahn, Y. J. Lim, W. Y. Kim, J. J. Park, C. H. Lee*

Energy Engineering Department, Dankook University, Republic of Korea

## Fuel cells and batteries

**P168. [66]. Membrane characterization and accelerated cycling durability in hydrogen-bromine flow battery system**

*Y. A. Hugo\*, W. Kout\*, F. D. Sikkema\*, Z. Borneman\*\*, K. Nijmeijer\*\**

\*Elestor B.V., The Netherlands

\*\*Membrane Materials and Processes, Eindhoven University of Technology, Department of Chemical Engineering and Chemistry, The Netherlands

**P169. [156]. Innovative membranes based on polymerizable ionic liquid and its copolymers for fuel cell applications**

*L.A. Herrero\*, A. Ortiz\*, B. Ameduri\*\*, M. Colpaert\*\*, I. Ortiz\**

\*Chemical and Biomolecular Engineering Department, University of Cantabria, Spain

\*\*Ingénierie et Architectures Macromoléculaires, Institut Charles Gerhardt, France

**P170. [201]. Polybenzimidazole (PBI) doped with zeolitic imidazolate frameworks for high temperature proton exchange membranes**

*Jorge Escorihuela\**, *Arturo Barjola-Ruiz\**, *Abel García-Bernabé\**, *Óscar Sahuquillo\*\**, *Enrique Giménez\*\**, *Vicente Compañ\**

\*Escuela Técnica Superior de Ingenieros Industriales – Departamento de Termodinámica Aplicada, Universitat Politècnica de València, Spain

\*\*Instituto de Tecnología de Materiales, Universitat Politècnica de València, Spain

**P171. [257]. Development of pore-filled anion-exchange membranes for alkaline direct liquid fuel cells**

*Do-Hyeong Kim\**, *Jin-Soo Park\**, *Moon-Sung Kang\**

\*Sangmyung University, 31 Sangmyungdae-gil, Dongnam-gu, Cheonan, Republic of Korea

**P172. [284]. SPEEK membranes doped with zeolitic imidazolate frameworks for proton conducting applications**

*A. Barjola\**, *A. Andrio\*\**, *J. Escorihuela\**, *E. Giménez\*\*\**, *V. Compañ\**

\*Departamento de Termodinámica Aplicada, Escuela Técnica Superior de Ingenieros Industriales (ETSII), Universidad Politècnica de Valencia, Spain

\*\*Departamento de Física Aplicada, Universitat Jaume I, Spain

\*\*\*Departamento de Ingeniería de Materiales, Universidad Politècnica de Valencia, Spain

**P173. [872]. PVDF/PVDFs based Microporous Layers (MPLs) development for PEMFCs**

*A. Comite\**, *A. Bottino\**, *C. Costa\**

\*membrane&membrane Research Group, Department of Chemistry and Industrial Chemistry (DCCI), University of Genoa, Italy

**P174. [881]. Poly(vinyl alcohol) based membranes with sulfonated graphene oxide and graphene oxide particles for fuel cell applications**

*O. Gil-Castell\**, *R. Cerveró\**, *R. Teruel-Juanes\**, *J. D. Badia\*\**, *A. Ribes-Greus\**

\*Instituto de Tecnología de Materiales (ITM), Universitat Politècnica de València, Spain

\*\*Instituto de Tecnología de Materiales (ITM), Universitat Politècnica de València, Spain

**P240. [542]. The synergy effect of ionic liquids impregnated into PBI matrices with a phosphoric acid post treatment**

*G. Skorikova*, *R. Hempelmann*

Transfercenter Sustainable Electrochemistry, Saarland University and KIST Europe, Germany

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**P175. [48]. Polysulfone/N,Pd co-doped TiO<sub>2</sub> photocatalytic membranes for dye degradation**

*A.T. Kuvarega*, *N. Khumalo*, *D. Dlamini* and *B.B. Mamba*

\*Nanotechnology and Water Sustainability Research Unit, University of South Africa, College of Science, Engineering and Technology, South Africa

