

Oral Programme

Sunday 23rd September 2012

17:00-19:00 **Registration Desk Opens**, Sanctuary Foyer

18:00 - 20:00 **Welcome Drinks Reception & Poster Session 1**, Benjamin Britten Lounge & Whittle Room

Monday 24th September 2012

8:30-8:50 **Opening Ceremony**, Fleming Room

8:50-9:35 **[Plen1] Small molecule transport in polymers for gas and water purification applications** B. Freeman, *The University of Texas at Austin, USA*
Chaired by: R. Baker, Fleming Room

Location	Fleming Room	Westminster Suite	St James Suite	Abbey Room
Topic	Ultra- and Microfiltration - I	Membrane Contactors and Multifunctional Reactors - I	Modelling - I	Membranes for Biorefinery Applications - I
Session Chairs	M. Nik Sulaiman & M.N. de Pinho	A. Acomite & A. Criscuoli	V.N. Burganos & S. Curcio	L. Giorno & F. Lipnizki
9:40-10:00	[OA01] Separation and concentration of high molecular weight polysaccharides from white wine by ultrafiltration with diafiltration A.M. Resende ¹ , S. Catarino ² , V. Geraldés ¹ , M.N. de Pinho ^{*1} , ¹ Instituto Superior Técnico, Portugal, ² Instituto Nacional de Recursos Biológicos, Portugal	[OB01] Modeling the performance of flat and capillary membrane modules in vacuum membrane distillation A. Criscuoli ^{*1} , M.C. Carnevale ¹ , E. Drioli ^{1,2} , ¹ CNR, Italy, ² University of Calabria, Italy	[OC01] Multiscale modelling of protein fouling in ultrafiltration F. Paone ¹ , F. Bisignano ² , G. De Luca ² , S. Curcio ^{*1} , ¹ University of Calabria, Italy, ² CNR, Italy	[OD01] Membrane processes in biorefineries: From feedstock preparation to downstream processing F. Lipnizki ^{*1} , H. Krawczyk ² , A.S. Jönsson ² , ¹ Alfa Laval Copenhagen, Denmark, ² Lund University, Sweden
10:00-10:20	[OA02] Fouling control of submerged hollow fibre membranes: The effect of vibrations and fibre looseness T. Li ^{*1,2} , A.W.K. Law ^{1,2} , M. Cetin ^{1,2} , A.G. Fane ^{1,2} , F. Wicaksana ^{1,2} , ¹ Nanyang Technological University, Singapore, ² Singapore Membrane Technology Centre, Singapore	[OB02] Fully automated small-scale membrane reactor (MR) system for enzymes and process characterisation E. Lyagin ¹ , A. Drews ^{*2} , M. Kraume ¹ , ¹ TU Berlin, Germany, ² HTW Berlin, Germany	[OC02] Modeling biofouling, scaling and combined fouling in reverse osmosis membrane devices A.I. Radu ^{*1,2} , J.S. Vrouwenvelder ^{1,3} , M.C.M. van Loosdrecht ¹ , C. Picioreanu ¹ , ¹ Delft University of Technology, The Netherlands, ² Wetsus, The Netherlands, ³ King Abdullah University of Saudi Arabia, Saudi Arabia	[OD02] Integration of electro dialysis and enzymatic modification of amino acids for the production of biochemicals O.M. Kattan Rendi [*] , M. Girones, D.C. Nijmijer, <i>University of Twente, The Netherlands</i>
10:20-10:40	[OA03] Effect of colloids on critical fouling conditions during cross-flow microfiltration of wine Y. El Rayess ^{1,2} , C. Albasi ^{*1,2} , P. Bacchin ^{1,2} , P. Taillandier ^{1,2} , M. Mietton-Peuchot ^{3,4} , A. Devatine ^{3,4} , ¹ Université de Toulouse, France, ² CNRS, France, ³ Université de Bordeaux, France, ⁴ INRA, France	[OB03] The use of emulsion pertraction technology as an eco-innovative membrane process for the galvanic industry V. Garcia, N. Diban, E. Bringas, R. Ibañez, I. Ortiz, A.M. Urriaga [*] , <i>University of Cantabria, Spain</i>	[OC03] Modelling strategies of membrane contactor processes for CO₂ post-combustion capture: A critical reassessment E. Chabanon [*] , D. Roizard, E. Favre, <i>Lorraine Université, France</i>	[OD03] Nannochloropsis s. cell suspension concentration with ultrafiltration system and recovery of lipid for biodiesel production F. Giorno [*] , R. Mazzei, L. Giorno, <i>University of Calabria, Italy</i>
10:40-11:00	[OA04] Back-pulsing as a flux increasing method in microfiltration of milk A. Arkell [*] , A.S. Jönsson, <i>Lund University, Sweden</i>	[OB04] Catalytic hollow fibre based reactors for a enhance H₂ production by methanol steam reforming F.R. García-García ^{*1} , K.M.K. Yu ² , S.C. Tsang ² , K. Li ¹ , ¹ Imperial College London, UK, ² University of Oxford, UK	[OC04] Modeling solubility of CO₂ and C₂H₆ mixtures in crosslinked poly(ethylene oxide) copolymers M. Minelli ^{1,2} , M.G. De Angelis ^{*1} , M. Giacinti Baschetti ¹ , F. Doghieri ¹ , G.C. Sarti ¹ , C.P. Ribeiro jr. ³ , ¹ Università di Bologna, Italy, ² CIRI-MAM, Italy, ³ University of Texas at Austin, USA	[OD04] Structural optimization of membrane based biogas upgrading processes M. Scholz [*] , T. Melin, M. Wessling, <i>RWTH Aachen, Germany</i>
11:00-11:30	Coffee Break-Benjamin Britten Lounge & Whittle Room			

Topic	Gas and Vapour Separation - I	Membrane Formation - I	Membrane and Surface Modification - I	Inorganic Membranes - I
Session Chairs	A. Figoli & W.Q. Jin	D. Fritsch & N.B. McKeown	V. Chen & D. Bhattacharyya	J. da Costa & I.S. Metcalfe
11:30-12:00	[K01] Ceramic-supported polymer composite membranes for pervaporation W.Q. Jin, <i>Nanjing University of Technology, China</i>	[K02] Synthesis and properties of polymers of intrinsic microporosity (pims) N.B. McKeown, <i>Cardiff University, UK</i>	[K03] Responsive membranes for water treatment and green synthesis D. Bhattacharyya, <i>University of Kentucky, USA</i>	[K04] Ceramic membranes for chemical process applications I.S. Metcalfe, <i>Newcastle University, UK</i>
12:00-12:20	[OA05] Nanocomposite membrane of a polymer of intrinsic microporosity and zeolitic imidazolate frameworks for gas separation Q. Song* ¹ , E. Sivaniah ¹ , S.A. Al-Muhtaseb ² , ¹ University of Cambridge, UK, ² Qatar University, Qatar	[OB05] Self-assembled integral asymmetric block copolymer membranes: Structure formation and properties V. Abetz* ¹ , V. Filiz ¹ , S. Rangou ¹ , C. Abetz ¹ , A. Jung ¹ , K. Buhr ¹ , ¹ Helmholtz-Zentrum Geesthacht, Germany, ² Technion-Israel Institute of Technology, Israel, ³ University of Bayreuth, Germany, ⁴ Pall Europe Limited, UK, ⁵ Pall Corporation, USA	[OC05] Chemistry in spinning solutions: Hydrophilic modification of PVDF hollow fibre membranes during phase inversion N.A. Hashim* ¹ , K. Li ² , ¹ University of Malaya, Malaysia, ² Imperial College London, UK	[OD05] Ceramic hollow fibre membrane as a microreactor substrate for gas-phase catalytic reaction M. A. Rahman* ¹ , K. Li ² , A.F. Ismail ¹ , ¹ Universiti Teknologi Malaysia, Malaysia, ² Imperial College London, UK
12:20-12:40	[OA06] Novel ECTFE (Halar®) solvent resistant membranes in for pervaporation application A. Figoli* ¹ , S. Simone ¹ , S. Santoro ¹ , F. Galiano ¹ , S. Alfadel ² , O.A. Al-Harbi ² , E. Drioli ^{1,3} , ¹ CNR, Italy, ² KACST, Saudi Arabia, ³ Hanyang University, Republic of Korea	[OB06] Fabrication of thin zeolite membranes using exfoliated zeolite nanosheets K.V. Agrawal*, X. Zhang, L.F. Francis, M. Tsapatsis, <i>University of Minnesota, USA</i>	[OC06] Functionalized silica modified PVDF ultrafiltration membranes H. Wu ¹ , J. Mansouri ^{1,2} , V. Chen* ¹ , ¹ The University of New South Wales, Australia, ² Cooperative Research Centre for Polymers, Australia	[OD06] Metal oxide silica membranes for gas separation C. Yacou, S. Smart, J. da Costa*, <i>The University of Queensland, Australia</i>
12:40-13:00	[OA07] Removal of contaminants from coacervate phase by pervaporation M. Topf* ^{1,2} , T. Ingram ² , T. Mehling ² , T. Brinkmann ¹ , Smirnova ² , ¹ Helmholtz-Zentrum Geesthacht, Germany, ² Hamburg University of Technology, Germany	[OB07] Formation of polymeric porous membrane without organic solvent by thermally induced phase separation in LCST system (hydroxypropylcellulose/water) A. Hanafia*, D. Bouyer, C. Pochatv Bohatier, C. Faur, <i>Institut Européen des Membranes, France</i>	[OC07] Preparation of enantioselective membranes for optical resolution of chiral compounds P.G. Ingole*, H.C. Bajaj, K. Singh, <i>Central Salt & Marine Chemicals Research Institute, India</i>	[OD07] Alumina in inorganic membranes can pose a risk to health P. Lescoche, J. Anquetil*, <i>TAMI Industries, France</i>
13:00-14:30	Lunch & Poster Session 1- Benjamin Britten Lounge & Whittle Room			
Topic	Ultra- and Microfiltration - II	Membranes for Drinking Water Production - I	Biomedical Membrane Applications - I	Membrane Characterization - I
Session Chairs	G.M. Rios & G. Johnston-Hall	S. Luque & E. Drioli	C. Boi & R. Ghosh	P. Fievet & P. Moulin
14:30-14:50	[OA08] Challenges in the development of mf/uf membranes G. Johnston-Hall, <i>Siemens Ltd, Australia</i>	[OB08] Water recovery from waste gaseous streams: An application of hydrophobic membranes F. Macedonio, A. Brunetti, G. Barbieri, E. Drioli*, <i>The University of Calabria, Italy</i>	[OC08] Use of microporous membranes as substrate for solid-phase synthesis and purification of PEGylated proteins X. Shang, D. Yu, R. Ghosh*, <i>McMaster University, Canada</i>	[OD08] From 2D to 3D characterization of ceramic membranes J. Vicente ² , Y. Wyart ¹ , P. Moulin* ¹ , ¹ LM2P2/EPM/AMU, France, ² IUSTI, France
14:50-15:10	[OA09] Thermoresponsive ultrafiltration membranes for the switchable transport and fractionation of nanoparticles S. Frost*, M. Ulbricht, <i>Universität Duisburg-Essen, Germany</i>	[OB09] Quantifying the benefit of membrane improvement on the total water cost of drinking water production G.K. Pearce, <i>Membrane Consultancy Association, UK</i>	[OC09] Biodegradable membranes for neuronal growth and differentiation S. Morelli* ¹ , A. Piscioneri ¹ , A. Messina ^{1,3} , S. Salerno ¹ , M.B. Al-Fageeh ² , E. Drioli ^{1,3,4} , L. De Bartolo ¹ , ¹ National Research Council of Italy, Italy, ² King Abdulaziz City for Science and Technology, Saudi Arabia, ³ University of Calabria, Italy, ⁴ Hanyang University, Republic of Korea	[OD09] Infinite dilution sorption of C₇-C₁₆ n-alkanes in original and thermally rearranged PI studied by inverse gas chromatography N. Belov* ¹ , Y. Nizhegorodova ¹ , Y. Yampolskii ¹ , Y.M. Lee ² , ¹ A.V. Topchiev Institute of Petrochemical Synthesis, Russia, ² National Research Laboratory for Membranes, Republic of Korea

