

**ISC 2018** Cannes-Mandelieu, France 32<sup>nd</sup> International Symposium on Chromatography

September 23-27, 2018

# FINAL PROGRAMME

Version 28/09/2018

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#### Welcome to the "Côte d'Azur" for the 32<sup>nd</sup> International Symposium on Chromatography, ISC 2018

Dear Participants,

On behalf of the Scientific Committees of the **32<sup>nd</sup> International Symposium on Chromatography (ISC 2018)** and of the Organizers, it is our great pleasure to welcome you to Cannes-Mandelieu, in the fabulous setting of the "Côte d'Azur", the French Riviera.

The International Symposium on Chromatography (ISC) is one of the premier meetings to discuss all modes of chromatography and separation sciences with a broad coverage of techniques and applications.

The program entices with outstanding scientists invited by the Scientific Committees as well as a selection from more than 400 submitted abstracts! We hope the harmonious combination of oral and poster presentations, tutorials, short courses, vendor lectures and seminars, and an international exhibition on Instrumentation and Services proposed during ISC 2018 will provide you with the advances, fundamentals, challenges, trends and applications of separation techniques, chromatography and mass spectrometry in the widest range of topics.

Besides this very exciting 5-day conference program, we hope the charm of the region in September, the "human" size of the Congress and Exhibition Centre of Mandelieu (CEC) and its location in the city will favor a sweet and informal atmosphere to enjoy separation sciences and their applications during the Symposium. The venue was constructed recently and offers all the facilities for a successful scientific meeting. The CEC can be reached from most of the hotels of the city by walking along the river Siagne.

In addition, Mandelieu, the Mimosa Capital, is situated on the Esterel Massif, which invites for nice treks in the warm temperatures in September. Or maybe practicing water sports near the beaches is more enticing? Another option are the 3 golf courses located in Mandelieu which are amongst the most beautiful in France. If you prefer a more cultural experience along the sea, the Napoule Castle, with its stunning architecture, or the "Croisette" (Cannes Film Festival) are only a short distance away. For a scientific adventure visit the Sophia Antipolis Science and Technology Park, to discover the creation of many fragrances and perfumes. Last but not least, you can taste the southern version of "French cuisine" and experience the hyphenation of the local food with local wines (with moderation!).

We wish you a fruitful conference and an excellent time in Cannes-Mandelieu.

#### Symposium Chairpersons

Didier Thiébaut, Paris (F) Valérie Pichon, Paris (F) Jean-Luc Veuthey, Genève (CH)

## **PROGRAMME OVERVIEW**

Sunday, 23.09.2018					
Time	Auditoire Riviera	Napoule A	Napoule B	Napoule C	
08h00 09h00			Short Courses registrations		
09h00		SC01 - Short Course 1 Analytical Characterization of Protein		SCO3 - Short Course 3 Development and Control of Robust	
10h00 10h00 12h00		Biopharmaceuticals Davy Guillarme Koen Sandra	SCO2 - Short Course 2 Flavors and Fragrances + Analytical Chemistry: An Endless Story	HPLC Methods by Modeling Szabolcs Fekete Hans-Jürgen Rieger	
12h00 13h00			Frédéric Begnaud Philippe Darriet		
			Lunch Break		
14h00 17h00		SCO4 - Short Course 4 GC X GC: Fundamental Principles, Processes and Applications Philip Marriott	SC05 - Short Course 5 Microextraction - The «Green» Sample Preparatoin Choice of Next Generation Analytical Chemists Stig Pedersen-Bjergaard Janusz Pawliszyn	SCO6 - Short Course 6 Introduction to Metabolomics Workflow Serge Rudaz Coral Barbas	
17h30 18h00	Opening Ceremony				
18h00 18h45	PL01 - PLENARY LECTURE 1 Robert Kennedy				
18h45 19h15	CASSS Award Nernst-Tswett Award				
19h15 21h00		Welcome CEC Mo	•		

