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Monday, March 6, 2017

07:00 – 08:30	Breakfast buffet
	Session 1: Separation Media Synthesis and Modeling Chairs: Marco Mazzotti, ETH Zurich, Switzerland Krista Walton, Georgia Institute of Technology, USA
08:30 – 09:10	**Modelling of metal-organic frameworks as tunable adsorbents for separations 1** Randall Snurr, Northwestern University, USA (Plenary)
09:10 – 09:40	**On the use of structured adsorbents in cyclic adsorption processes 2** James Ritter, University of South Carolina, USA
09:40 – 10:10	**Redox-based electrochemical adsorption technologies for energy-efficient water purification and wastewater treatment 3** T. Alan Hatton, Massachusetts Institute of Technology, USA
10:10 – 10:40	Coffee break
	Session 2: Adsorption and Chromatography - 1 Chairs: T. Alan Hatton, Massachusetts Institute of Technology, USA Randall Snurr, Northwestern University, USA
10:40 – 11:10	**CO_2 interactions with porous carbons: Is the surface stable at ambient conditions?** 4 Teresa Bandosz, CCNY/CUNY, USA
11:10 – 11:40	**Impact of metal substitution on stability and adsorption properties of MOF-74 5** Krista Walton, Georgia Institute of Technology, USA
11:40 – 12:10	**3D-printed structured adsorbents for molecular separation 6** Joeri Denayer, Virje Universiteit Brussels, Belgium
12:10 – 12:30	Break
12:30 – 13:40	Lunch
	Session 3: Adsorption and Chromatography - 2 Chairs: Chang-Ha Lee, Yonsei University, Korea Teresa Bandosz, CCNY/CUNY, USA
13:40 – 14:10	**Electrochemically-mediated adsorptive processes for CO_2 capture** 7 T. Alan Hatton, Massachusetts Institute of Technology, USA
14:10 – 14:40	**Adsorption equilibrium and kinetics of high molecular weight n-paraffins mixtures and kerosene on 5A zeolite 8** Daniel Aranda López, Universidad Complutense de Madrid, Spain
14:40 – 15:10	**Polymer-grade olefin production by gas-phase SMB 9** Vanessa Martins, FEUP/LSRE-LCM, Portugal
15:10 – 15:40	Coffee break

Monday, March 6, 2017 (continued)

Session 4: Adsorption and Chromatography - 3
Chairs: James Ritter, University of South Carolina, USA
Joeri Denayer, Vrije Universiteit Brussel, Belgium

15:40 – 16:10 **H_2 pressure swing adsorption for IGCC power plant and techno-economic analysis of integrating PSA to IGCC with carbon capture 10**
Chang-Ha Lee, Yonsei University, South Korea

16:10 – 16:40 **Cryogenic pressure temperature swing adsorption process for natural gas upgrade 11**
Alexandre Ferreira, University of Porto, Portugal

16:40 – 17:10 **Two-column relay simulated moving-bed for gas-phase separations 12**
Rui Ribeiro, LAQV-Requimte, Portugal

17:10 – 19:00 Free time / *ad hoc* Sessions

19:00 – 20:30 Dinner

20:30 – 21:30 **Social Hour/Poster Session - 1**
Chairs: Ranil Wickramasinghe, University of Arkansas, USA
James Ritter, University of South Carolina, USA

Tuesday, March 7, 2017

07:00 – 08:30 Breakfast buffet

Session 5: Bioseparations: Recent Advances - 1
Chairs: Ana Azevedo, Instituto Superior Técnico, Portugal
Marcel Ottens, Delft University of Technology, Netherlands

08:30 – 09:00 **Analytical affinity chromatography-on-a-chip for selective capture and sensitive detection of protein and polynucleotide biomarkers 13**
Ruben Soares, Institute for Bioengineering and Biosciences, Portugal

09:00 – 09:30 **Surface engineering for developing new membrane adsorbers 14**
Ranil Wickramasinghe, University of Arkansas, USA

09:30 – 10:00 **New adsorbers for the removal of genotoxic impurities from active pharmaceutical ingredients 15**
Teresa Esteves, Instituto Superior Técnico, Portugal

10:00 – 10:30 Coffee break

Session 6: Bioseparations: Recent Advances - 2
Chairs: Ranil Wickramasinghe, University of Arkansas, USA
Alois Jungbauer, BOKU, Australia

10:30 – 11:00 **Core-shell versus inert polymer grafted adsorbents for the negative chromatography of virus-like particle 30**
Beng Ti Tey, Monash University, Malaysia

11:00 – 11:30 **Why nanofibers are a good adsorptive surface – fundamental understanding and industrial applications for mAb bioprocessing 31**
Karol Lacki, Puridify, United Kingdom

11:30 – 12:00 **Purification of minicircles by combined enzymatic modification of miniplasmid topology and multimodal chromatography 32**
Duarte Prazeres, Instituto Superior Técnico, Portugal