**P176. [136]. Carbon Nitride Nanotubes Membranes**

*S. Casanova\**, *D. Mattia\**

\*Department of Chemical Engineering and Centre for Advanced Separations Engineering, University of Bath, UK

**P177. [199]. Thermally rearranged (TR) polymer membranes for lithium-ion battery separator**

*S.H. Noh\**, *J.H. Kim\**, *S.H. Park\**, *S.J. Moon\** and *Y.M. Lee\**

\*School of Energy Engineering, College of Engineering, Hanyang University, Seoul, Korea

**P178. [204]. Fouling mitigation in ultrafiltration for wastewater treatment using zinc oxide nanoparticles**

*C. B. Ong<sup>a,b</sup>*, *S. Laksono<sup>a</sup>*, *S. Panglisch<sup>a</sup>*, *A. W. Mohammad<sup>b</sup>*, *A. Wittmar<sup>c,d</sup>*, *M. Ulbricht<sup>c,d</sup>*

- a Chair of Mechanical Process Engineering/Water Technology, University Duisburg-Essen (UDE), Duisburg, Germany  
b Department of Chemical and Process Engineering, Faculty of Engineering and Built Environment, Universiti Kebangsaan Malaysia, Malaysia  
c Lehrstuhl für Technische Chemie II, Universität Duisburg-Essen, Germany  
d CENIDE – Center for Nanointegration Duisburg-Essen, Germany

**P179. [454]. Carbon Nanomembranes (CNMs) - 1-nm thick selective membranes for separation and filtration**

*Polina Angelova, Henning Vieker, Nikolaus Meyerbröker, Albert Schnieders*  
CNM Technologies GmbH, Germany

**P180. [548]. Energy transduction of fluctuating signals using single and multipore asymmetric membranes**

*P. Ramirez\*, J. Cervera\*\*, V. Gomez\*, M. Ali†, S. Nasir§, W. Ensinger§, S. Mafe\*\**

\*Dept. de Física Aplicada, Universitat Politècnica de València, Spain

\*\*Dept. de Física de la Terra i Termodinàmica. Universitat de València, Spain

†Materials Research Dept. GSI Helmholtzzentrum für Schwerionenforschung, Germany

§Dept. of Material- and Geo-Sciences. Technische Universität Darmstadt, Germany

**P181. [556]. PVDF hollow fibers prepared by using adipic acid as additive: morphological characterization by helium ion microscopy (HIM)**

*F. B. S. Mendes\*, \*\*\*, C. C. Pereira\*\*, C. P. Borges\*\*, A. C. Habert\*\*, \*\*\**

\*Brazilian Navy Research Institute (IPqM)

\*\*Laboratory of Membrane Separation Processes / Chemical Engineering Program/ COPPE/Federal University of Rio de Janeiro (UFRJ), Brazil

\*\*\*Nanotechnology Engineering Program/COPPE/Federal University of Rio de Janeiro (UFRJ), Brazil

**P182. [602]. Fabrication of macrovoid-free polyethersulfone/sulfonated polysulfone/o-MWCNT support UF membranes with improved mechanical strength, antifouling and performance properties**

*N.N. Gumbi\*, B.B. Mamba\*, E.N. Nxumalo\*, J. Li\*\**

\*Nanotechnology and Water Sustainability Research Unit, College of Science, Engineering and Technology, University of South Africa Science Campus, South Africa

\*\*State Key Laboratory of Separation Membranes and Membrane Processes, School of Materials Science and Engineering, Tianjin Polytechnic University, PR China

**P183. [700]. Cross-linked polymer inclusion membrane (PIM): Faster extraction and longer stability**

*B. Hoque\*, M.I.G.S. Almeida\*, R.W. Catrall\*, T.G. Gopakumar\*\*, S.D. Kolev\**