15:10-15:30	[OA10] Tubular nanoporous alumina membranes: Improving ceramic ultrafiltration membranes K.P. Lee*, D. Mattia, <i>University of Bath, UK</i>	[OB10] An economic alternative to pressure recovery systems in sustainable, small-scale reverse osmosis desalination plants A. Kroiss*, M. Spinnler, T. Sattelmayer, <i>Technische Universität München, Germany</i>	[OC10] Novel highly biocompatible hollow fiber membrane for plasma filtration A. Boschetti-de-Fierro*, M. Hornung, H. Lebsanft, R. Dietrich, B. Krause, <i>Gambro Dialysatoren GmbH, Germany</i>	[OD10] Electrokinetic characterization of hollow fibers by streaming current, streaming potential and electric conductance Y. Lanteri ⁵ , P. Fievet* ¹ , S. Deon ¹ , P.Sauvade ² , A. Szymczyk ^{3,4} , ¹ Université de Franche-Comté, France, ² Degremont Technologie, France, ³ Université Européenne de Bretagne, France, ⁴ Université de Rennes 1, France, ⁵ Institut Européen des Membranes, France
15:30-15:50	[OA11] Numerical and experimental study of fouling in microfluidic channels and microfiltration membranes Q. Derekx ^{1,2} , P. Bacchin ¹ , D. Veyret ² , K. Glucina ³ , P. Moulin* ¹ , ¹ Université Paul Sabatier, France, ² CNRS, France, ³ CIRSEE, France	[OB11] Removal of the organic contaminants β-estradiol and saxitoxins (STX, NEO-STX AND dc-STX) by nanofiltration: Bench scale evaluation C.C.S. Brandão* ¹ , F.F. Amorim ¹ , ¹ University of Brasilia, Brazil, ² Petrobras, Brazil	[OC11] Towards robust parvo virus filtration processes: Influence of pre-filtration, membrane structure, membrane surface properties and mode of operation B. Hansmann*, J. Hosch, W. Requate, H. Hennig, V. Thom, <i>Sartorius Stedim Biotech GmbH, Germany</i>	[OD11] Modelling of gas permeation based on the morphology of a natural polymer material C. Brazinha* ¹ , A.P. Fonseca ¹ , H. Pereira ² , O.M.N.D. Teodoro ¹ , J.G.C.Crespo ¹ , ¹ Universidade Nova de Lisboa, Portugal, ² Universidade Técnica de Lisboa, Portugal
15:50-16:20	Coffee Break- Benjamin Britten Lounge & Whittle Room			
Topic	Mixed Matrix Membranes and Carbon Membranes - I	EMS & NAMS Session: Systems Membranes without Frontiers	Modelling - II	Waste Water Treatment and Membrane Fouling - I
Session Chairs	A.F. Ismail & B. Deng	I.C. Escobar & M. Barboiu	J. Sanchez & G. De Luca	B. Van der Bruggen & G. Leslie
16:20-16:40	[OA12] Fabrication of a novel thin-film nanocomposite membrane containing MCM-41 silica nanoparticles for water purification J. Yin, E.S. Kim, B. Deng*, J. Yang, <i>University of Missouri, USA</i>	[OB12] Imidazole I-quartet water and proton dipolar channels M. Barboiu, <i>Institut Européen des Membranes, France</i>	[OC12] Rejection of low molecular weight solutes by mean of cnts: A quantum mechanics and atomistic study G. De Luca* ^{1,2} , F. Bisignano ^{1,2} , V.G. Mavrantzas ³ , E. Karahaliou ³ , G. Voyiatzis ³ , J. Hoinkis ⁴ , A. Figoli ¹ , ¹ CNR, Italy, ² UNICAL, Italy, ³ Foundation for Research and Technology, Greece, ⁴ Karlsruhe University of Applied Sciences, Germany	[OD12] Ageing of polymeric membranes in water and wastewater treatment G. Leslie*, A. Antony, P. Le Clech, <i>University of New South Wales, Australia</i>
16:40-17:00	[OA13] MOF-polymer mixed matrix membranes for ethylene/ethane separation J. Ploegmakers*, S. Japip, K. Nijmeijer, <i>University of Twente, The Netherlands</i>	[OB13] Block copolymer membrane self-assembly - from lab to fab: Dream or reality? K.V. Peinemann, <i>King Abdullah University of Science and Technology, Saudi Arabia</i>	[OC13] Electrokinetic effects on hindered diffusion in slit pores S. Manaratha, P. Dechadilok*, <i>Chulalongkorn University, Thailand</i>	[OD13] Experimental and numerical investigation of air scouring inside flat sheet membrane modules L. Böhm*, H. Prieske, M. Kraume, <i>Technische Universität Berlin, Germany</i>
17:00-17:20	[OA14] Gas permeation through PDMS membranes covered by 1 or 3 nm thick carbon nanomembranes (CNMs) M. Ai* ¹ , S. Shishatskiy ² , J. Wind ² , A. Beyer ¹ , J. Qiu ³ , A.Gözlhäuser ¹ , ¹ Bielefeld University, Germany, ² Helmholtz-Zentrum Geesthacht, Germany, ³ DSM, The Netherlands	[OB14] Dynamic interactive membranes with pressure-driven tunable porosity and self-repairing ability D. Quemener* ¹ , P. Tyagi ¹ , A. Deratani ¹ , D. Bouyer ¹ , D. Cot ¹ , M.Barboiu ¹ , ¹ Université Montpellier 2, France, ² Université d'Aix Marseille I, II et III, France	[OC14] New membrane device for in vitro VOC toxicity tests: Experimental and modelling study A. Stoian ¹ , S. Druon-Bocquet* ¹ , H. Groux ² , J. Sanchez ¹ , ¹ Institut Européen des Membranes, France, ² Immunosearch, France	[OD14] Direct role of transparent exopolymeric particles (TEP) on membrane fouling of micro- and ultrafiltration V. Discart, M.R. Bilad*, D. Vandamme, I. Foubert, K. Muylaert, I.F.J. Vankelecom, <i>KU Leuven, Belgium</i>
17:20-17:40	[OA15] Modeling of transport and separation in mixed matrix membranes A.J. Petsi, V.N. Burganos*, <i>ICE, Greece</i>	[OB15] Novel charged and hydrophilized polybenzimidazole (PBI) nanofiltration membranes M.F. Flanagan, I.C. Escobar*, <i>The University of Toledo, USA</i>	[OC15] Numerical modeling of a solid oxide membrane reactor for intermediate temperature solid oxide electrolysis for hydrogen production M. Dumortier* ^{1,3} , J. Sanchez ¹ , M. Keddam ² , H. Takenouti ² , O. Lacroix ³ , ¹ Institut Européen des Membranes, France, ² CNRS, France, ³ AREVA NP, France	[OD15] Hydraulic biofilm resistance C. Dreszer* ^{1,2} , J.S. Vrouwenvelder ^{3,4} , A.H. Paulitsch-Fuchs ¹ , A. Zwijnenburg ¹ , J.C. Kruithof ¹ , H.C. Flemming ² , ¹ Wetsus, The Netherlands, ² University Duisburg-Essen, Germany, ³ Delft University of Technology, The Netherlands, ⁴ King Abdullah University of Science and Technology, Saudi Arabia