Monday, 24.09.2018					
Time	Auditoire Riviera	Salon Azur	Siagne D	Napoule	
09h15 10h00	PLO2 - <b>PLENARY LECTURE 2</b> Alain Beck				
		Coffee	Break		
10h45	S01 - Biopharmaceuticals Keynote Speaker:	S02 - Chirality Keynote Speaker:	S03 - Mass Spectrometry Keynote Speaker:		
12h15	Koen Sandra	Wolfgang Lindner	Tony Edge		
12h30	12h15 - 13h45 Poster sessions	Teaching Analytical Chemistry,			
13h00	(odd numbers) PS-01, PS-02, PS-03, PS-04, PS-05, PS-06	current status and challenges Frédéric Begnaud Jérôme Randon	T01 - <b>TUTORIAL 1</b> Michal Holcapek	LUNCHTIME SEMINAR Shimadzu	
13h45					
14h00	SO4 - Fundamentals Keynote Speaker:	S05 - Environment Keynote Speaker:	S06 - <b>SFC</b> Keynote Speaker:		
15h30	Gert Desmet	Damia Barcelo Culleres	Caroline West		
		- 16h45			
16h00 16h45		(even numbers) PS-04, PS-05, PS-06	T02 - TUTORIAL 2 Dwight Stoll	Coffee Break	
17h00	S07 - Metabolomics Keynote Speaker:	S08 - Emerging Techniques Keynote Speaker:	S09 - Proteomics Keynote Speaker:		
17h30	Serge Rudaz	Boguslaw Buszewski	Govert Somsen		
17h30 18h15	AFSEP Best Poster Award 8 Posters in 180 seconds	AFSEP Best Poster Award 8 Posters in 180 seconds	AFSEP Best Poster Award 8 Posters in 180 seconds		

	Tuesday, 25.09.2018					
Time	Auditoire Riviera	Salon Azur	Siagne D	Napoule		
09h15	PL03 - PLENARY LECTURE 3					
10h00	Fabrice Gritti					
10h45	Coffee Break S10 - Fundamentals (HILIC) S11 - Sample Preparation S12 - 2D-GC					
101145	Keynote Speaker: David McCalley	Keynote Speaker:	Keynote Speaker: Philip Marriott			
12h15		Jean-Christophe Garrigues				
12h30	12h15 - 13h45 Poster sessions (odd numbers)	LUNCHTIME SEMINAR		LUNCHTIME SEMINAR		
13h00	PS-07, PS-08, PS-09,	Waters	T03 - TUTORIAL 3 Caroline West	Agilent		
10545	PS-10, PS-11		Abhijit Tarafder			
13h45						
14h00	S13 - Food, Natural Products	S14 - Stationary Phases	S15 - Miniaturization and On-Chip			
15600	Keynote Speaker: Luigi Mondello	Keynote Speaker: Zhengjin Jiang	Techniques			
15h30			Keynote Speaker: Jörg Kutter			
16h00		- 16h45	TO4 - TUTORIAL 4			
	Poster sessions PS-07, PS-08, PS-		Wolfgang Lindner	Coffee Break		
16h45			Michael Laemmerhofer			
17h00	S16 - <b>2D-LC</b>	S17 - Gas Chromatography	S18 - Fast Separation			
18h15	Keynote Speaker: Sabine Heinisch	Keynote Speaker: Pascal Cardinael	Keynote Speaker: Alberto Cavazzini			
18h30						
		Wednesday, 26.0	9.2018			
Time	Auditoire Riviera	Salon Azur	Siagne D	Napoule		
09h00	S19 - Sample Preparation	S20 - Omics	S21 - Biopharmaceuticals, Quality			
10h30	Keynote Speaker: Janusz Pawliszyn	Keynote Speaker: Jeremy Glennon	by Design & Modelling Keynote Speaker: Davy Guillarme			
101100		Coffee				
11h00	S22 - Metabolomics	S23 - <b>2D-LC</b>	S24 - Sample Preparation			
12h15	Keynote Speaker: Coral Barbas	Keynote Speaker: Dwight Stoll	Keynote Speaker: Stig Pedersen-Bjergaard			
12h30			Silg i edelsen-Djergaala			
12h45	12h30 - 13h45 Poster sessions (odd numbers)	LUNCHTIME SEMINAR		LUNCHTIME SEMINAR		
13h00	PS-12, PS-13, PS-14	Thermo Fisher	T05 - TUTORIAL 5 Govert Somsen	PHENOMENEX		
13h45			Goven Somsen			
14h00	S25 - Electrodriven Techniques	S26 - Miniaturization	S27 - Emerging Techniques			
15h45	Keynote Speaker: Herve Cottet	Keynote Speaker: Koji Otsuka	Keynote Speaker: Gertrud Morlock			
	15h45 Poster sessions	- 17h00				
16h15 17h00	Posiel Sessions PS-12, PS-		TO6 - <b>TUTORIAL 6</b> Gérard Hopfgartner	Coffee Break		
			, 0			
17h15	Martin Medal from Chromatographic					
17h30	Society / Jubilee Medal from Chromatographic Society					
17h30	ASAC Award					
18h15	PL04 - PLENARY LECTURE 4 Peter Schoenmakers					
Tonro						
19h30		Gala Dinner -	••			
	Departure buses from CEC: 19h00					
		Thursday, 27.09	.2018			
Time	Auditoire Riviera	Salon Azur	Siagne D	Napoule		
09h00	S28 - Mass Spectrometry Keynote Speakers:	S29 - <b>MS Proteins</b> Keynote Speakers:	S30 - Lipidomics Keynote Speakers:			
10h30	Gérard Hopfgartner, Takehiko Kitamori	Giancarlo Aldini, Sarah Cianferani	Michael Laemmerhofer, Michal Holcapek			
		Coffee	Break			
11h15 12h00	PLO5 - <b>PLENARY LECTURE 5</b> Atila Felinger					
12h00	, , , , , , , , , , , , , , , , , , ,					
12h15	ISC 2020 - Atila Felinger					
12h15 12h30	Best Poster Award					
12h30	Oleolar Ostar					
13h00	Closing Ceremony					