\* School of chemistry, University of Melbourne, Australia

\*\* Department of chemistry, Indian Institute of Technology, India

**P184. [769]. Effects of confined graphene in membrane distillation**

*A. Gugliuzza\*, A. Politano\*\*, F. Macedonio\*, E. Drioli\**

\*Research Institute on Membrane Technology-National Research Council (CNR-ITM), Italy

\*\*Fondazione Istituto Italiano di Tecnologia (IIT), Graphene Labs, Italy

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**P185. [5]. The effect of membrane-vessel wall distance, continuous phase viscosity and rotating speed on droplet size in SPG membrane emulsification**

*Z. Šereš\*, Lj. Dokić\*, N. Maravić\*, D. Šoronja Simović\*, I. Nikolić\*, J. Petrović\*, B. Hajnal\**

\*Faculty of Technology, University of Novi Sad, Serbia

**P186. [77]. Boron nitride nanosheets (BNNS) membranes**

*J. Ji, Y. Chua, D. Mattia\**

\*Centre for Advanced Separations Engineering and Department of Chemical Engineering, University of Bath, UK

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*T. Truong\**, *T. Larocca\*\**, *E. Louradour\**, *E. Carretier\*\**, *D. Dhaler\** and *P. Moulin\*\**

\*Orelis Environnement, France

\*\*Aix Marseille Université, CNRS, Equipe Procédés Membranaires (EPM), France

**P188. [210]. Ionomer based hybrid membranes for CO<sub>2</sub> capture**

*Zhongde Dai<sup>1</sup>*, *Hesham Aboukeila<sup>1,2</sup>*, *Luca Ansaloni<sup>1</sup>*, *Jing Deng<sup>1</sup>*, *Marco Giacinti Baschetti<sup>2</sup>* and *Liyuan Deng<sup>1\*</sup>*

1. Department of Chemical Engineering, Norwegian University of Science and Technology, Trondheim, Norway

2. Dipartimento di Ingegneria Civile Chimica Ambientale e dei Materiali, Alma Mater Studiorum-Università di Bologna, Italy

**P189. [232]. Fabrication and characterizations of interpenetrating polymer network membranes containing hydrogel capsules**

*Do-Hyeong Kim\**, *Ji-Eun Lee\**, *Eun-Hye Jang\*\**, *Dae-Jin Ko\*\**, *Moon-Sung Kang\**

\*Sangmyung University, Republic of Korea

\*\*KNTeC Corporation, Republic of Korea

**P190. [273]. Bioinspired forward osmosis assisted hydroponic system: a promising paradigm of bio-desalination**

*Amir Razmjou\**, \*\* and *Fereshteh Mohagheghian\**

\*Department of Biotechnology, Faculty of Advanced Sciences and Technologies, University of Isfahan, Iran

\*\*UNESCO Centre for Membrane Science and Technology, School of Chemical Science and Engineering, University of New South Wales, Australia

**P191. [278]. Concentration of aqueous *S. cumini* (L.) leaves extract using nanofiltration: Effect of pre-treatment and analysis of flux decline**

*Upasna Balyan*, *Biswajit Sarkar\**

\*University School of Chemical Technology, GGS Indraprastha University, India

**P192. [302]. Affinity membrane chromatography for the purification of Immunoglobulin G**

*E. Lalli\**, *C. Cavallotti\*\**, *G.B. Giovenzana\*\*\**, *G.C. Sarti\**, *C. Boi\**

\*Dipartimento di Ingegneria Civile, Chimica, Ambientale e dei Materiali, DICAM, Università di Bologna, Italy

\*\*Dipartimento di Chimica, Materiali e Ingegneria Chimica G. Natta, Politecnico di Milano, Italy

\*\*\*Dipartimento di Scienze del Farmaco, Università del Piemonte Orientale "A. Avogadro", Italy