17:40-18:00	[OA16] Alternative PES UF membrane by incorporating TiO₂ nanoparticles: More sustainable production combined with less fouling K. De Sitter* ¹ , C. Dotremont ¹ , L. Stoops ¹ , J. Kochan ² , I. Genné ¹ , ¹ Flemish Institute for Technological Research, Belgium, ² RWTH Aachen University, Germany	[OB16] Magnetically responsive membranes Q. Yang ¹ , H.H. Himstedt ² , X. Qian ¹ , M. Ulbricht ³ , S.R. Wickramasinghe* ¹ , ¹ University of Arkansas, USA, ² Colorado State University, USA, ³ Universität Duisburg-Essen, Germany	[OC16] Ion association effects in partitioning and transport of salt in NF and RO V. Freger, <i>Technion - Israel Institute of Technology, Israel</i>	[OD16] Combination of pre-treatments, membrane bioreactor and forward osmosis for a less fouled valorisation of olive mill wastewater A.Y. Gebreyohannes* ^{1,2} , R. Mazzei ¹ , E. Curcio ^{1,2} , E. Drioli ¹ , L. Giorno ¹ , ¹ CNR, Italy, ² University of Calabria, Italy
18:00-18:20	[OA17] Preparation and characterisation of β-cyclodextrin polyurethane/polysulfone mixed matrix membranes F.V. Adams* ¹ , E.N. Nxumalo ¹ , R.W. Krause ¹ , E.M.V. Hoek ² , B.B. Mamba ¹ , ¹ University of Johannesburg, South Africa, ² University of California, USA	[OB17] Dramatic electroosmotic flow through gated carbon nanotube membranes as protein mimetic chemical pumps B.J. Hinds*, J. Wu, <i>University of Kentucky, USA</i>	[OC17] Modelling fluid flow in nanoporous membrane materials via non-equilibrium Molecular Dynamics H. Frentrup* ¹ , C. Avendaño ² , M. Horsch ³ , E.A. Müller ¹ , ¹ Imperial College London, UK, ² Cornell University, USA, ³ Technische Universität Kaiserslautern, Germany	[OD17] Development of multibarrier systems consisting of nano-enhanced membranes and UV-LEDs for water purification applications V. Keuter*, I. Gehrke, <i>Fraunhofer Institute UMSICHT, Germany</i>
18:30-20:30	EMS Ceremony/Reception - Fleming Room/Benjamin Britten Lounge			
Tuesday 25th September 2012				
8:30-9:15	[Plen2] Are MOF membranes better than those made of zeolites? J. Caro, <i>Leibniz University Hannover, Germany</i> Chaired by: M. Wessling, Fleming Room			
Location	Fleming Room	Westminster Suite	St James Suite	Abbey Room
Topic	Ultra- and Microfiltration - III	Membranes for Drinking Water Production-II	Modelling - III	Membranes for Biorefinery Applications - II
Session Chairs	K. Schroen & M. Rabiller-Baudry	M. Khayet & Y.M. Lee	A. Szymczyk & A. Kovalenko	S.R. Wickramasinghe & B.J. Hinds
9:20-9:40	[OA18] Cleanability versus limiting and critical fluxes of a polyethersulfone membrane of skim milk ultrafiltration N.W. Diagne, M. Rabiller-Baudry*, <i>Université Rennes 1, France</i>	[OB18] High virus retention mediated by zirconia microtubes with tailored porosity S. Kroll*, M.O.C. de Moura, F. Meder, K. Rezwan, <i>University of Bremen, Germany</i>	[OC18] Statistical-mechanical, molecular theory of boundary conditions for liquid flow at nanostructured surfaces and in confined geometries A. Kovalenko ^{1,2} , ¹ National Institute for Nanotechnology, Canada, ² University of Alberta, Canada	[OD18] Development of thin film composite ptmsp-silica membranes and their application in the in situ pervaporative recovery of bio-alcohols P. Vandezande* ¹ , S. Claes ^{1,2} , W. Van Hecke ¹ , M. Dubreuil ¹ , C. Dotremont ¹ , H. De Wever ¹ , ¹ Flemish Institute for Technological Research, Belgium, ² Xios Hogeschool, Belgium
9:40-10:00	[OA19] Capital investment and operating costs reduction of water ultrafiltration plants by enlarging the membrane modules size O. Lorain*, I. Duchemin, F. Saux, J.M. Espenan, <i>POLYMEM, France</i>	[OB19] Determination of pressure and velocity in a dead-end inside-out membrane module used in drinking water production G. Cano* ¹ , Y. Wyart ¹ , J.V. Daurelle ³ , K. Glucina ² , D. Bourdiol ⁴ , P. Moulin ¹ , ¹ LM2P2/EPM/AMU, France, ² SUEZ, France, ³ IUSTI, France, ⁴ Aquasource, France	[OC19] Development of the membrane transport model for PEMFC simulations L.V. Karpenko-Jereb* ¹ , P. Innerwinkler ¹ , A-M. Kelterer ¹ , C. Fink ² , P. Prenninger ² , R. Tatschl ² , ¹ Graz University of Technology, Austria, ² AVL List GmbH, Austria	[OD19] Bio alcohol concentration by pervaporation with organophilic zeolite membranes – influence of protective coatings on fouling tendency M. Weyd*, H. Richter, O. Troeber, T. Hoyer, I. Voigt, <i>Fraunhofer IKTS, Germany</i>
10:00-10:20	[OA20] Particle migration resulting in options for improved membrane microfiltration A. van Dinther, K. Schroen*, R. Boom, <i>Wageningen University, The Netherlands</i>	[OB20] Quantitative measurement and visualization of biofilm O₂ consumption rates in membrane filtration systems J.S. Vrouwenvelder* ^{1,2} , E.I.E.C. Prest ^{1,3} , M. Kuhl ^{4,5} , M.C.M. van Loosdrecht ¹ , M. Staal ^{2,4} , ¹ Delft University of Technology, The Netherlands, ² KAUST, Saudi Arabia, ³ Wetsus, The Netherlands, ⁴ University of Copenhagen, Denmark, ⁵ University of Technology Sydney, Australia	[OC20] Experimental and numerical investigations of the power input in a standard geometry membrane reactor (MR) system E. Lyagin* ¹ , T. Eppinger ¹ , T. Grollich ¹ , A. Drews ² , M. Kraume ¹ , ¹ TU Berlin, Germany, ² HTW Berlin, Germany	[OD20] Detoxification of iomass hydrolysates D.L. Grzenia ¹ , R.W. Dong ¹ , M.J. Kipper ² , X. Qian ¹ , S.R. Wickramasinghe* ¹ , ¹ University of Arkansas, USA, ² Colorado State University, USA