12:30 – 14:00 Lunch

Session 7: Bioseparations: Recent Advances - 3
Chairs: Karol Lacki, Puridify, United Kingdom
Ruben Soares, Institute for Bioengineering and Biosciences, Portugal

14:00 – 14:30 **Bienzymatic production and reaction-integrated separation of laminaribiose by ad- and desorption on zeolite BEA 33**
Dave Hartig, Technische Universität Braunschweig, Germany

14:30 – 15:00 **Understanding and enhancing selective Fab separations using multimodal chromatography 34**
Steven Cramer, Rensselaer Polytechnic Institute, USA

15:00 – 15:30 **Rapid optimization of chromatography operating conditions using a nano-liter scale column on a microfluidic chip with integrated pneumatic valves and optical sensors 35**
Ines Pinto, Instituto Superior Técnico, INESC-MN, Portugal

Tuesday, March 7, 2017 (continued)

15:30 – 16:00 Coffee break

Session 8: Bioseparations: Recent Advances - 4
Chairs: Steven Cramer, Rensselaer Polytechnic Institute, USA
Dave Hartig, Technische Universität Braunschweig, Germany

16:00 – 16:40 **Integration of continuous precipitation, crystallization and flocculation of recombinant proteins 36**
Alois Jungbauer, BOKU, Austria (Plenary)

16:40 – 17:10 **Use of expanded bed chromatography in industrial scale enzymes production 37**
Guilherme Ferreira, DSM Biotechnology Center, Netherlands

17:10 – 17:40 **LYTAG-driven purification strategies as a key to integrate and intensify the downstream processing of monoclonal antibodies 38**
Ana Azevedo, Instituto Superior Técnico, Portugal

17:40 – 18:10 **Computational bioseparation process development 39**
Marcel Ottens, Delft University of Technology, Netherlands

18:10 – 19:00 Free Time / *ad hoc* Sessions

19:00 – 20:30 Dinner

20:30 – 21:30 **Social Hour / Poster Session – 2**
Chairs: Mainak Majumder, Monash University, Australia
Krista Walton, Georgia Institute of Technology, USA
Dibakar Bhattacharyya, University of Kentucky, USA

Wednesday, March 8, 2017

07:00 – 08:30 Breakfast Buffet

Session 9: Other Technologies Especially Novel Separation Technologies
Chairs: Kamalesh Sirkar, New Jersey Institute of Technology, USA
T. Alan Hatton, Massachusetts Institute of Technology, USA

08:30 – 09:10 **Synthesis of energy efficient separation processes using distillation and membranes 40**
Rakesh Agrawal, Purdue University, USA (Plenary)

09:10 – 09:40 **Miniaturization of aqueous two-phase extraction for biological applications 41**
Raquel Aires-Barros, Instituto Superior Tecnico/iBB, Portugal

09:40 – 10:10 **Optimizing the regeneration process parameters for forward osmosis to produce clean water at low temperature 42**
Abdukrem Amhamed, Hamed Bin Khalifa University, Qatar

10:10 – 10:40 Coffee break

Session 10: Other Technologies Especially Novel Separation Technologies
Chairs: Rakesh Agrawal, Purdue University, USA
Marco Mazzotti, ETH Zurich, Switzerland

10:40 – 12:00 **Panel Discussion: Alternative Separation Processes (AltSep) for Current Organic-Organic Separation Technologies**
Panelists: James Ritter, Andrew Livingston, Randall Snurr, Joao Crespo, Rakesh Agrawal, Marco Mazzotti

12:30 – 13:30 Lunch

13:40 Coaches depart the hotel for the conference excursion.

There will be a guided tour inside the medieval wall of Faro for a glimpse of the local history. We expect to visit a museum or the cathedral. The harbor stands outside one of the entrances of the medieval walls where the group will board a catamaran which will take us along the Natural Park of the Ria Formosa. The island where we will stop is at the southern-most point of Portugal, where the silence and stillness are most impressive. The catamaran will return the group to Faro where the coaches will be waiting for the return to the hotel. Anticipated return time is 18:00.

Dinner this evening will be “on your own”. We’ll have a list of restaurants in Albufeira available; however, it is fun to go to the downtown area and find an interesting restaurant.

