

Programme

Sunday October 9, 2016

13:00 Registration

Session Workshop 1

14:00 Preparative HPLC of Peptides and Small Molecules: Phase Screening, Method Optimisation, Process Design

Michael SCHULTE (MERCK KGAA, Darmstadt, Germany)

Jochen STRUBE (CLAUSTHAL UNIVERSITY OF TECHNOLOGY, Clausthal-Zellerfeld, Germany)

Session Workshop 2

From Development to Commercial Scale: DoE, QbD, Regulatory, Process Validation

Alessandro BUTTE

(ETH ZURICH, Zurich, Switzerland)

15:30 Coffee Break

Session Workshop 3

16:00 Multicolumn Processes: From Historical SMB to the Latest Advances in the Purification of Biomolecules

Massimo MORBIDELLI (ETH ZÜRICH, Thessaloniki, Greece)

José Paulo MOTA (REQUIMTE/CQFB, FFCT, Caparica, Portugal)

Arvind RAJENDRAN (UNIVERSITY OF ALBERTA, Edmonton, AB, Canada)

Session Workshop 4

Process Design for Purification of Biomolecules

Alois JUNGBAUER (UNIVERSITY OF NATURAL RESOURCES AND LIFE SCIENCES, Vienna, Austria)

Bernt NILSSON (LUND UNIVERSITY, Lund, Sweden)

17:45 SPICA 2016 Opening Ceremony

18:00 KL01 - Current Innovation Challenges in the Development of non-Mab Biotherapeutics

Georg KLIMA

(BOEHRINGER INGELHEIM, Vienna, Austria)

18:45 Welcome Reception

20:00 End of the Day

Programme

Monday October 10, 2016

08:00 Registration

Session 1

Session Chair

Bernt NILSSON
(LUND UNIVERSITY, Lund, Sweden)

09:00 KL02 - What Can We Learn from Art in the Better Design of Production Equipment for Biopharmaceuticals?

Martin HOFMANN
(BIOTECHFLOW, Stroud, Glos, United Kingdom)

09:40 OC01 - Viscous Fingering Dynamics in Preparative Liquid Chromatography

Michel MARTIN
(ECOLE SUPÉRIEURE DE PHYSIQUE ET CHIMIE/CNRS/PMMH, Paris, France)

10:00 OC02 - Computational Fluid Dynamics Study of Viscous Fingering in Supercritical Fluid Chromatography

Arvind RAJENDRAN
(UNIVERSITY OF ALBERTA, Edmonton, AB, Canada)

10:20 Coffee Break & Exhibition

Session 2

Session Chair

Jochen STRUBE
(CLAUSTHAL UNIVERSITY OF TECHNOLOGY, Clausthal-Zellerfeld, Germany)

10:50 OC03 - Unified Design of Chromatographic Separation Processes

Tuomo SAINIO
(LAPPEENRANTA UNIVERSITY OF TECHNOLOGY, Lahti, Finland)

11:10 OC04 - Application of Expanded Bed to the Production of Industrial Enzymes

Esteban FREYDELL
(DSM, Delft, The Netherlands)

11:30 OC05 - Some Insights in Centrifugal Partition Chromatography Engineering - Application to Alkaloids Separation at Production Scale

Luc MARCHAL
(UNIVERSITÉ DE NANTES, Saint Nazaire, France)

11:50 OC06 - Simultaneous Optimization of Chromatographic Process Configuration and Operating Conditions

Johannes SCHMÖLDER
(FRIEDRICH-ALEXANDER-UNIVERSITÄT ERLANGEN-NÜRNBERG, Erlangen, Germany)

12:10 Lunch Break & Exhibition

12:20 Vendor Seminars by Agilent Technologies, Daiso Fine Chem & Rotachrom Technologiai (12:20-13:20)

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Session 3

Session Chair

José Paulo MOTA
(REQUIMTE/CQFB, FFCT, Caparica, Portugal)

13:30 KL03 - Design and Control of Continuous Downstream Processing for Cost Efficient Manufacturing of Biopharmaceuticals

Oliver KALTENBRUNNER
(AMGEN INC., Thousand Oaks, United States)

14:10 OC07 - Investigation and Development of Preparative Recycling Size Exclusion Chromatography

Kathleen MUELLER
(FRIEDRICH-ALEXANDER UNIVERSITÄT ERLANGEN-NÜRNBERG, Erlangen, Germany)

14:30 OC08 - Modelling Scale-Up of Preparative Chromatography Columns Taking into Account Extra Column Effects and Variations of Packing Quality

Susanne SCHWEIGER
(AUSTRIAN CENTRE OF INDUSTRIAL BIOTECHNOLOGY, Vienna, Austria)

