



38th International Symposium on the Separation of Proteins, Peptides and Polynucleotides

Conference Programme

Sunday, November 4, 2018

11:00 *Start of Registration*

Pre-conference Workshops

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|--------------|---|--|
| 11:45 | Alois Jungbauer,
Cristina Cabral | Mechanistic understanding of biomolecules adsorption:
theory and applications |
| 13:30 | Michel Eppink,
Sophia Hober | Surface plasmon resonance in biotechnical development |
| 15:15 | Sonja Berensmeier,
Matthias Franzreb | Magnetic separation of proteins in the technical scale |

Start of Conference

17:00 *Welcoming Remarks*

Key Note Lecture - Chair: Sonja Berensmeier

17:30 Rainer Bischoff Biomarker discovery and validation – from shotgun
proteomics to targeted methods

18:30 *Welcome Reception*

Monday, November 5, 2018

Key Note Lecture - Chair: Alois Jungbauer

08:30 My Hedhammar BioSilk - A bioactive material made of recombinant silk fusion proteins

Session 1: Biopharmaceuticals I - Chair: Alois Jungbauer

09:30 Sophia Hober The development of small protein domains for biotechnological and medical use

10:00 Sara Rosa Biothermodynamics of the adsorption of monoclonal antibodies in phenylboronic acid agarose-based supports: Affinity vs multimodal chromatography

10:20 Eva Udovic An optimization of Raman spectroscopy parameters and implementation of in-line Raman spectroscopy to the key steps of mAB production downstream process

10:40 Carsten Voss Purification of Large Biomolecules with Tailored Anion Exchangers

11:00 *Refreshment Break*

Session 2: Biopharmaceuticals II - Chair: Sophia Hober

11:30 Alois Jungbauer Virus, virus-like particles, extra cellular vesicles and gene therapy vesicles purification

12:00 Pavel Marichal- A Single-Use Purification Platform For Viral Vaccines & Gene Therapy Vectors
Gallardo

12:20 Cristina Peixoto Improving oncolytic adenovirus manufacturing: designing GMP compatible bioprocesses

12:40 Leif Bülow One-Step Chromatographic Separations of Wildtype and Mutant Proteins from Crude Biological Fluids Using Molecularly Imprinted Polymers

13:00 *Break*

Session 3: Biopharmaceuticals III - Chair: Milton Hearn

14:30 Egbert Müller Preparation and purification of protein-mimetic drug conjugate with tuneable hydrophobicity

15:00 Svenja Nicolin Bolten Substitution of heparin for purification of recombinant proteins

15:20 Shuichi Yamamoto Tuning pore size of monolithic chromatography for large biomolecule separations

15:40 Günter Allmaier Nano Bioparticle (Liposomes, Vlips And Viruses) Separation By Means Of Differential Mobility Analysis In Combination With Spectroscopy And Mass Spectrometry

16:00 *Refreshment Break*

Session 4: Short Presentations - Chair: Sonja Berensmeier

- 16:30** Irsyad Khairil Anuar Bacterial superglue engineered for protein separation and plug-and-display nanoassembly
- 16:38** Lennart Kleinfeldt Structuring and functionalization of iron oxide particles for continuous automated in situ protein purification
- 16:46** Luis Passarinha Soluble catechol-O-methyltransferase capture from a *Pichia pastoris* X33 lysate through a new batch method with gellan microspheres
- 16:54** Igor Tadeu Lazzarotto
Bresolin Purification of murine, rabbit and human IgG onto iminodiacetic acid immobilized onto monolithic disks
- 17:02** Yasmin Kaveh
Baghbaderani Magnetic Nanoparticles as New Stationary Phases for Antibody Affinity Purification
- 17:10** Jure Sencar A narrow residence time incubation reactor for continuous virus inactivation based on packed beds
- 17:18** **Poster Party**

Tuesday, November 6, 2018

Key Note Lecture - Chair: Aleš Podgornik

- 08:30** Herbert Lindner How does CE-MS compare with LC-MS in peptide and PTM analysis?

