



5th STARSS Conference on Separation Science

within a research project STARSS (Specialized Team for Advanced Research on Separation Science), Reg. No. CZ.02.1.01/0.0/0.0/15_003/0000465

DAY 1: Thursday 02. 12. 2021

08:00 – 09:00 REGISTRATION

09:00 – 09:15 **Welcoming address**

Prof. Petr Solich, Prof. František Švec, Faculty of Pharmacy, Charles University, Hradec Králové, Czech Republic

SESSION I: CURRENT TRENDS FOR SEPARATION

09:15 – 10:00 **L-01: Current Speed and Efficiency Limits of Liquid Chromatography and Future Prospects**

Prof. Gert Desmet, Vrije Universiteit Brussel, Belgium

10:00 – 10:40 **L-02: Approaches towards multidimensional LC within the biopharmaceutical industry**

Dr. Isabelle François, Chromisa Scientific, Belgium

10:40 – 11:10 **Coffee-break and discussion**

SESSION II: ANALYSIS OF BIOMOLECULES

11:10 – 11:50 **L-03: Cutting-edge LC-MS analytical workflows for the characterization of monoclonal antibodies and related products**

Dr. Valentina D'Atri, University of Geneva, Switzerland

11:50 – 12:20 **L-04: Analysis and characterization of peptide drugs by capillary electromigration methods**

Dr. Václav Kašička, Institute of Organic Chemistry and Biochemistry of the CAS, Czech Republic

12:20 – 12:40 **L-05: Intact level, middle-up, and bottom-up reversed-phase LC-MS analyses of antibody biopharmaceuticals using a single column**

Dr. Juraj Lenčo, Charles University, Hradec Králové, Czech Republic

12:40 – 13:00 **L-06: The use of mobile phase with low formic acid concentration in LC-MS proteomic analysis leads to enhanced electrospray ionization and improved sensitivity**

Siddharth Jajeda, Charles University, Hradec Králové, Czech Republic

13:00 – 14:00 **Lunch**

SESSION III: METHOD OPTIMIZATION AND SAMPLE PREPARATION APPROACHES

- 14:00 – 14:30 **L-07: A tutorial on isocratic and gradient HPLC elution optimization**
Assoc. Prof. Jiří Urban, Masaryk University, Brno, Czech Republic
- 14:30 – 15:00 **L-08: How to improve structural knowledge of bioactive molecules by understanding the retention mechanisms in liquid chromatography**
Prof. Jean-Christophe Garrigues, University of Toulouse, France
- 15:00 – 15:30 **L-09: Microextraction based on dispersive SPE – an innovative approach to sample preparation**
Assoc. Prof. Ondřej Novák, Palacky University, Olomouc, Czech Republic
- 15:30 – 16:00 **L-10: Sustainable Analytical Chemistry: the role of sample treatment**
Prof. Marcela Segundo, University of Porto, Portugal
- 16:00 – 16:30 **Coffee-break and discussion**

SESSION IV: HYPHENATED TECHNIQUES

- 16:30 – 17:00 **L-11: Complex Characterization of Oxyethylenated Acylglycerols using LC, LC/MS and 2D LC**
Assoc. Prof. Petr Česla, University of Pardubice, Czech Republic
- 17:00 – 17:20 **L-12: Use of a controlled atmosphere flexible microtube plasma ionization source for the determination of small molecules by GC-MS in the field of clinical and food analysis**
Dr. David Moreno Gonzalez, University of Jaén, Spain
- 17:20 – 17:40 **L-13: UHPLC-Orbitrap study of the first phase in vitro metabolites of tacrine and new anti-Alzheimer drug candidates using human liver microsomes**
Martin Novák, Charles University, Hradec Králové, Czech Republic
- 17:40 – 18:00 **L-14: Analysis of Phenolic Composition of Balsamic Vinegars using LC/MS/MS and GC/MS**
Michal Kašpar, University of Pardubice, Czech Republic
- 18:00 – 18:20 **L-15: Determination of steroids with neuroactive effects in human serum by UHPLC-MS/MS**
Michal Kaleta, Palacky University, Olomouc, Czech Republic
- 18:30 – 21:00 **Conference dinner**



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DAY 2: Friday 03. 12. 2021

08:00 – 09:00 REGISTRATION

SESSION V: SUPERCRITICAL FLUID CHROMATOGRAPHY AND OTHER SEPARATIONS

- 09:00 – 09:30 **L-16: Predicting SFC-MS response using regression equations**
Dr. Kateřina Plachká, Charles University, Hradec Králové, Czech Republic
- 09:30 – 09:55 **L-17: Challenges in analysis of biogenic steroids using chromatographic methods coupled to mass spectrometry**
Taťána Gazárková, Charles University, Hradec Králové, Czech Republic
- 09:55 – 10:20 **L-18: Enantioseparations of carboranes using chromatographic and electrophoretic techniques**
Ondřej Horáček, Charles University, Hradec Králové, Czech Republic
- 10:20 – 10:40 **L-19: Test Compounds for Characterization of Analyte-Nanoparticle Interaction using Capillary Electrophoresis**
Jana Váňová, University of Pardubice, Czech Republic
- 10:40 – 11:10 **Coffee-break and discussion**

SESSION VI: SAMPLE PREPARATION

- 11:10 – 11:50 **L-20: Online, heartcutless and renewable sample preparation under turbulent flow condition**
Dr. David J. Cocovi-Solberg, University of Natural Resources and Life Sciences of Vienna, Austria
- 11:50 – 12:20 **L-21: Automated in-line microfluidic sample preparation for industries: needs, trends and challenges towards the fourth industrial revolution**
Maximilien Guerin, Advanced Microfluidics SA, Ecublens, Switzerland

- 12:20 – 12:40 **L-22: Microextraction strategies for determination of halides and halogen oxyanions in environmental samples**
Francisco Pena-Pereira, University of Vigo, Spain
- 12:40 – 13:00 **L-23: In-Syringe Automated Deep Eutectic Solvent-Based Single Drop Microextraction of Fluoroquinolones Coupled Online to HPLC-FLD**
Sercan Yildirim, Karadeniz Technical University, Trabzon, Turkey
Charles University, Hradec Králové, Czech Republic
- 13:00 – 14:00 **Lunch**

PARALLEL WORKSHOPS: FACULTY OF PHARMACY

- 14:00 – 17:30 **W1: Advanced extraction techniques with nanofibres**

Laboratory 524, 4. Floor, Faculty of Pharmacy
prof. Dalibor Šatínský, Dr. Ivona Lhotská, Charles University, Hradec Králové, Czech Republic
- W2: Setup of an Lab-In-Syringe system and Optimization of a DLLME Method Based on the Dithizone Assay**

Laboratory 916, 8. floor, Faculty of Pharmacy
Assist. Prof. Burkhard Horstkotte, Charles University, Hradec Králové, Czech Republic

Venue: Hradec Králové, Czech Republic

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