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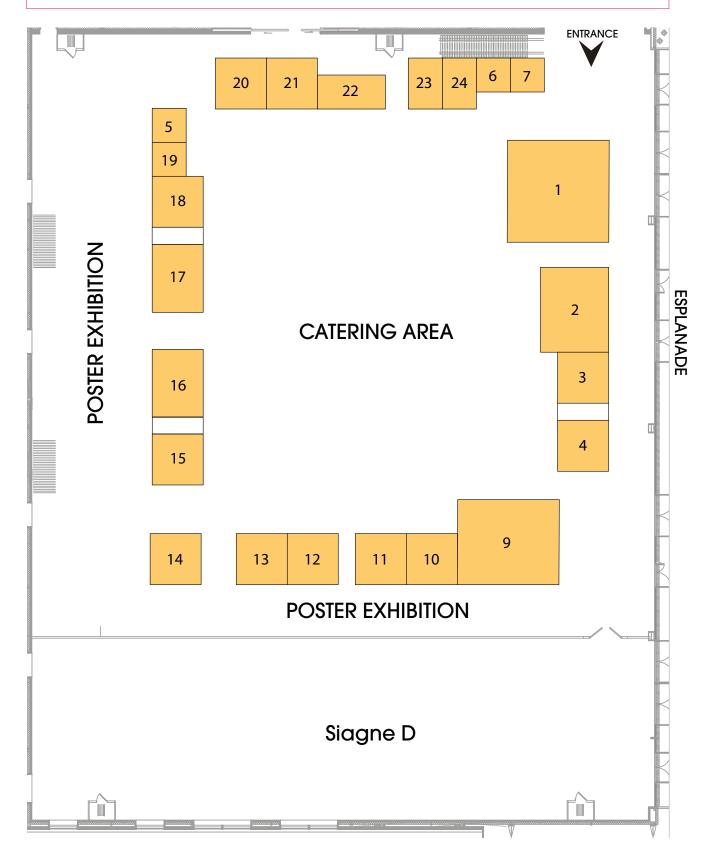
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\* indicates Members of the Permanent Scientific Committee

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# **ISC SYMPOSIUM HISTORY**

The ISC series had been organized since its beginning in 1956 by three societies involved in separation sciences (in UK, Germany and France). Symposium of the ISC series should be organised every two years (even years) all over Europe. Since 2014, the three countries decided to devolve responsibility for the organisation of the ISC series to a Permanent Scientific Committee (ISC-PSC) and its members are part of the scientific committee of each series. Symposia in the series should take place normally during September / October on even years alternately with the HPLC series in which symposia are staged in Europe on odd years. It may be organized by an individual, groups of individuals or European National Societies (or groups thereof) involved in separation sciences. The ISC-PSC is composed of seven members, each of whom can serve for a maximum of seven years, with a reasonable international standing as a separation scientist.