**P193. [408]. Microstructured Systems for Lemon Oil Encapsulation**

*W. Kaade\**, *M. Ferrando\**, *S. De Lamo Castellví\**, *C. Güell\**

\*Departament d'Enginyeria Química, Universitat Rovira i Virgili, Spain

**P194. [464]. Dynamic Membranes for Food Aroma Encapsulation**

*W. Kaade\**, *M. Mestres\*\**, *M. Ferrando\**, *S. De Lamo Castellví\**, *C. Güell\**

\*Departament d'Enginyeria Química, Universitat Rovira i Virgili, Spain

\*\*Departament de Química Analítica i Química Orgànica, Universitat Rovira i Virgili, Spain

**P195. [484]. Comparative evaluation of physical cleaning methods for removing organic foulants by fluorescence excitation-emission and PARAFAC**

*S.H. Nam<sup>1</sup>*, *J.W. Koo<sup>1</sup>*, *J.W. Sim<sup>2</sup>*, *E.J. Kim<sup>1</sup>*, *T.M. Hwang<sup>1,†</sup>*

1 Korea Institute of Civil Engineering and Building Technology, Republic of Korea

2 Korea University of Science & Technology, Republic of Korea,

**P196. [486]. Economic evaluation of the reverse osmosis and pressure retarded osmosis hybrid desalination process**

*J.W. Koo<sup>1</sup>*, *Y.J. Choi<sup>2</sup>*, *S.H. Nam<sup>1</sup>*, *E.J. Kim<sup>1</sup>*, *T.M. Hwang<sup>1,†</sup>*

1 Korea Institute of Civil Engineering and Building Technology, Republic of Korea

2 School of Civil and Environmental Engineering, Kookmin University, Jeongneung-Dong, Seongbuk-Gu, Republic of Korea

**P197. [505]. Liquid membranes in Taylor flow regime**

*A.D. Pérez*, *J. Fontalvo\**

Universidad Nacional de Colombia - Sede Manizales – Facultad de Ingeniería y Arquitectura - Departamento de Ingeniería Química – Laboratorio de Intensificación de Procesos y Sistemas Híbridos – Grupo de Investigación en Aplicación de Nuevas Tecnologías, Colombia

**P198. [515]. Sinusoidal flux permeation applied to investigate fouling irreversibility in ultrafiltration**

*M.C. Martí-Calatayud\*,\*\*, S. Schneider\*\*, M. García-Gabaldón\*, V. Pérez-Herranz\*, M. Wessling\*\*,§*

\*Grupo IEC, Dept. de Ingeniería Química y Nuclear, Universitat Politècnica de València, Spain

\*\*Chemical Process Engineering, RWTH Aachen University, Germany

§ DWI-Leibniz Institute for Interactive Materials, Germany

**P199. [566]. Unravelling the force balance in a magnetic responsive biohybrid membrane for sustainable separations**

*Abaynesh Y. Gebreyohannes\*, T. Geens\*, A. Kubarev\*, M. Roeffaers\*, T. Verbiest\*\*, W. Naessens\*\*\*, I. Nopens\*\*\*, Ivo F.J. Vankelecom\**

\*Centre for Surface Chemistry and Catalysis KU Leuven Chem & Tech Celestijnenlaan, Belgium

\*\*Molecular Imaging and Photonics, Faculty of Bioengineering Sciences, KU Leuven, Belgium

\*\*\* Department of Data analysis and mathematical modelling, Gent University, Belgium

**P200. [587]. Insight CO<sub>2</sub> capture by aqueous ammonia with membrane contactors: tackling the salt formation issue to ensure capture efficiency**

*K. Villeneuve\*, D. Roizard\*, S. Rode\*, JMC Remigy\*\**

\*Laboratoire Réactions et Génie des Procédés, CNRS Université de Lorraine, France

\*\*Le Laboratoire de Génie Chimique, Université Paul Sabatier, France

**P201. [708]. Membranes from vertical aligned CNTs (VA-CNT) for waste water treatment**

*M. Rashid\*, M. Krug\*\*, S. Höhn\*\*, K. Schlenstedt\*, L. Jakisch\*, J. Meier-Haack\**