Thursday, March 9, 2017

07:00 – 08:30 Breakfast buffet

Session 11: Membrane Separations - 1
Chairs: Andrew Livingston, Imperial College London, United Kingdom
Kamalesh Sirkar, New Jersey Institute of Technology, USA

08:30 – 09:10 **Thin film membranes for molecular separations 54**
Andrew Livingston, Imperial College, London (Plenary)

09:10 – 09:40 **Organic solvent nanofiltration with novel perfluoropolymer and other polymeric membranes 79**
Kamalesh Sirkar, New Jersey Institute of Technology, USA

09:40 – 10:10 **Overview of research on graphene-based membranes 80**
Mainak Majumder, Monash University, Australia

10:10 – 10:40 Coffee break

Session 12: Membrane Separations - 2
Chairs: João Crespo, FCT-Universidade Nova de Lisboa, Portugal
Ranil Wickramasinghe, University of Arkansas, USA

10:40 – 11:10 **Monitoring of membrane processes with fluorescence molecular probes 81**
João Crespo, FCT-Universidade Nova de Lisboa, Portugal

11:10 – 11:40 **Membrane distillation for treating hydraulic fracturing produced waters 82**
Ranil Wickramasinghe, University of Arkansas, USA

11:40 – 12:10 **Membrane supports designed for Pd membranes 83**
Bernard Bladergroen, University of the Western Cape, South Africa

12:10 – 12:40 **Computational fluid dynamics (CFD) approach for characterizing and improving fluid flow for membrane filtration technologies and successful scale-up 84**
Mohd Shawkat Hussain, University College London, United Kingdom

12:40 – 14:00 Lunch

Session 13: Membrane Separations - 3
Chairs: Winston Ho, The Ohio State University, USA
Mihail Barboiu, Institut Europeen des Membranes, France

14:00 – 14:30 **Oxidatively stable membranes for CO_2 separation and H_2 purification 85**
Winston Ho, The Ohio State University, USA

14:30 – 15:00 **Rubbery organic frameworks-tuning the Gaz-diffusion through dynameric membranes 86**
Mihail Barboiu, Institut Européen des Membranes, France

15:00 – 15:30 **CO_2 capture over H_2 by polymeric membranes for carbon-free H_2 production 87**
Ikuo Taniguchi, Kyushu University, Japan

15:30 – 16:00 Coffee break

Thursday, March 9, 2017 (continued)

Session 14: Membrane Separation - 4
Chairs: Dibakar Bhattacharyya, University of Kentucky, USA
Alois Jungbauer, BOKU, Austria

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Dibakar Bhattacharyya, University of Kentucky, USA

16:30 – 17:00 **Nanomembranes in biotechnology: Separation of small and large biomolecules 89**
Alois Jungbauer, BOKU, Austria

17:00 – 17:30 **Advanced RO element obtained by new membrane and channel material 90**
Hiroyuki Yamada, Toray Industries, Inc, Japan

17:30 – 18:00 **ElectroOsmoDialysis 91**
Andriy Yaroshchuk, ICREA & Polytechnic University of Catalonia, Spain

18:00 – 19:00 Free Time / *ad hoc* sessions

19:00 – 21:00 Conference Banquet

Friday, March 10, 2017

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	Session 15: Crystallizations and Solid-Liquid Separations - 1 Chairs: Ronald Rousseau, Georgia Institute of Technology, USA Marco Mazzotti, Swiss Federal Institute of Technology Zurich, Switzerland
08:30 – 09:10	**Sequencing synthesis and crystallization to improve product yield 102** Ronald Rousseau, Georgia Institute of Technology, USA (Plenary)
09:10 – 09:40	**Crystal nucleation from solution: design and modelling of detection time experiments 103** Giovanni Maggioni, ETH Zurich, Switzerland
09:40 – 10:10	**Selective manipulation of crystal shape by combined crystallization, milling, and dissolution stages - An approach for robust process design 104** Fabio Salvatori, Technical University Zurich, Switzerland
10:10 – 10:40	Coffee break
	Session 16: Crystallizations and Solid-Liquid Separations - 2 Chairs: Kamalesh Sirkar, New Jersey Institute of Technology, USA Steven Cramer, Rensselaer Polytechnic Institute, USA
10:40 – 11:10	**Holistic development of a low-energy ammonia-based process for CO_2 capture with solid formation 105** Marco Mazzotti, ETH Zurich, Switzerland
11:10 – 11:40	**On the potential of phase-change adsorbents for CO_2 capture by temperature swing adsorption 106** Marco Mazzotti, ETH Zurich, Switzerland
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12:30	Lunch and departures

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2.	**Conductive nanothick gold on hydrophilic polymeric nanomembranes 108** Christian Schuster, acib GmbH, Austria
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7.	**Biorefinery to produce activated carbon from biomass - an approach for a biogas refining process 113** Isabel Esteves, LAQV-Requimte, Portugal
8.	**Design of structured adsorbents for aplications in gas adsorption processes - Conventional shaping vs 3D-Printed formulation 114** Isabel Esteves, LAQV-Requimte, Portugal
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12.	**Carbon dioxide separation from anaesthetic gases with membrane contactors and biocompatible ionic liquids 118** Carla Martins, Universidade NOVA de Lisboa, Portugal
13.	**Comparison and evaluation of agglomerated MOFs in gaseous biofuels purification by means of pressure swing adsorption (PSA) 119** Ismael Águeda, Universidad Complutense de Madrid, Spain
14.	**Adsorption of representative pharmaceutical compounds from hospital wastewater by carbon materials 120** Ismael Águeda, Universidad Complutense de Madrid, Spain