10:20-10:40	[OA21] Ultrafiltration of dilute macromolecular solutions: Fouling mode and fouling rate determination X. Shi*, N.P. Hankins, R.W. Field, <i>University of Oxford, UK</i>	[OB21] Fabrication and characterization of electro-spun nano-fibrous membranes for desalination by membrane distillation M. Essalhi*, M. Khayet, <i>University Complutense of Madrid, Spain</i>	[OC21] Improved model for solvent permeation through NF and UF membranes P. Marchetti* ^{1,2} , A. Butté ¹ , A.G. Livingston ² , ¹ <i>Lonza AG, Switzerland</i> , ² <i>Imperial College London, UK</i>	[OD21] CO₂ capture by enzymatic bioconversion in a membrane contactor with task specific ionic liquids L.A. Neves* ¹ , C.A.M. Afonso ² , I.M. Coelho ¹ , J.G. Crespo ¹ , ¹ <i>Universidade Nova de Lisboa, Portugal</i> , ² <i>Universidade de Lisboa, Portugal</i>
10:40-11:10	Coffee Break- Benjamin Britten Lounge & Whittle Room			
Topic	Special Session Dedicated to Enrico Drioli	Organic Solvent Nanofiltration - I	Fuel Cells/Batteries, Electromembrane Processes	Waste Water Treatment and Membrane Fouling - II
Session Chairs	L. Giorno & G. Barbieri	D. Quemener & F.P. Cuperus	N.H. Menzler & G. Pourcelly	C. Y. Tang & T. Leiknes
11:10-11:30	[OA22] Practical applications of ion-exchange membranes and recent developments H. Strathmann*, A. Grabowski, G. Eigenberger, <i>Universitaet Stuttgart, Germany</i>	[OB22] Upgrading components from organic solvent systems using NF membranes F.P. Cuperus*, I.M. Wienk, <i>SolSep BV, The Netherlands</i>	[OC22] Electrochemical study of ion transfer in ion-exchange membrane systems: Experiments and interpretation G. Pourcelly* ¹ , P. Sizat ¹ , E.D. Belashova ^{1,2} , V.V. Nikonenko ² , N.D. Pismenskaya ² , M.K. Urtenov ² , ¹ <i>University Montpellier 2, France</i> , ² <i>Kuban State University, Russia</i>	[OD22] Comparing biofouling properties in activated sludge and biofilm MBRs using confocal laser scanning microscopy (CLSM) T. Leiknes* ¹ , C. Sun ¹ , H. Krajinski ² , ¹ <i>NTNU, Norway</i> , ² <i>University of Duisburg-Essen, Germany</i>
11:30-11:50	[OA23] Novel membrane bioreactors: Based on membrane distillation and forward osmosis A.G. Fane, <i>Nanyang Technological University, Singapore</i>	[OB23] The effect of concentration polarisation on organic solvent nanofiltration crystallisation processes J. Campbell*, A.G. Livingston, <i>Imperial College, UK</i>	[OC23] Membrane capacitive deionization: An economical alternative for water desalination? C. Huyskens* ^{1,2} , J. Helsen ² , ¹ <i>ISPT, The Netherlands</i> , ² <i>VITO, Belgium</i>	[OD23] Development of novel acoustic sensor for early detection of biofouling in reverse-osmosis systems S.T.V. Sim* ¹ , S.R. Suwarno ¹ , Y.X.S. Lim ² , W.X.J. Lim ² , T.H. Chong ¹ , A.G. Fane ¹ , ¹ <i>Nanyang Technological University, Singapore</i> , ² <i>Hwa Chong Institution, Singapore</i>
11:50-12:10	[OA24] Importance of nano ion channels formation in Polymer Electrolyte Membranes (PEMs) for fuel cell S.Y. Lee ¹ , D.W. Shin ¹ , C.H. Lee ² , Y.M. Lee* ¹ , ¹ <i>Hanyang University, Republic of Korea</i> , ² <i>Uiduk University, Republic of Korea</i>	[OB24] Two new preparations for organophilic nanofiltration membranes based on photo-crosslinked polyimide S. Behnke*, M. Ulbricht, <i>Universität Duisburg-Essen, Germany</i>	[OC24] Electroosmosis pumping in nanoporous alumina membranes H. Leese*, D. Mattia, <i>University of Bath, UK</i>	[OD24] Oxidative cleaning of reverse osmosis membrane used in the steel industry wastewater reclamation H. Li*, P. Yu, Y. Luo, <i>Wuhan University, China</i>
12:10-12:30	[OA25] Membranes and nanotechnologies: I love you, me neither P. Aimar, <i>University of Toulouse and CNRS, France</i>	[OB25] New membranes for organic solvent nanofiltration S. Dutczak* ¹ , M. Luiten-Olieman ¹ , H.J. Zwijnenberg ¹ , C.R. Tanardi ¹ , K.K. Kopec ¹ , L.A.M. Bolhuis-Versteeg ¹ , ¹ <i>University of Twente, The Netherlands</i> , ² <i>SolSep B.V. Robust Membrane Technologies, The Netherlands</i>	[OC25] Status of solid oxide fuel cell development at Forschungszentrum Jülich N.H. Menzler* ¹ , L. Blum ¹ , H.P. Buchkremer ¹ , S.M. Groß ¹ , L.G.J. de Haart ¹ , J. Malzbender ¹ , R. Mücke ¹ , W.J. Quadackers ¹ , M. Peksen ¹ , R. Peters ¹ , J. Remmel ¹ , R. Steinberger-Wilckens ^{1,2} , F.Tietz ¹ , S. Uhlenbruck ¹ , R. Vaßen ¹ , ¹ <i>Forschungszentrum Jülich, Germany</i> , ² <i>University of Birmingham, UK</i>	[OD25] PVDF hollow fibre membranes with interconnected bicontinuous structures produced via immersion precipitation technique M.R. Moghareh Abed* ¹ , S.C. Kumbharkar ¹ , A.M. Groth ² , K. Li ¹ , ¹ <i>Imperial College London, UK</i> , ² <i>Siemens Water Technologies, Australia</i>
12:30-12:50	[OA26] Integrated membrane separations for recycling of valuable waste streams: Visionary suggestions from Enrico Drioli revisited B. Van der Bruggen, <i>KU Leuven, Belgium</i>	[OB26] Innovative composite membranes for organic solvent nanofiltration E. Fontanovova*, F. Artusa, E. Drioli, G. Di Profio, <i>CNR, Italy</i>	[OC26] Microscale electrodialysis: Concentration profiling and vortex visualization R. Kwak*, J. Han, <i>Massachusetts Institute of Technology, USA</i>	[OD26] Modelling the long-term evolution of permeability in a full-scale municipal MBR: A multivariate statistical modelling approach N. Philippe* ¹ , Y. Racault ¹ , A.E. Stricker ¹ , M. Spérandio ² , P.A. Vanrolleghem ³ , ¹ <i>Irstea, France</i> , ² <i>Université de Toulouse, France</i> , ³ <i>Université Laval, Canada</i>

12:50-13:10	[OA27] Mastering membranes to command functions L. Giorno*, E. Curcio, E. Drioli, <i>University of Calabria, Italy</i>	[OB27] Organic solvent nanofiltration thin film composite (TFC) membranes by interfacial polymerisation M.F. Jimenez Solomon*, Y. Bhole, A.G. Livingston, <i>Imperial College London, UK</i>	[OC27] Bipolar membranes with layer-by-layer-assembled catalytic polyelectrolyte multilayers S. Abdu*, K. Sricharoen, J.E. Wong, T. Melin, M. Wessling, <i>RWTH Aachen University, Germany</i>	[OD27] Antibacterial efficiency of a composite spacer containing zinc oxide nanoparticles A. Ronen*, R. Semiat, C.G. Dosoretz, <i>Technion, Israel</i>
13:10-14:10	Lunch- Benjamin Britten Lounge & Whittle Room			
Topic	Mixed Matrix Membranes and Carbon Membranes - II	Forward Osmosis	Membranes for Energy Generation and CO₂ Capture - I	Nanofiltration and Reverse Osmosis - I
Session Chairs	K.V. Peineman & E.M.V. Hoek	R.W. Field & R. Wang	P. Izak & K. Nijmeijer	A.G. Fane & W.S. Winston Ho
14:10-14:40	[K05] Shaping the future of water treatment through the union of nanoparticles, polymers and membranes E.M.V.Hoek, <i>University of California, USA</i>	[K06] Advances in forward osmosis and pressure retarded osmosis membranes R. Wang*, C. Tang, T. Fane, <i>Nanyang Technological University, Singapore</i>	[K07] Design strategies for polymer membranes for blue energy K. Nijmeijer* ¹ , E. Guler ^{1,2} , D. Vermaas ^{1,2} , M. Saakes ² , ¹ University of Twente, The Netherlands, ² Centre of Excellence for Sustainable Water Technology, The Netherlands	[K08] High-flux reverse osmosis membranes for brackish water desalination W.S. Winston Ho*, L. Zhao, C.Y. Chang, <i>The Ohio State University, USA</i>
14:40-15:00	[OA28] Use of mixed matrix membranes for covalent binding /cross linking of the enzyme β-galactosidase Y. Satyawali, P. Jochems, S. Van Roy, W. Doyen, W. Dejonghe, C.Dotremont*, <i>Vito, Belgium</i>	[OB28] Polyelectrolytes-promoted forward osmosis processes Q.C. Ge ¹ , M.M. Ling ¹ , G. Amy ¹ , T.S. Chung* ¹ , ¹ National University of Singapore, Singapore, ² King Abdullah University of Science and Technology, Saudi Arabia	[OC28] Hybrid membrane cryogenic process for post-combustion CO₂ capture B. Belaissaoui* ¹ , Y. Le Moulec ² , D. Willson ³ , E. Favre ¹ , ¹ Nancy Université, France, ² EDF R&D, Chatou, France, ³ Stanbridge Capital, USA	[OD28] Novel robust rano-filtration membranes based on composites of selective films from multifunctional polyarysulphones with high chemical stability M.V. Brami* ^{1,2} , R. Eliash ² , C. Linder ¹ , Y. Oren ¹ , ¹ Ben Gurion University of the Negev, Israel, ² MDC Membrane Development Company Ltd., Israel
15:00-15:20	[OA29] Hybrid organic-inorganic membranes for organic solvent nanofiltration P. Gorgojo*, H. Siddique, A.G. Livingston, <i>Imperial College London, UK</i>	[OB29] Cellulose acetate forward osmosis membranes - effect of membrane chemistry on FO performance R.Z. Kochanov*, M. Sairam, A.G. Livingston, <i>Imperial College London, UK</i>	[OC29] Ultra-permeable, CO₂-selective membranes for hydrogen purification and the effect of carbon monoxide (CO) on its gas separation performance H.Z. Chen*, T.S. Chung, <i>National University of Singapore, Singapore</i>	[OD29] Effect of pH and salt concentration on the nanofiltration of glycine and triglycine M. Civit*, X. Fragua, A.R. Guastalli, J. Labanda, J. Llorens, <i>University of Barcelona, Spain</i>
15:20-15:40	[OA30] Tailored nanocomposite conductive scaffolds:Carbon nanotubes and adaptive polymers interplay A. Gugliuzza* ¹ , A.N. Koto ² , ¹ CNR, Italy, ² University of Michigan, USA	[OB30] Nanofiber composite forward osmosis membrane for high water production rate X.X. Song*, Z. Liu, S. Sun, <i>Nanyang Technological University, Singapore</i>	[OC30] Porous membrane-catalytic systems as effective ensemble of nano-reactors for hydrogen containing gas production from biomass products and industrial organic wastes A. Fedotov*, M. Tsodikov, K. Golubev, V. Uvarov, A. Demin, U. Zaykov, <i>Russian Academy of Sciences, Russia</i>	[OD30] Microbial and chemical compositional changes in RO membrane fouling layers at a full scale desalination plant at the red sea coast M.T. Khan, C.L. Manes, C. Aubry, J.P. Croue*, <i>King Abdullah University of Science and Technology, Saudi Arabia</i>
15:40-16:00	[OA31] Characterization of the gas transport in mixed matrix membranes based on polymers with intrinsic microporosity (PIMs) J.C. Jansen ¹ , P. Bernardo* ¹ , F. Bazzarelli ¹ , G. Clarizia ¹ , P.M. Budd ² , Y. Yampolskii ³ , ¹ CNR, Italy, ² University of Manchester, UK, ³ A.V. Topchiev Institute of Petrochemical Synthesis, Russia	[OB31] Analysis of forward osmosis: Is it overhyped? R.W. Field* ¹ , J.J. Wu ² , ¹ University of Oxford, UK, ² Durham University, UK	[OC31] The effective upgrading of raw biogas to methane by selective membranes P. Izak* ¹ , M. Kárászová ¹ , J. Vejrazka ¹ , K. Friess ² , A. Randová ² , J.C. Jansen ³ , ¹ Institute of Chemical Process Fundamentals of the AS CR, Czech Republic, ² Institute of Chemical Technology in Prague, Czech Republic, ³ University of Calabria, Italy	[OD31] Bio-inspired enhancement of membrane desalination A.G. Fane* ¹ , R. Wang ¹ , C.Y. Tang ¹ , C. Helix Nielsen ² , S. Rice ¹ , T.H. Chong ¹ , ¹ Nanyang Technological University, Singapore, ² Aquaporin A/S, Denmark