\*Leibniz Institute of Polymer Research Dresden, Germany

\*\*Fraunhofer Institute for Ceramic Technologies and Systems IKTS, Germany

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**P202. [12]. Functional membranes as extracellular matrix for the central nervous system**

*Leoncio Garrido\*, Agatha Bastida\*\*, Julia Revuelta\*\*, Eduardo García-Junceda\*\*, Alfonso Fernández-Mayoralas\*\**

\*Instituto de Ciencia y Tecnología de Polímeros, ICTP-CSIC, Spain

\*\*Instituto de Química Orgánica General, IQOG-CSIC, Spain

**P203. [97]. Glycerin release from membrane by filtration and soaking: Application to “one shoot membranes” for medical**

*S. Arénillas\*, M. Drouin\*, E. Monnin\*\*, Philippe Moulin\**

\*Aix Marseille Univ, CNRS, Equipe Procédés Membranaires (EPM), France

\*\*Eveon, France

**P204. [170]. Lipid coverage for PVD porous membrane biocompatibilization**

*L. Gelde\*, V. Romero\*, L. Peláez\*, M.I. Vázquez\*, J. M. López-Romero\*\*, J. Benavente\**

\*Dpto. Física Aplicada I, Facultad de Ciencias. Universidad de Málaga, Spain

\*\*Dpto. Química Orgánica, Facultad de Ciencias, Universidad de Málaga, Spain

**P205. [218]. Novel convective affinity chromatography membranes for preparative separations processes**

*F. Hagemann\*, P. Adametz\*\*, V. Thom\*\**

\*Sartorius Stedim Biotech GmbH, Germany

\*\*Sartorius Stedim Biotech GmbH, Germany



**P206. [379]. Membrane properties modulate behaviour of keratinocytes and mesenchymal stem cells in a dermal-epidermal system**

*Simona Salerno\**, *Augustinus Bader\**, *Lidietta Giorno\** and *Loredana De Bartolo\**

\*Institute on Membrane Technology, National Research Council of Italy, ITM-CNR, Italy

**P207. [410]. A comparative study of poly( $\epsilon$ -caprolactone) membranes functionalized with graphene on flat and hollow fiber configuration for tissue engineering**

*N. Diban\**, *O. David\*\**, *S. Sanchez-González\**, *A. Urtiaga\**

\*Department of Chemical and Biomolecular Engineering, University of Cantabria, Spain

\*\*Energy and Environmental Division, Tecnalia, Spain

**P208. [471]. CO<sub>2</sub> and O<sub>2</sub> permeation of polyurethane/polycaprolactone integral asymmetric and nonporous symmetric membranes**

*T. Eusébio\**, *M. Faria\*\**, *E. J. M. Filipe\*\*\**, *M. N. de Pinho\*\**

\*Chemical Engineering Department, Instituto Superior Técnico, Universidade de Lisboa, Portugal

\*\*CeFEMA, Chemical Engineering Department, Instituto Superior Técnico, Universidade de Lisboa, Portugal

\*\*\*CQE, Centro de Química Estrutural, Instituto Superior Técnico, Universidade de Lisboa, Portugal

**P209. [512]. Effects of electron beam irradiation on the structural, mechanical and transport properties of chitosan membranes**

*Alia Baroudj\**, *Carmen García-Payo\**, *Mohamed Khayet\**, \*\*

\*Department of Applied Physics I, Faculty of Physics, University Complutense of Madrid, Spain

\*\*Madrid Institute for Advanced Studies of Water (IMDEA Water Institute), Spain.