Session 5: Bioanalytics I - Chair: Aleš Podgornik

- 09:30** Michel Eppink Microfluidics as a tool in DSP for biopharmaceutical proteins
- 10:00** Cédric Delvaux Combination of Capillary Electrophoresis and Ion mobility coupled to Mass Spectrometry and Theoretical Calculations for cysteine connectivity identification in peptides bearing two intra-molecular disulfide bonds
- 10:20** Anja Kristl Influence of pressure on gradient separations of biomolecules by ion exchange chromatography
- 10:40** Fátima Milhano Santos Development of an artificial neural network for vitreous protein profiling by bidimensional electrophoresis
- 11:00** *Refreshment Break*

Session 6: Bioanalytics II Chair: Michael Eppink

- 11:30** Barry Boyes Protein Variant Separation Improvements using Superficially Porous Particles and Operating Condition Manipulations
- 12:00** Kiyohito Shimura Immunoaffinity Capillary Isoelectric Focusing: Two facile micro analytical platforms for charge variants of protein pharmaceuticals
- 12:20** Gerhard Heinzmann Electrical Asymmetrical Flow Field-Flow Fractionation coupled with Online Multi-Angle Light Scattering: Advanced Separation and Characterization of Charged and Polarizable Nanoparticles, Liposomes, Proteins, Antibodies and Viruses
- 12:40** Dierk Rössner Sample injection with reduced pressure-drop for size exclusion chromatography for improved protein aggregate detection

13:00 *Break*

Session 7: Simulation/ Automation and Modelling - Chair: Matthias Franzreb

- 14:15** Aleš Podgornik Analysis of adsorption phenomena based on pressure drop data
- 14:45** Nadia Galeotti Influence of Mixed Electrolytes on HIC-Adsorption and Prediction of Chromatographic Elution Profiles
- 15:05** Ajoy Velayudhan Analysis of modulator effects in the polishing SMB of proteins
- 15:25** Tatjana Turrina Potential-Controlled Chromatography – a Simple and Innovative Separation Technique for Charged Biomolecules

15:45 *Refreshment Break*

15:30 **Poster Session**

Session 8: Advances in stationary phases - Chair: Egbert Müller

- 16:30** Sonja Berensmeier New stationary phases as alternatives to conventional chromatography
- 17:00** Milton Hearn Selectivity Modulation of Synthetic Peptides with Dynamic Hydrophobic Silica-based Adsorbents
- 17:20** Cristina Dias-Cabral The adsorption mechanism behind biomolecule adsorption onto a salt-tolerant anion exchanger: a calorimetric perspective.
- 17:40** Ursula Simon 3D-printed anion exchange monoliths for protein separations
- 18:00** *End of session*

Wednesday, November 7, 2018

Session 9: Continuous Processing - Chair: Christina Dias-Cabral

- 09:00** Matthias Franzreb Temperature-controlled purification of monoclonal antibodies applying travelling heating zone chromatography
- 09:30** Chantal Brämer Continuous purification of industrial relevant proteins with a self-established periodic counter-current chromatography device
- 09:50** Hans Blom Productivity considerations for batch and continuous chromatography
- 10:10** Guido Ströhlein A stackable, single-use chromatography cassette enhancing continuous antibody capture
- 10:30** *Refreshment Break*

Session 10: Scale-up and Scale-down of chromatography - Chair: Sonja Berensmeier

- 11:00** Giorgio Carta Gradient Elution Behavior of Proteins in Hydrophobic Interaction Chromatography with U-Shaped Retention Factor Curves
- 11:30** Dmytro Iurashev Computational fluid dynamics successfully predicts the scalability of chromatography columns
- 11:50** Yannick Krauke Continuous purification of xylitol by simulated moving bed (SMB) process
- 12:10** *Presentation of Poster Awards and Concluding Remarks*
- 12:30** *End of conference*