16:00-16:20	[OA32] Metal organic framework containing mixed matrix membranes for gas separation: A different approach to mmm preparation methods A. Kertik*, A. Khan, I. Vankelecom, <i>KU Leuven, Belgium</i>	[OB32] Comparison of NF-like and RO-like thin film composite forward osmosis membranes in osmotically driven membrane processes J. Wei ^{1,2} , C.Y. Tang ^{1,2} , C. Qiu ^{1,2} , Y. Wang ^{1,2} , R. Wang ^{1,2} , ¹ <i>Nanyang Technological University, Singapore</i> , ² <i>Singapore Membrane Technology Centre, Singapore</i>	[OC32] Report on pilot scale testing and further development of a facilitated transport membrane for CO₂ capture from power plants M.B. Hägg ^{*1} , M. Sandru ² , T.J. Kim ² , W. Capala ³ , M. Huijbers ⁴ , ¹ <i>Norwegian University of Science and Technology, Norway</i> , ² <i>Sintef Materials and Chemistry, Norway</i> , ³ <i>ICHP Research Institute, Poland</i> , ⁴ <i>KEMA, The Netherlands</i>	[OD32] Role of the ionic composition on the mass transfer of saccharides through NF membrane: Assessment of the dehydration assumption V. Boy ^{1,2} , H. Roux-de Balman ^{1,2} , S. Galier ^{*1,2} , ¹ <i>Université de Toulouse, France</i> , ² <i>CNRS, France</i>
16:20-16:40	[OA33] Ceramic supported composite membranes of hydroxy ethyl cellulose loaded with AL-MCM-41 for CO₂ separation C.D. Madhusoodana ^{*1} , M.B. Patil ² , T.M. Aminabhavi ² , ¹ <i>Bharat Heavy Electricals Limited, India</i> , ² <i>Karnataka University, India</i>	[OB33] Removal mechanisms of trace organic contaminants in osmotically driven membrane process M. Xie*, L.D. Nghiem, W.E. Price, <i>University of Wollongong, Australia</i>	[OC33] Preparation and characterisation of a robust and hydrophobic ceramic membrane contactor via an improved surface grafting technique for CO₂ capture at flue gas temperatures S. Wei ^{*1,2} , B. Shao ¹ , N. Hor ¹ , K. Li ¹ , ¹ <i>Imperial College London, UK</i> , ² <i>CSIRO, Australia</i>	[OD33] Progress of RO membrane technology based on scientific research for seawater and brackish water desalination M. Kimura*, K. Nakatsuji, T. Sasaki, M. Henmi, <i>Toray Industries, Inc., Japan</i>
16:40-18:40	Coffee & Poster Session 2- Benjamin Britten Lounge & Whittle Room			
Wednesday 26th September 2012				
8:30-9:15	[Plen3] Recent progress in thermally rearranged polymer membranes , Y.M. Lee, <i>Hanyang University, Republic of Korea</i> Chaired by: B. Freeman, Fleming Room			
Location	Fleming Room	Westminster Suite	St James Suite	Abbey Room
Topic	Gas and Vapour Separation - II	Membrane Bioreactors	Membrane and Surface Modification - II	Waste Water Treatment and Membrane Fouling - III
Session Chairs	S. Shilton & G.C. Sarti	V.V. Volkov & L.F. Liu	M. Ulbricht & W. Kujawski	A. Kemperman & H. Strathmann
9:20-9:40	[OA34] Predictive calculations of the solubility of gases and vapours in glassy polymers: An overview G.C. Sarti, <i>University of Bologna, Italy</i>	[OB34] Membrane bioreactor coupled with microbial fuel cell for enhancing treatment efficiency and reducing energy consumption J.D. Liu, L.F. Liu*, B. Gao, F.L. Yang, <i>Dalian University of Technology, China</i>	[OC34] Transport and selective properties of surface grafted ceramic membranes in air-gap and direct-contact membrane distillation process J. Kujawa ¹ , W. Kujawski ^{*1} , S. Cernaeux ² , K. Jarzynka ¹ , M. Persin ² , A. Larbot ² , ¹ <i>NCU, Poland</i> , ² <i>European Membrane Institute, France</i>	[OD34] Relating reverse and forward solute diffusion to membrane fouling in forward osmosis and pressure retarded osmosis Q.H. She*, X. Jin, Q.H. Li, C.Y. Tang, <i>Nanyang Technological University, Singapore</i>
9:40-10:00	[OA35] Intrinsic microporosity polymers (tb-pims) membrane of new generation: Molecular modelling and permeation properties E. Tocci ¹ , L. De Lorenzo ^{*1} , J.C. Jansen ¹ , P. Bernardo ¹ , F. Bazzarelli ¹ , N.B. McKeown ² , ¹ <i>CNR, Italy</i> , ² <i>Cardiff University, UK</i>	[OB35] Influence of the temperature in the permeate flux of the membrane in a membrane bioreactor with moving bed biofilm reactor J. Martín-Pascual*, F.A. Rodríguez, P. Reboleiro-Rivas, J. González-López, E. Hontoria, J.M. Poyatos, <i>University of Granada, Spain</i>	[OC35] Photocatalytic membranes for the treatment of refractory organic pollutants M. Hataat-Fraile, J. Mendret*, M. Rivallin, S. Brosillon, <i>European Membrane Institute, France</i>	[OD35] Investigations of cake fouling during the cross-flow microfiltration of a model suspension: Influence of buoyancy on deposition and shear-induced removal W.J.T. Lewis*, R.M.J. Chance, M.C. Wilcox, Y.M.J. Chew, M.R. Bird, <i>University of Bath, UK</i>
10:00-10:20	[OA36] Techno-economic analysis of a membrane supported CO removal process for Argon recovery T. Harlacher*, T. Melin, M. Wessling, <i>RWTH Aachen University, Germany</i>	[OB36] Thermopervaporation membrane bioreactor as a new concept for the low-cost production of biobutanol V.V. Volkov*, I.L. Borisov, <i>RAS, Russia</i>	[OC36] Macroinitiator mediated photoreactive coating of membrane surfaces with antifouling hydrogel layers J. Lei ¹ , V. Freger ² , M. Ulbricht ^{*1} , ¹ <i>Universität Duisburg-Essen, Germany</i> , ² <i>Technion, Israel</i>	[OD36] Going from a critical flux concept to a threshold flux concept on membrane processes treating olive mill wastewater streams M. Stoller ^{*1} , J.M. Ochando-Pulido ² , ¹ <i>University of Rome "La Sapienza", Italy</i> , ² <i>University of Granada, Spain</i>