**P210. [534]. Supramolecular interaction-enhanced self-assembled asymmetric block copolymer membranes as drug reservoirs for controlled release**

*T. Huang*, *P. Manchanda*, *K.V. Peinemann*

Advanced Membrane and Porous Materials Center, King Abdullah University of Science and Technology, Saudi Arabia

**P211. [660]. The influence of flow interruptions on bacteria and particle retention efficiency by microfiltration membranes**

*A. Helling\**, \*\*, *M. Polakovic\**, *D. Melzner\*\**, *V. Thom\*\**,

\*Slovak University of Technology, Slovakia

\*\*Sartorius Stedim Biotech GmbH, Germany

**P212. [692]. Selection of fillers for the development of novel Mixed Matrix Membrane Adsorbers for the removal of uremic toxins**

*M. De Pascale\**, *F. Parri\**, *M.G. De Angelis\**, *C. Gualandi\*\**, *M.L. Focarete\*\**, *C Boi\**

\*Dipartimento di Ingegneria Civile Chimica Ambientale e dei Materiali, Alma Mater Studiorum-Università di Bologna, Italy

\*\*Dipartimento di Chimica "Giacomo Ciamician", Italy

**P213. [880]. In vitro evaluation of tailored nanofibrous polycaprolactone/gelatin membranes for biomedical applications**

*O Gil-Castell\**, *JD Badia\*\**, *I Ontoria\*\*\**, *D Castellano\*\*\**, *P Sepúlveda\*\*\**, *A Ribes-Greus\**

\*Instituto de Tecnología de Materiales (ITM). Universitat Politècnica de València, Spain

\*\*Departament d'Enginyeria Química. Escola Tècnica Superior d'Enginyeria. Universitat de València, Spain

\*\*\*Unidad de Regeneración y Trasplante Cardíaco. Instituto de Investigación Sanitaria La Fe, Spain.

**P214. [915]. The effect of iron(III) concentration in nitric acid solutions on diffusion dialysis membrane performance**

*David Malý\**, \*\*, *Martin Kout\**,

\*MemBrain s.r.o., Czech Republic

\*\*University of Chemistry and Technology, Department of Polymers, Czech Republic

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*Sari Alsayegh\**, \*\*, *J. R. Johnson\**, *Burkhard Ohs\*\**, *Matthias Wessling\*\**

\*SABIC (Saudi Basic Industries Corporation) Research Center, Saudi Arabia

\*\*RWTH Aachen University – AVT.CVT, Germany

### **P216. [185]. Coupling between nanofiltration and ozonation for wastewater reuse: a technical and economic analysis**

*J. Mendret\**, *A. Azais\**, *S. Brosillon\**

\*Institut Européen des Membranes, Université de Montpellier, FRANCE

### **P217. [192]. Simple graphical approach to compare performances of several membrane cascades' designs applied to OSN of 10-undecenitrile hydroformylation final medium**

*Lejeune Antoine\**, *Rabiller-Baudry Murielle\**, *Renouard Thierry\**, *Augello Jonathann\**, *Liu Yatong\**, *Balannec Béatrice\**, *Dominique Wolbert\**

\*Univ Rennes, Ecole Nationale Supérieure de Chimie de Rennes, CNRS, ISCR (Institut des Sciences Chimiques de Rennes), France

### **P218. [212]. VOC dehydration by pervaporation including a near-infrared acquisition system**

*T. LA ROCCA\**, *E. CARRETIER\**, *T. CLAIR\*\**, *M. ETIENNE\*\**, *P. MOULIN\**

\*Aix-Marseille Université, CNRS Centrale Marseille, Equipe Procédés Membranaires (EPM), France

\*\*SANOFI, France

### **P219. [247]. Mass and heat transfer during pervaporation process**

*S.A.Toudji\**, *J-P.Bonnet\**, *J-L.Gardarein\*\**, *E. Carretier\**

\* Aix Marseille Univ, CNRS, France

\*\* Aix Marseille Univ, CNRS, IUSTI, France

### **P220. [300]. Fundamental Modelling of Membrane Systems: Membrane and Process Performance**

*Patricia Luis*

Materials & Process Engineering (iMMC-IMAP), Université catholique de Louvain, Belgium