#### **Past Conferences**

] st	1956 London (UK)	S. F. Birch
2 <sup>nd</sup>	1958 Amsterdam (NL)	J. Boldingh
3 <sup>rd</sup>	1960 Edinburgh (UK)	R.C.Chirnside
4 <sup>th</sup>	1962 Hamburg (DE)	C. S. G. Phillips, H. Kientz
5 <sup>th</sup>	1964 Brighton (UK)	D. H. Desty
6 <sup>th</sup>	1966 Rome (IT)	G. B. Marini-Betolo
7 <sup>th</sup>	1968 Copenhagen (DK)	C.G.Scott
8 <sup>th</sup>	1970 Dublin (IR)	C. L. A.Harbourn
9 <sup>th</sup>	1972 Montreux (CH)	E. R. Adlard
10 <sup>th</sup>	1974 Barcelona (ES)	E. Roth
11 <sup>th</sup>	1976 Birmingham (UK)	R. Stock
12 <sup>th</sup>	1978 Baden-Baden (DE)	G. Schomburg
13 <sup>th</sup>	1980 Cannes (FR)	G. Guiochon
14 <sup>th</sup>	1982 London (UK)	C. E. R. Jones
15 <sup>th</sup>	1984 Nürnberg (DE)	E. Bayer
16 <sup>th</sup>	1986 Paris (FR)	M. Martin, P. Devaux
17 <sup>th</sup>	1988 Wien (AT)	J. F. K. Huber
18 <sup>th</sup>	1990 Amsterdam (NL)	Н. Рорре
19 <sup>th</sup>	1992 Aix-en-Provence (FR)	A. Siouffi
20 <sup>th</sup>	1994 Bournemouth (UK)	A. F. Fell
21 <sup>st</sup>	1996 Stuttgart (DE)	H. Engelhardt
22 <sup>nd</sup>	1998 Rome (IT)	F. Dondi
23 <sup>rd</sup>	2000 London (UK)	D. Stevenson
24 <sup>th</sup>	2002 Leipzig (DE)	W. Engewald
25 <sup>th</sup>	2004 Paris (FR)	M. C. Hennion
26 <sup>th</sup>	2006 Kopenhagen (DK)	S. Hansen
27 <sup>th</sup>	2008 Münster (DE)	U. Karst
28 <sup>th</sup>	2010 Valencia (ES)	J. Grimalt
29 <sup>th</sup>	2012 Torun (PL)	B. Buszewski
30 <sup>th</sup>	2014 Salzburg (AT)	W. Buchberger, M. Lämmerhofer, W. Lindner
31 <sup>st</sup>	2016 Cork (IE)	A. Stalcup, J. D. Glennon
32 <sup>nd</sup>	2018 Cannes-Mandelieu (FR)	D. Thiebaut, V. Pichon, JL. Veuthey
33 <sup>rd</sup>	2020 Budapest (HU)	A. Felinger

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#### ISC 2018 Best Poster Awards

Presentation of scientific work on a poster is an efficient way to disseminate and discuss with peers, progress in the understanding of fundamental aspects, new instrumental methods and applications of chromatography and other separation sciences especially for young scientists.

The poster sessions are an important part of the ISC series. Therefore, all posters will be available during the whole symposium to allow a thorough and comprehensive discussion.