10:20-10:40	[OA37] Hybrid fixed-site-carrier membranes for CO₂/CH₄ separation X. He*, M.B. Hägg, <i>Norwegian University of Science and Technology, Norway</i>	[OB37] Improvement of the performance of membrane filtration in MBRs by using downstream configuration M. Remy*, S. Vellinga ¹ , H. Van Dalfsen ² , J. Kruit ¹ , E. Koetse ³ , N. Wortel ³ , ¹ <i>Paques BV, The Netherlands</i> , ² <i>Berghof MT, Germany</i> , ³ <i>Pharmafilter, The Netherlands</i>	[OC37] Catalytic microfiltration membranes with Fe/Ni bimetallic nanoparticles for the reductive degradation of azo dyes in water K. Sikhwihilu*, D.V. Kama, R.M. Moutloali, <i>Mintek, South Africa</i>	[OD37] Benign foulant control in crossflow ultrafiltration by intermittent filtration and relaxation: The effect of foulant type A.H. Taheri*, S.T.V. Sim ¹ , L.N. Sim ¹ , T.H. Chong ¹ , W.B. Krantz ^{1,2} , A.G. Fane ¹ , ¹ <i>Nanyang Technological University, Singapore</i> , ² <i>University of Colorado, USA</i>
10:40-11:00	[OA38] PVC hollow fibre membrane development with a focus on ozone based applications C.A. Jones*, V.M. Magueijo ¹ , S.A. Gordeyev ¹ , S.J. Shilton ¹ , ¹ <i>University of Strathclyde, UK</i> , ² <i>Institute of Nanotechnology, UK</i>	[OB38] Effect of chemical treatment on (Bio)fouling formation in a lab-scale membrane bioreactor (MBR) A. Piasecka*, C. Souffreau, R. Bilad, I. Vankelecom, <i>Katholieke Universiteit Leuven, Belgium</i>	[OC38] Super hydrophobic PES membrane and its application in biomedical industry E. Wuenn ¹ , J. Hosch ¹ , S. Li ² , I. Schaap ² , T. Schleuss*, ¹ <i>Sartorius-Stedim Biotech, Germany</i> , ² <i>University of Göttingen, Germany</i>	[OD38] Influence of feed spacer geometries on air/water cleaning in spiral wound membrane elements Y. Wibisono*, E.R. Cornelissen ³ , A.J.B. Kemperman ² , D.C. Nijmeijer ² , W.G.J. van der Meer ⁴ , ¹ <i>Wetsus, The Netherlands</i> , ² <i>University of Twente, The Netherlands</i> , ³ <i>KWR Watercycle Research Institute, The Netherlands</i> , ⁴ <i>Delft University of Technology, The Netherlands</i>
11:00-11:30	Coffee Break- Benjamin Britten Lounge & Whittle Room			
Topic	Mixed Matrix Membranes and Carbon Membranes - III	Membrane Contactors and Multifunctional Reactors - II	Biomedical Membrane Applications - II	Membrane Characterization - II
Session Chairs	D.A. Patterson & T. Schäfer	G. Jonsson & M. Menendez	L. De Bartolo & D. Stamatialis	A. Szymczyk & S. Kentish
11:30-11:50	[OA39] Mixed matrix polysulfone hollow fibres filled with polymer and carbon xerogels for gas separation V.M. Magueijo*, L.G. Anderson, A.J. Fletcher, S.J. Shilton, <i>University of Strathclyde, UK</i>	[OB39] Catalytic propane dehydrogenation in a two zone fluidized bed reactor with hollow fibre palladium membrane J.A. Medrano ¹ , I. Julian ¹ , F.R. Garcia-Garcia ² , K. Li ² , J. Herguido ¹ , M. Menendez*, ¹ <i>University of Zaragoza, Spain</i> , ² <i>Imperial College London, UK</i>	[OC39] Novel concept for artificial kidney: Mixed matrix membranes combining diffusion and adsorption in one step M. Tijink ¹ , M. Wester ² , J. Sun ³ , A. Saris ^{1,2} , S. Saiful ⁴ , D. Stamatialis*, ¹ <i>University of Twente, The Netherlands</i> , ² <i>University Medical Center Utrecht, The Netherlands</i> , ³ <i>Donghua University, China</i> , ⁴ <i>Syiah Kuala University, Indonesia</i> , ⁵ <i>RWTH Aachen University, Germany</i>	[OD39] A study of the water transport properties of the aromatic polyamide layer of reverse osmosis membranes S. Kentish*, J. Lee ¹ , C. Doherty ² , A. Hill ² , ¹ <i>The University of Melbourne, Australia</i> , ² <i>CSIRO, Australia</i>
11:50-12:10	[OA40] Carbon membrane derived from interfacial charged-grafted double polymer layers for gas separation X. Chen*, L. Hong ^{1,2} , ¹ <i>National University of Singapore, Singapore</i> , ² <i>Institute of Materials Research and Engineering, Singapore</i>	[OB40] Humic acids degradation by a hybrid photocatalysis - membrane process: Effect of UV-A photon dose on mineralization kinetics V.C. Sarasidis, S.I. Patsios, A.J. Karabelas*, <i>Chemical Process Engineering Research Institute, Greece</i>	[OC40] Chemo-mechanical energy conversion device with enzyme diaphragm membrane for kinetic biosensors and drug release system R. Kato, M. Munkhbayar, K. Miyajima, T. Arakawa, H. Kudo, K. Mitsubayashi*, <i>Tokyo Medical and Dental University, Japan</i>	[OD40] Characterization of mixed-matrix membranes based on block-copolymers/ionic liquids and their performance in vapour separation A. Corres*, C. Chiappe ³ , T. Schäfer ^{1,2} , ¹ <i>University of the Basque Country, Spain</i> , ² <i>Basque Foundation for Science, Spain</i> , ³ <i>University of Pisa, Italy</i>
12:10-12:30	[OA41] Towards continuous wine making: The optimization of mixed matrix membranes for wine fining D.A. Patterson*, M. Bowstead ² , A. Tran ¹ , B.J. James ¹ , ¹ <i>University of Bath, UK</i> , ² <i>University of Auckland, New Zealand</i>	[OB41] Aroma stripping under various forms of membrane distillation processes: Experiments and modeling G. Jonsson, <i>Technical University of Denmark, Denmark</i>	[OC41] Human liver organotypic membrane systems S. Salerno ¹ , S. Morelli ¹ , E. Drioli ^{1,2} , L. De Bartolo*, ¹ <i>CNR, Italy</i> , ² <i>University of Calabria, Italy</i>	[OD41] Advanced characterization of membrane materials by streaming current measurements A. Szymczyk*, Y. Ibrahim Dirir, M. Picot, I. Nicolas, F. Barrière, <i>Université de Rennes 1, France</i>
12:30-12:50	[OA42] Preparation of multiple interaction membrane chromatography using mixed matrix membrane preparation concept S.M. Saufi*, C.J. Fee ¹ , ¹ <i>Universiti Malaysia Pahang, Malaysia</i> , ² <i>University of Canterbury,</i>	[OB42] Elaboration of composite membrane for gas/liquid separation E. Lasseuguette*, J.C. Rouch ² , J.C. Remigy ¹ , ¹ <i>Université de Toulouse, France</i> , ² <i>CNRS, France</i>	[OC42] Characterization and performance of small-molecule stimulus responsive membranes with reversible gating function T. Schäfer*, V.C. Özalp ¹ , ¹ <i>University of the Basque Country, Spain</i> , ² <i>Basque Foundation for</i>	[OD42] Superimposed effects of nano-scale confinement and penetrant on behavior of ultra-thin glassy polymer membranes W. Ogieglo*, H. Wormeester, M. Wessling, N.E. Benes, <i>University of Twente, The</i>