### **P221. [361]. Process intensification of heterogeneous catalyzed reactions using membranes**

*L. Eykens\**, *D. Ormerod\**, *M. Dorbec\**, *A. Buekenhoudt\**

\*VITO (Flemish Institute for Technological Research), Belgium

### **P222. [609]. Environmental and economic assessment of reverse osmosis recycling to nanofiltration and ultrafiltration at pilot scale**

*Jorge Senán-Salinas\**, *R. García-Pacheco\**, *J. Landaburu-Aguirre\**, *S. Molina\**, *E. García-Calvo\**, \*\*

\*IMDEA Water Institute, Spain

\*\*Chemical Engineering Department, University of Alcalá, Spain

### **P223. [761]. Recovery of valuable substances by treatment of liquids from the Printed-Circuit-Board industry with Membrane Distillation**

*C. Platzer\**, *S. Meitz\*\**, *E. Guillen*, *A. A. J. Tahir*, *Brunner*, *J. Buchmaier*, *B. Muster*

### **P224. [813]. Novel domestic reverse osmosis filter with reduced waste water discharge**

*Y. Orestov\**, *DSc T. Mitchenko\*\**

\*SPC Ecosoft Ltd, Ukraine

\*\*National Technical University of Ukraine, Ukraine

### **P225. [820]. Comprehensive experimental study of membrane cascade configurations of continuous membrane column type for highpurification of gases**

*V.M. Vorotyntsev*, *A.A. Atlaskin*, *M.M. Trubyanov*, *D.N. Shablikin*, *P.N. Drozdov*, *I.V. Vorotyntsev*

Laboratory of membrane and catalytic processes, Nanotechnology and Biotechnology Department, Nizhny Novgorod State Technical University n.a. R.E. Alekseev, Russia

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### **P226. [88]. Air backwash efficiency on organic fouling Impact on hydraulic performances and oyster gametes viability**

*C. Cordier\**, *C. Stavrakakis\*\**, *P. Sauvade\*\*\**, *F. Coelho\*\*\**, *P. Moulin\**

\*Aix Marseille Université, CNRS, Centrale Marseille, Equipe Procédés Membranaires (EPM), Aix en Provence Cedex, France

\*\*Laboratoire Sécurisation des Productions en Conchyliculture, France

\*\*\*Aquasource, France

### **P227. [121]. Determination of molecular weight cut off by x-ray micro CT**

*J. Perrin\**, *J. Vicente\*\**, *D. Borschneck\*\*\*\**, *J.P. Bonnet\**, *J. Anquetil\*\*\** and *P. Moulin\**

\*Aix Marseille Université, CNRS, Centrale Marseille, Equipe Procédés Membranaires (EPM), France

\*Institut Universitaire des Systèmes Thermiques Industriels, Aix-Marseille Université Technopôle de Château-Gombert, France

\*\*\*Tami Industries, France

\*\*\*\*Aix Marseille Univ, France

### **P228. [239]. Membrane compaction and intrusion as performance-limiting factors during the operation of high-pressure reverse osmosis spiral wound elements**

*Ch. Kleffner\**, *G. Braun\**

\*TH Köln, Germany

### **P229. [245]. Numerical simulation of membrane filtration process adapted for water treatment of aerated sewage lagoons**

*G. Cano\**, *A. Mouahid\**, *E. Carretier\**, *D. Dhaler\*\**, *P. Moulin\**

\*Aix Marseille Université, Laboratoire de Mécanique, Modélisation et Procédés Propres, Equipe Procédés Membranaires, France

\*\*Orelis Environnement SAS, France

### **P230. [274]. Improvement of dynamic filtration system design for enhanced filtration performance and reduced energy requirement**

*Kyochan Kim\**, \*\*, *Donghyun Kim\*\**, *Yong Keun Chang\**, \*\*

\*Advanced Biomass R&D Center, Yuseong-gu, Republic of Korea

\*\*Department of Chemical and Biomolecular Engineering, KAIST, Republic of Korea