14:50 OC09 - Scalability of Mechanistic Models for Ion Exchange Chromatography under Highly Overloaded Conditions

Thiemo HUUK
(KARLSRUHE INSTITUTE OF TECHNOLOGY (KIT), GOSILICO, Karlsruhe, Germany)

15:10 Coffee Break & Exhibition

Session 4

Session Chair

Dorota ANTOS (RZESZOW UNIVERSITY OF TECHNOLOGY, Rzeszow, Poland)

15:40 KL04 - Continuous Purification Platforms for Viral Vectors Based on Multicolumn Simulated Countercurrent Chromatography

José Paulo MOTA
(REQUIMTE/CQFB, FFCT, Caparica, Portugal)

16:20 OC10 - When Scaling-Up Chromatography is not Trivial

16:40 OC11 - Development of a Continuous Downstream Cascade for the End-to-End Integrated Manufacture of Monoclonal Antibodies

Fabian STEINEBACH
(ETH ZÜRICH, Zurich, Switzerland)

17:00 OC12 - Continuous Integrated Antibody Digestion and Purification

Nicole ULMER
(ETH ZÜRICH, Zurich, Switzerland)

17:20 Poster Session 1 (even numbers) & Beer Party

18:20 End of the Day

Programme

Tuesday October 11, 2016

Session 5

Session Chair

Massimo MORBIDELLI
(ETH ZÜRICH, Thessaloniki, Greece)

- 08:30 KL05 - Understanding Protein Unfolding and Aggregation in Cation Exchange and Protein A Chromatography Columns**
Giorgio CARTA
(UNIVERSITY OF VIRGINIA, Charlottesville, United States)
- 09:10 OC13 - Preparative Separation and Characterization of Charge Variants of Several Blockbuster Antibody Therapeutics**
Nico LINGG
(UNIVERSITY OF NATURAL RESOURCES AND LIFE SCIENCES, VIENNA, Vienna, Austria)
- 09:30 OC14 - Polyvalent Buffers in Ion Exchange Chromatography Using Salt Tolerant Resins**
Egbert MÜLLER
(TOSOH BIOSCIENCE GMBH, Darmstadt, Germany)
- 09:50 OC15 - Effect of Isotherm Nonlinearity on the Retention Behaviour of Proteins in Hydrophobic Interaction and Multimodal Chromatography**
Dorota ANTOS
(RZESZOW UNIVERSITY OF TECHNOLOGY, Rzeszow, Poland)
- 10:10 OC16 - SMB Separation of Peptides**
Joachim KINKEL
(GEORG-SIMON-OHM UNIVERSITY OF APPLIED SCIENCES, Nuernberg, Germany)
- 10:30 Coffee Break & Exhibition**

Session 6

Session Chair

Joachim KINKEL
(GEORG-SIMON-OHM UNIVERSITY OF APPLIED SCIENCES, Nuernberg, Germany)

- 11:00 OC17 - General Gradients for Preparative Protein Chromatography**
Bernt NILSSON
(LUND UNIVERSITY, Lund, Sweden)
- 11:20 OC18 - PAT for Preparative Chromatography of Proteins: Real-Time Monitoring of a Capture and Polishing Step**
Matthias RÜDT
(KARLSRUHE INSTITUTE OF TECHNOLOGY, Karlsruhe, Germany)
- 11:40 OC19 - Pore Diffusion Coefficients of Proteins in Multicomponent Mixtures**
Alexander MATLSCHWEIGER
(BOKU VIENNA, Vienna, Austria)
- 12:00 OC20 - Improving Washing Strategies of Human Mesenchymal Stem Cells Using Negative Mode Expanded Bed Chromatography**

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Cristina PEIXOTO
(IBET, Oeiras, Portugal)

12:20 Lunch Break sponsored by AMPAC Fine Chemicals & Exhibition

12:30 Vendor Seminars by AKZO Nobel/Kromasil & Chiral Technologies Europe (12:30-13:30)

13:40 Poster Session 2 (odd numbers)

Session 7

Session Chair

Michael SCHULTE
(MERCK KGAA, Darmstadt, Germany)

14:40 KL06 - Strategies for Improving the Productivity of Chromatography or Proteins

Shuichi YAMAMOTO
(YAMAGUCHI UNIVERSITY, Ube, Japan)

15:20 OC21 - Optimization of Primary Recovery and Downstream Processing for Protein Purification from E. Coli Homogenates

Rainer HAHN
(BOKU VIENNA, Vienna, Austria)

15:40 OC22- Influence of Mixed Electrolytes and PH on HIC-Adsorption and Partial Molar Volume of Proteins

Eva HACKEMANN
(TU KAISERSLAUTERN, Kaiserslautern, Germany)