	<i>New Zealand</i>		<i>Science, Spain</i>	<i>Netherlands</i>
12:50-13:10	[OA43] (ZIF-8)-based materials for the preparation of mixed matrix membranes S. Sorribas ^{1,2} , B. Zornoza ^{1,2} , C. Téllez ^{1,2} , J. Coronas ^{1,2} , ¹ University of Zaragoza, Spain, ² Aragón Institute of Nanoscience, Spain	[OB43] A model based on Maxwell-Stefan to evaluate membrane reactor concepts H.J. Mengers*, N.E. Benes, D.C. Nijmeijer, University of Twente, The Netherlands	[OC43] Selective separation of similarly sized proteins with tunable nanoporous block copolymer membranes X.Y. Qiu*, H.Z. Yu, K.V. Peinemann, King Abdullah University of Science and Technology, Saudi Arabia	[OD43] Retention properties of microfiltration membranes: Towards a better characterization C. Barbé*, K. Drouet, C. Robert, E. Gaudichet-Maurin, S. Logette, Veolia Environnement Recherche et Innovation, France
13:10-14:10	Lunch- Benjamin Britten Lounge & Whittle Room			
Topic	Gas and Vapour Separation - III	Organic Solvent Nanofiltration - II	Membrane Ageing	Nanofiltration and Reverse Osmosis - II
Session Chairs	J.C. Jansen & J. Balster	L. Peeva & I. Vankelecom	C. Causserand & P. Aimar	M. Mechelhoff & D. Williams
14:10-14:40	[K09] Membrane process for biogas upgrading with highly selective SEPURAN® membranes J. Balster*, M. Ungerank ¹ , T. Visser ¹ , D. Baumgarten ^{1,2} , ¹ Evonik Fibres GmbH, Austria, ² Evonik Industries AG, Germany	[K10] Recent SRNF-developments at KU Leuven I. Vankelecom, Katholieke Universiteit Leuven, Belgium	[K11] Impact of chemical cleaning of filtration membranes on their lifetime and properties P. Aimar ^{1,2} , C. Causserand ^{1,2} , ¹ Université de Toulouse, France, ² Laboratoire de Génie Chimique, France	[K12] Existing and emerging uses of nanofiltration and reverse osmosis membranes for water treatment in the oil & gas industry D. Williams, BP Exploration Operating Co Ltd, UK
14:40-15:00	[OA44] Supported ionic liquid membranes for removal of persistent organic pollutants (dioxins) P.S. Kulkarni ^{1,3} , L. Neves ¹ , I. Coelho ¹ , C.A.M. Afonso ² , J.G. Crespo ¹ , ¹ REQUIMTE, Portugal, ² iMed.UL, Portugal, ³ Ministry of Defence, India	[OB44] Thin-film polyurethane composite nanofiltration membranes C. Kuhn*, M. Ulbricht, Universität Duisburg-Essen, Germany	[OC44] Impact of membrane ageing caused by chemical cleaning on the removal of trace organic contaminants by nanofiltration A. Simon*, W.E. Price, L.D. Nghiem, University of Wollongong, Australia	[OD44] Lanxess membranes for water treatment M. Mechelhoff*, A. Sharpe, N. Hermsdorf, Lanxess Deutschland GmbH, Germany
15:00-15:20	[OA45] Interest of poly[bis(trifluoroethoxy)phosphazene] membranes for ammonia recovery – Potential application in Haber process C. Makhloufi*, B. Belaissaoui, D. Roizard, E. Favre, Lorraine University, France	[OB45] Investigation of mass transfer in organic solvent nanofiltration membranes J. Micovic*, L. Hesse, P. Schmidt, P. Lutze, G. Sadowski, A. Górak, TU Dortmund University, Germany	[OC45] Carbon dioxide sorption and plasticization of thin glassy polymer films tracked by gas permeability and optical methods N.R. Horn*, D.R. Paul, University of Texas at Austin, USA	[OD45] Osmosis-assisted cleaning of organic-fouled RO membranes: Theory and experiments G.Z. Ramon*, T.V. Nguyen ² , E.M.V. Hoek ³ , ¹ Princeton University, USA, ² Vietnam National University, Viet Nam, ³ University of California, USA
15:20-15:40	[OA46] Non equilibrium modeling of sorption of gases and vapors in polymers of intrinsic microporosity (PIM) M. Minelli ^{1,2} , K. Friess ³ , O. Vopicka ³ , V. Hynek ³ , M. Lanc ³ , M.G. De Angelis ¹ , ¹ Università di Bologna, Italy, ² CIRI-MAM, Italy, ³ Prague Institute of Chemical Technology, Czech Republic	[OB46] Interest and limitations of a nanofiltration membrane reactor in a model ring closing olefin metathesis reaction performed in toluene G. Nasser ¹ , T. Renouard*, S. Shahane ² , M. Camus ¹ , C. Fischmeister ² , M. Rabiller-Baudry ¹ , ¹ Université Rennes 1, France, ² CNRS, France	[OC46] Change in performances and structure of RO membrane after chloramination in pure water, synthetic and natural seawater T. Maugin*, L. Valentino ² , T. Renkens ² , J.P. Croué ¹ , B. Marinas ² , ¹ KAUST, Saudi Arabia, ² UIUC, USA	[OD46] High performance ordered nanoporous membranes from block copolymers N. Sanna Kotrappanavar*, P. Zavala-Rivera ¹ , Q. Song ¹ , S.A. Al-Muhtaseb ² , E. Sivaniah ¹ , ¹ University of Cambridge, UK, ² Qatar University, Qatar
15:40-16:00	[OA47] Analysis of gas and vapour transport in novel polymers of intrinsic microporosity (PIMs) J.C. Jansen*, P. Bernardo ¹ , F. Bazzarelli ¹ , N.B. McKeown ² , K. Friess ³ , Y. Yampolskii ⁴ , ¹ CNR, Italy, ² Cardiff University, UK, ³ Institute of Chemical Technology Prague, Czech Republic, ⁴ A.V. Topchiev Institute of Petrochemical Synthesis, Russia	[OB47] Potential of organic solvent nanofiltration in continuous catalytic reactions L. Peeva*, A. Livingston, Imperial College London, UK	[OC47] Hypochlorite cleaning of polyethersulfone / polyvinylpyrrolidone ultrafiltration membranes: Impact on performances B. Pellegrin ¹ , R. Prulho*, A. Rivaton ² , S. Therias ² , J.L. Gardette ² , E. Gaudichet-Maurin ³ , C. Causserand ¹ , ¹ University of Toulouse, CNRS, France, ² Clermont University, CNRS, France, ³ Veolia Environnement Recherche et Innovation, France	[OD47] Beet sugar pulp-press water treatment: A comparison of nanofiltration and reverse osmosis processes S. Gul ^{1,2} , A. El Gohary Ahmed ² , M. Harasek*, ¹ University of Engineering & Technology Peshawar, Pakistan, ² Vienna University of Technology, Austria