### **P231. [543]. Energy-efficient Hollow Fiber Membrane Module with Turbulent Jet**

*Donghyun Kim\**, *Kyochan Kim\**, \*\*, *Yong Keun Chang\**, \*\*

\*Department of Chemical and Biomolecular Engineering, KAIST, Republic of Korea

\*\*Advanced Biomass R&D Center, Republic of Korea

### **P232. [624]. An integrated solar-driven membrane distillation system for water purification and energy production**

*L.-J. Beier\**, *Q. Li\*\**, *J. W. Tan*, *R. A. Taylor*, *G. Leslie*

\*University of Applied Sciences Niederrhein, Germany

\*\*UNESCO Centre for Membrane Science & Technology, School of Chemical Engineering, University of New South Wales, Australia

### **P233. [736]. Designing of hollow fibre membrane distillation modules**

*Aamer Ali\**, *Enrico Drioli\**, \*\*

\*National Research Council - Institute on Membrane Technology (ITM-CNR), The University of Calabria, Italy

\*\*Hanyang University, WCU Energy Engineering Department, Haengdang-dong, Korea

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### **P234. [137]. Biomimetic membranes with Pluronic® based vesicles incorporating Aquaporin Z**

*R. Górecki\*\**, *M. Spulber, D \**, *Tvermoes \**, *K. W. Trzaskus \**, *C. Hélix-Nielsen \* \*\**

\*Aquaporin A/S, Denmark

\*\*Technical University of Denmark, Department of Environmental Engineering, Denmark

### **P235. [211]. Characterization of porous PTFE membranes and their potential application in osmotic distillation**

*J.I.Calvo\**, *A.Hernandez\**, *L.Palacio\**, *P.Pradanos\**, *M.Ailuno\*\**, *A.Bottino\*\**, *G.Carniglia\*\**, *A.Comite\*\**, *A. Jezowska\*\**, *M.Pagliero, \*\* R.Firpo\*\**

\*Surfaces and Porous Materials Group (SMAP), UA-UVA-CSIC, University of Valladolid, Spain

\*\*membrane&membrane Research Group, Department of Chemistry and Industrial Chemistry, University of Genoa, Italy

### **P236. [646]. Design and modelling forward osmosis process for the recovery and reuse of chromium from chrome tanning wastewater**

*Jaime Lora-Garcia\**, *Mayko Rannany S. Sousa\**, *Maria-Fernanda López-Pérez\**, *M. Arteaga\*\**, *E.S. Oporto\*\**, *N.I. Pinaya\*\**

\*Instituto de Seguridad Industrial, Radiofísica y Medioambiental (ISIRYM) Universitat Politècnica de València (UPV), Spain

\*\*Universidad Católica Boliviana "San Pablo", Bolivia

### **P237. [680]. Fouling analysis in Hollow Fiber Membrane Contactor for Concentration of Pomegranate Juice through Osmotic Distillation**

*M. Younas\**, *W. Ur-Rehman\**, *A. Muhammad\**

\* Department of Chemical Engineering, University of Engineering and Technology, Pakistan

### **P238. [704]. Tubular Forward Osmosis Membranes and Modules**

*K.S. Roelofs\**, *G. Bisle\**, *N. Sacher\**, *P. Dlugolecki\**, *G. Sun\*\**, *X.T. Nguyen\*\**, *M.E. Perry\*\**, *C.H. Nielsen\*\*\**

\*Berghof Membrane Technology GmbH

\*\*Aquaporin Asia Pte. Ltd.

\*\*\*Aquaporin Asia A/S

### **P239. [927]. Comparison of three hypersaline industrial wastewaters as draw solutions for forward osmosis concentration processes**

*J.L. Soler-Cabezas\**, *M.J. Luján-Facundo\**, *M.C. Vincent-Vela\**, *J.A. Mendoza-Roca\**, *L. Pastor-Alcañiz\*\**, *S. Doñate-Hernández\*\**

\*Instituto de Seguridad Industrial, Radiofísica y Medio Ambiental, Universitat Politècnica de València, Spain

\*\*Depuración de Aguas del Mediterráneo (DAM), Spain