An international panel of scientists, chaired by Gerard Rozing, will review the posters in the Best Poster Award (BPA) competition by the following criteria:

- Novelty, originality, and creativity of the work
- The scope of the work, the technical quality of experimental design and execution of experiments,
- Presentation of the work on the poster. Special emphasis will be the presence and explanation of the authors during their designated poster session
- Impact of the work like the potential for innovation, on progressing separation science, on economic and societal aspects, and its use in science teaching
- **\*** Shimadzu offers 5 awards (300 Euro each).
- The centre de compétences en Chimie et Toxicologie Analytiques (ccCTA) offers one award (300 Euro) to a young scientist with a poster in the field of biological/pharmaceutical analysis.
- Springer Verlag offers 5 book vouchers (200 Euro each) on behalf of Analytical and Bioanalytical Chemistry and Chromatographia.

All poster awards will be presented to the winners during the closing ceremony on Thursday, September 27.

#### **AFSEP Best Poster Award**

This award is arranged on behalf of the **AFSEP** (Association Francophone des Sciences Séparatives, the French-speaking Society of Separation Sciences).

They will sponsor three best poster prizes (300 Euro each).

The awards are intended for young scientists who will deliver a short oral (3-minutes) presentation of their work in three parallel sessions at the end of Monday, September 24, from 17h30 to 18h15. The presenters have been selected according to their rankings resulting from the evaluation of the abstracts submitted by young scientists by the symposium International and National Scientific Committees. In each of these sessions, a review panel consisting of 3-4 peers will be attending, as well as the chairmen of the preceding session and the symposium chairs. Each review panel will deliver their nomination immediately after these sessions.

#### **AFSEP Best Poster Oral Presentation**

Monday, September 24, 2018 - 17h30 / 18h15

#### Session 1, Auditoire Riviera

Poster #	Presenting Author	Title
PS-13-09	Ganorkar, Saurabh	Abridging Pharmaceutical Analysis and Drug Discovery via LC-MS-TOF, NMR, In-Silico Toxicity - Bioactivity Profiling for Therapeutic Purposing Zileuton Impurities: Need of Hour
PS-12-27	Brighenti, Virginia	Development of a new HPLC-ESI-MS/MS method for trace analysis of non-psychoactive cannabinoids in apiary products
PS-12-34	Bosakova, Tereza	Monitoring of 17a-Ethynylestradiol During Mouse Sperm Capacitation by HPLC-MS/MS to Propose its Action Using Kinetic Analysis.
PS-08-23	Murtazashvili, Mariami	Analysis of 12 Synthetic Cannabinoids in Blood by Liquid Chromatography Tandem Mass Spectrometry
PS-05-15	Lebanov, Leo	Application of Average Mass Spectra Combined with Multivariate Statistical Analysis in the Authentication and Quality Assurance of Ylang Ylang Essential Oils
PS-13-15	Arigò, Adriana	Application of Linear Retention Indices in Liquid Chromatography for Reliable Characterization of Oxygen Heterocyclic Compounds in Cosmetics
PS-13-16	Svoboda, Jan	HPLC-UV-MS characterization of platinum and palladium complexes as potential cytostatic activity
PS-13-02	Guichard, Nicolas	Computer-assisted UHPLC-MS/MS Method Development and Optimization for the Determination of 25 Antineoplastic Drugs Used in Hospital Pharmacy

#### Session 2, Salon Azur

Poster #	Presenting Author	Title
PS-10-03	Drouin, Nicolas	New insights in CE-MS-based metabolomics
PS-07-38	Michalcová, Lenka	How to Efficiently Mix Long-Injection Plugs in Capillary Electrophoresis?
PS-07-43	Dadouch, Meriem	Development of CE/MS methodologies for the analysis of monoclonal antibodies
PS-10-05	Sillner, Nina	Development and Application of a HILIC-MS/MS Method for Polar Fecal Metabolome Profiling
PS-12-39	Bokuchava, Natia	Study of Biologically Active Compounds in Georgian Grapevine Canes
PS-01-33	Gilardoni, Ettore	Enantioselective Chromatography for the Determination of Histidine Dipeptides in Food and Food Supplements
PS-05-12	George, Nadine	Determination of the Design Space of Chiral HPLC Separations on Chirobiotic T Stationary Phase
PS-01-37	Stavrou, Ioannis	Combined Use of Cyclofructans and an Amino Acid Ester- Based Ionic Liquid for the Enantioseparation of Huperzine A and Coumarin Derivatives in CE.