16:00-16:20	[OA48] Design and techno-economic evaluation of a distillation/membrane hybrid process for olefin/paraffin separation F. Pitsch*, S. Falss, M. Scholz, M. Wessling, <i>RWTH Aachen University, Germany</i>	[OB48] Solvent resistant nanofiltration based-process for production of steryl esters enriched extracts A.R.S. Teixeira*, J.L.C. Santos, J.G. Crespo, <i>Universidade Nova de Lisboa, Portugal</i>	[OC48] A new mechanistic understanding of membrane chlorination C.Y. Tang* ¹ , T.V. Do ¹ , M. Reinhard ² , J.O. Leckie ² , ¹ <i>Nanyang Technological University, Singapore</i> , ² <i>Stanford University, USA</i>	[OD48] Structural control and chemical functionalization of dual-layer nanofiltration hollow fiber membranes for efficient waste water treatment S.P. Sun*, S.Y. Chan, T.S. Chung, <i>National University of Singapore, Singapore</i>
16:20-16:40	[OA49] Retrofit with membrane the Paraffin/Olefin separation A. Motelica*, O.S.L. Bruinsma, R. Kreiter, M. den Exter, J.F. Vente, <i>Energy Research Centre of the Netherlands, The Netherlands</i>	[OB49] Development of organic solvent nanofiltration membranes for the application in extreme pH conditions I.B. Valtcheva*, S.C. Kumbharkar, J.F. Kim, L.G. Peeva, A.G. Livingston, <i>Imperial College London, UK</i>	[OC49] Effects of chloraminated seawater on the SW30HR reverse osmosis membrane L. Valentino* ¹ , T. Renkens ¹ , T. Maugin ² , J.P. Croue ² , S. Logette ³ , E. Gaudichet-Maurin ³ , ¹ <i>University of Illinois Urbana-Champaign, USA</i> , ² <i>King Abdullah University of Science and Technology, Saudi Arabia</i> , ³ <i>VERI, France</i>	[OD49] Study on separation properties of aquaporin-based proteoliposomes and synthesizing of high performance aquaporin based biomimetic membrane Y. Zhao* ¹ , C. Qiu ¹ , A. Vararattanavech ¹ , X. Li ¹ , C.H. Nielsen ² , C.Y. Tang ¹ , ¹ <i>Nanyang Technological University, Singapore</i> , ² <i>Aquaporin A/S, Denmark</i>
16:40-18:40	Coffee & Poster Session 3- Benjamin Britten Lounge & Whittle Room			
Thursday 27th September 2012				
Location	Fleming Room	Westminster Suite	St James Suite	Abbey Room
Topic	Ultra- and Microfiltration - IV	Membrane Formation - II	Modelling - IV	Inorganic Membranes - II
Session Chairs	A. L. Ahmad & J. Wei	N.A. Hashim & R.G.H. Lammertink	X.H. Qian & D. Mattia	B. Kingsbury & D.A. Pacheco Tanaka
8:10-8:30	[OA50] Influence of temperature on compaction of ultrafiltration membranes S. Stade*, M. Kallioinen, M. Mänttari, T. Tuuva, <i>Lappeenranta University of Technology, Finland</i>	[OB50] Structured membranes R.G.H. Lammertink*, M. Bikel, Z. Çulfaz, M. Wessling, <i>University of Twente, The Netherlands</i>	[OC50] Explaining the ultra-high water flow rates observed in carbon nanotube membranes D. Mattia* ¹ , F. Calabro ² , K.P. Lee ¹ , H. Leese ¹ , ¹ <i>University of Bath, UK</i> , ² <i>Universita' di Cassino, Italy</i>	[OD50] Aging studies of composite alumina carbon molecular sieve membranes M.A. Llosa Tanco ¹ , D.A. Pacheco Tanaka* ^{1,2} , S.C. Rodrigues ¹ , A.M. Mendes ¹ , ¹ <i>University of Porto, Portugal</i> , ² <i>Tecnalia, Spain</i>
8:30-8:50	[OA51] Advantages of the application of ceramic membranes in recovery of microbial fermentation products J.A. Vente*, E. van de Sandt, <i>DSM Food Specialties, The Netherlands</i>	[OB51] Fundamentals of high-flux PVDF hollow fiber membrane formation: The evolution of macrovoid-free and highly interconnected cellular structure for ethanol-water separation P. Sukitpaneemit*, T.S. Chung, <i>National University of Singapore, Singapore</i>	[OC51] Molecular modelling of oxygen and carbon dioxide permeation in glassy polymer membranes S. Neyertz* ¹ , N.F.A. Van Der Vegt ² , D. Brown ¹ , ¹ <i>University of Savoie, France</i> , ² <i>Technical University of Darmstadt, Germany</i>	[OD51] Inorganic - polyimide hybrid membranes by sequential molecular grafting V.G.P. Sripathi*, A. Nijmeijer, N.E. Benes, <i>University of Twente, The Netherlands</i>
8:50-9:10	[OA52] Seawater treatment using UF and NF membrane processes for well water injection in the oil & gas industry M. Jacob* ¹ , O. Lorain ³ , J.M. Espenan ³ , N. Lesage ¹ , P. Pedenaud ² , ¹ <i>Total Petrochemicals, France</i> , ² <i>Total E&P, France</i> , ³ <i>POLYMEM, France</i>	[OB52] Molecular interactions between novel solvent [EMIM]SCN and cellulose acetate, and their influences on hollow fiber ultrafiltration membranes D.Y. Xing*, N. Peng, T.S. Chung, <i>National University of Singapore, Singapore</i>	[OC52] Molecular dynamics simulations of thermoresponsive poly(N-isopropylacrylamide) and its copolymer H.B. Du, S.R. Wickramasinghe, X.H. Qian*, <i>University of Arkansas, USA</i>	[OD52] A generic method for inorganic porous hollow fibers preparation with shrinkage-controlled small radial dimensions M.W.J. Luiten-Olieman ¹ , L. Winnubst ¹ , T. Bor ¹ , M. Wessling ² , A. Nijmeijer ¹ , N.E. Benes ¹ , M.J.T. Raaijmakers* ¹ , ¹ <i>University of Twente, The Netherlands</i> , ² <i>Aachen University, Germany</i>
9:10-9:30	[OA53] Tight ceramic ultrafiltration (TCUF) for reverse osmosis pretreatment: Rejection of phosphate and organic matter R. Shang* ¹ , S.G.J. Heijman ¹ , S. Li ^{1,2} , J. Lu ¹ , A.R.D. Verliefde ^{1,3} , L.C. Rietveld ¹ , ¹ <i>Delft University of Technology, The Netherlands</i> , ² <i>King Abdullah University of Science and Technology, Saudi Arabia</i> , ³ <i>Ghent University, Belgium</i>	[OB53] Collective osmotic shock; A novel method for polymeric membrane generations P. Zavala Rivera* ¹ , E. Sivaniah ¹ , S.K. Nataraj ^{1,3} , M. Calvo ² , H. Míguez ² , C. López- López ² , ¹ <i>University of Cambridge, UK</i> , ² <i>Instituto de Ciencia de Materiales de Sevilla, Spain</i> , ³ <i>Qatar University, Qatar</i>	[OC53] A multi-scale model for polymer membranes R.J. Broadbent*, J.S. Spencer, A.G. Livingston, A.A. Mostofi, A.P. Sutton, <i>Imperial College London, UK</i>	[OD53] New ceramic membranes for organic solvent nanofiltration with a molecular weight cut-off < 500 Da S. Zeidler* ^{1,2} , P. Puhlfürß ³ , U. Kätzel ¹ , I. Voigt ³ , ¹ <i>Merck KGaA, Germany</i> , ² <i>TU Dortmund University, Germany</i> , ³ <i>Fraunhofer Institute for Ceramic Technologies and Systems, Germany</i>

9:30-10:00	Coffee Break- Benjamin Britten Lounge & Whittle Room			
Topic	Molecular Membrane Design	Membrane Contactors and Multifunctional Reactors - III	Membranes for Energy Generation and CO₂ Capture - II	Microfluidic Membrane Applications
Session Chairs	J.G. Crespo	A. Volkov & I. Ortiz	K.L. Tung & M.C. Ferrari	R.G.H. Lammertink & P.Y. Apel
10:00-10:20	[OA54] Si- and Ge-substituted polytricyclononenes as new highly permeable polymer materials M.V. Bermeshev*, B.A. Bulgakov, L.E. Starannikova, M.L. Gringolts, Y.P. Yampolskii, E.S. Finkelshtein, A.V. Topchiev Institute of Petrochemical Synthesis RAS, Russia	[OB54] Comparison of reactive membranes containing ILs in the separation of gaseous olefin-paraffin mixtures M. Fallanza, A. Ortiz, D. Gorri, I. Ortiz*, University of Cantabria, Spain	[OC54] Mixed gas permeation measurements on novel modified PIMs materials for post-combustion carbon capture R. Veerapur ¹ , H. Shamsipour ² , C. Mason ² , P. Budd ² , M.C. Ferrari* ¹ , S. Brandani ¹ , ¹ University of Edinburgh, UK, ² University of Manchester, UK	[OD54] Asymmetric track-etch pores for micro- and nanofluidics P.Y. Apel* ^{1,2} , I.V. Blonskaya ¹ , O.L. Orelovich ¹ , B.A. Sartowska ³ , ¹ Joint Institute for Nuclear Research, Russia, ² The International University Dubna, Russia, ³ Institute of Nuclear Chemistry and Technology, Poland
10:20-10:40	[OA55] Design and characterization of asymmetric cross-linked polymer membranes by molecular dynamics modeling and simulations J.C. Wang*, A.I. Liapis, Missouri University of Science and Technology, USA	[OB55] Hydrophobic and hydrophilic hollow fiber membranes for CO₂ stripping via gas-liquid membrane contactor R. Naim* ^{1,2} , A.F. Ismail ² , A. Mansourizadeh ³ , ¹ Universiti Malaysia Pahang, Malaysia, ² Universiti Teknologi Malaysia, Malaysia, ³ Islamic Azad University, Iran	[OC55] Designing membrane materials for high temperature gas separation in CCS applications M. Schroeder* ¹ , J. Yi ² , ¹ RWTH Aachen University, Germany, ² Huazhong University of Science and Technology, China	[OD55] Strategies in membrane emulsification to make the process suitable for industrial application E. Piacentini*, E. Drioli, L. Giorno, CNR, Italy
10:40-11:00	[OA56] Influence of annealing temperature in permeation and plasticization resistance for samples containing carboxylic acid A. Tena* ² , A.E. Lozano ² , A. Marcos-Fernández ² , L. Palacio ¹ , P. Prádanos ¹ , A. Hernández ¹ , ¹ University of Valladolid, Spain, ² Consejo Superior de Investigaciones Científicas, Spain	[OB56] High pressure/temperature membrane contactors for CO₂ capture processes A. Volkov* ¹ , V. Vasilevsky ¹ , A. Lysenko ¹ , A. Runstraat ² , S. V. Khotimskiy ¹ , ¹ A.V. Topchiev Institute of Petrochemical Synthesis, Russia, ² TNO, The Netherlands	[OC56] Capacitive electrodes for energy generation by reverse electrodialysis D.A. Vermaas* ^{1,2} , M. Saakes ² , K. Nijmeijer ¹ , ¹ University of Twente, The Netherlands, ² Wetsus, The Netherlands	[OD56] Development of bacteria streamers during filtration: Impact of microchannels pore tortuosity on streamers formation A. Marty, C. Roques, C. Causserand*, P. Bacchin, University of Toulouse, France
11:00-11:20	[OA57] Study of the behavior of magnetic ionic liquids supported membranes for selective transport C.I. Daniel* ¹ , C.A. Afonso ² , F.V. Chávez ³ , P.J. Sebastião ^{3,4} , C.A. Portugal ¹ , J.G. Crespo ¹ , ¹ Universidade Nova de Lisboa, Portugal, ² Universidade de Lisboa, Portugal, ³ Instituto Superior Técnico, Portugal, ⁴ Technical University of Lisbon, Portugal	[OB57] Creating the new nanosize membrane reactors with accumulated hydrogen and uncatalytic hydrogenation of decene-1 using this hydrogen A.P. Soldatov*, M.V. Tsodikov, RAS, Russia	[OA57] High-performance thermally self-cross-linked polymer of intrinsic microporosity (PIM-1) membranes for energy development F.Y. Li* ¹ , Y. Xiao ² , T.S. Chung (Neal) ¹ , ¹ National University of Singapore, Singapore, ² Suzhou Faith & Hope Membrane Technology Co. Ltd, China	[OD57] Hollow-fiber membrane emulsification – an alternative route to the production of alginate beads H. Breisig*, S. Dahmen, M. Wessling, RWTH Aachen University, Germany
11:25-12:10	[Plen4] Membrane solutions to global warming , R. Baker, Membrane Technology and Research Inc. Chaired by: E. Drioli, Fleming Room			
12:10-13:00	Awards Ceremony & Closing Remarks -Fleming Room			