16:00 OC23 - Negative and Positive Multi-Column Chromatographic Strategies for the Purification of Enveloped Virus-Like Particles

Ricardo SILVA
(IBET - INSTITUTO DE BIOLOGIA EXPERIMENTAL E TECNOLÓGICA, Oeiras, Portugal)

16:20 Coffee Break & Exhibition

Session 8

Session Chair

Andreas SEIDEL-MORGENSTERN
(MAX PLANCK INSTITUTE FOR DYNAMICS OF COMPLEX TECHNICAL SYSTEMS, Magdeburg, Germany)

16:50 OC24 - Model Predictive Control of 4-Zone Simulated Moving Bed Chromatography for the Separation of Bicalutamide Enantiomers

Ju Weon LEE
(MAX-PLANCK-INSTITUTE FOR DYNAMICS OF COMPLEX TECHNICAL SYSTEMS, Magdeburg, Germany)

17:10 OC25 - Concurrent Modeling and Design Approach for Development of Multi-Component Simulated Moving Bed Processes

Yoshiaki KAWAJIRI
(GEORGIA INSTITUTE OF TECHNOLOGY, Atlanta, United States)

17:30 OC26 - A Method for Designing Flow-Through Chromatography Processes

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Sumiko HASEGAWA
(YAMAGUCHI UNIVERSITY, Ube, Japan)

17:50 OC27 - Simulated Periodic Counter-Current Chromatography (SPCCC) - A Scale-Down Model for Multicolumn Continuous Chromatography Process Development

Gang WANG
(KARLSRUHE INSTITUTE OF TECHNOLOGY (KIT), Karlsruhe, Germany)

18:10 OC28 - Integrated Counter Current Chromatography (iCCC) - A Platform Alternative for a Protein a Free mAB and SCFV Downstream

Fabian MESTMÄCKER
(CLAUSTHAL UNIVERSITY OF TECHNOLOGY, Clausthal-Zellerfeld, Germany)

18:30 End of the Day

20:00 Symposium Banquet

Wednesday October 12, 2016

Session 9

- 08:30 Session Chair**
Tuomo SAINIO
(LAPPEENRANTA UNIVERSITY OF TECHNOLOGY, Lahti, Finland)
- 08:30 OC29 - Experimental Analysis and Theoretical Description of Multiphase Flow in the Context of Liquid Chromatography**
Franziska ORTNER
(ETH ZURICH, Zurich, Switzerland)
- 08:50 OC30 - Ionic Liquid-Liquid Chromatography (ILLC)**
Martyn EARLE
(QUILL RESEARCH CENTRE, Belfast, United Kingdom)
- 09:10 OC31 - Ion Exclusion Chromatography: Model Development and Experimental Results**
Gabriele LODI
(POLITECNICO DI MILANO, Casteggio, Italy)
- 09:30 OC32 - Tuning of Peak Deformations, Due to Co-Solvent Adsorption, in Preparative Supercritical Fluid Chromatography**
Torgny FORNSTEDT
(KARLSTAD UNIVERSITY, Karlstad, Sweden)
- 09:50 Poster Prizes**
- 10:10 Coffee Break & Exhibition**

Session 10

Session Chair

Eric VALERY
(NOVASEP CDMO, AN AXPLORA COMPANY, Saint Maurice de Beynost, France)

- 10:40 KL07 - The Effect of Column Heterogeneity and Column Structure on the Accuracy of Overloading Studies**
Attila FELINGER
(UNIVERSITY OF PECS, Pécs, Hungary)
- 11:20 OC33 - Separation of a Quaternary Chiral Mixture Using Different Simulated Moving Bed Strategies**
António E. RIBEIRO
(POLYTECHNIC INSTITUTE OF BRAGANÇA, Braganca, Portugal)
- 11:40 OC34 - Model-Based Design of Preparative Binary and Ternary Separations with Liquid-Liquid Chromatography**
Raena MORLEY
(TECHNICAL UNIVERSITY OF MUNICH, Freising, Germany)
- 12:00 OC35 - Applying the Ideal Adsorbed Solution Theory to Describe Elution Profiles in Case of Complex Single Component Isotherms**
Andreas SEIDEL-MORGENSTERN
(MAX PLANCK INSTITUTE FOR DYNAMICS OF COMPLEX TECHNICAL SYSTEMS, Magdeburg, Germany)

Programme

12:20 **OC36 - Liquid-Liquid Chromatographic Separation of Natural Compounds Using Biphasic Systems Containing Deep Eutectic Solvents: Experimental and Computational Studies**

Mirjana MINCEVA
(TECHNICAL UNIVERSITY OF MUNICH, Freising, Germany)

12:40 **Closing Remarks**