#### Session 3, Siagne D

Poster #	Presenting Author	Title
PS-06-15	Marlot, Léa	Preparative Comprehensive Two-Dimensional Chromatography: Comparison of CPCxLC and PrepLCxLC for the Isolation of Multiple Targets from Edelweiss Plant.
PS-06-04	Pérez Cova, Miriam Carolina	Untargeted Comprehensive Two-Dimensional Liquid Chromatography: a Yeast Lipidomic Study
PS-11-04	Ehkirch, Anthony	An online of four-dimensional SECxSEC-IMxMS methodology for in-depth characterization of forced degraded monoclonal antibodies.
PS-06-14	Chapel, Soraya	On-line HILICxRPLC Separation of Complex Peptide Sample
PS-14-31	Sanjuan Navarro, Lorenzo	Chromatographic Characterization of AuNPs Used in Plasmonic Assays
PS-04-01	Ventouri, Iro	Native Asymmetrical Flow Field-Flow Fractionation and Size- Exclusion Chromatography for Studying Aggregation of Beta- D-Galactosidase
PS-12-41	Piparo, Marco	Programmed Temperature Vaporizing (Ptv): A Versatile Solution For A Non-Discrimination Of Vacuum Gas Oil
PS-07-21	Rédei, Csanád	Competitive Adsorption in Supercritical Fluid Chromatography: A Model

#### ASAC Fritz-Pregl-Medal 2018



Awarded to: Peter SCHOENMAKERS, University of Amsterdam, The Netherlands

This Award is named for the Austrian chemist Friedrich Michael Raimund Pregl, who received the 1923 Nobel Prize in Chemistry for his pioneering work in the field of Microchemical Methods, which are very closely related to analytical chemistry and analytical sciences. Fritz Pregl is the doyen of the Austrian analytical chemists.

This highest award of the ASAC will be given to scientists who have contributed outstanding developments in Analytical Sciences.

Throughout his career, Peter Schoenmakers has devoted his scientific enthusiasm towards separation sciences, and in particular, towards liquid chromatography theory and practice. His contributions and innovations advanced the field significantly and had high impact on the today's standing of the large portfolio on separation technologies, essentially applied in all fields of chemistry, life science, environmental science, and materials science, among others. The board of the ASAC respectfully congratulates the awardee.

#### **Chromatographic Society Awards**

Each year the Chromatographic Society acknowledges the scientific achievements of respected members of the chromatographic community through the award of one of two medals.

#### Martin Medal Winner 2018



The Chromatographic Society is pleased to announce that **Prof. Jean-Luc VEUTHEY** from the University of Geneva will be awarded the Martin Medal for 2018.

The award has been made in recognition of his outstanding contributions to separation science applied to the analysis of drugs and drugs of abuse, and in the advancement of the understanding of elucidating drug properties.

#### Jubilee Medal Winner 2018



The Chromatographic Society is pleased to announce the award of the Jubilee Medal to **Dr. Davy GUILLARME** from the University of Geneva in recognition of his contributions to the development of chromatographic techniques (HPLC, UPLC and SFC) and their hyphenation to mass spectrometry.

Dr. Davy Guillarme has demonstrated his exceptional abilities, application and commitment to the field of separation science and as such the Chromatographic Society is delighted to honour him with the Jubilee Medal for 2018.

#### EuSSS Award - Nernst-Tswett Award

EuSSS was established in 2002 for:

- Consolidation of people who work in separation sciences,
- Establishment an umbrella for the national societies on separation science, particularly to promote the formation of international networks for the efficient spreading of technical knowledge, for setting up scientific programmers, and for fostering academic/industrial co-operation,
- Promotion of separation sciences as an important part of analytical chemistry, physical and organic chemistry,
- Harmonization of national educational programmes and ensure proper conditions for academic training in separation sciences, in view of the new European bachelor, masters and PhD curricula,
- Nomination of and award to prominent scientists (max 2) of the to Nernst-Tswett Award, particularly scientists who strongly influenced development of separation sciences for the progress of our civilization

#### 28<sup>th</sup> ISC 2010 in Valencia (Spain)

- 1. Prof. V. Davankov (Russia)
- 2. Prof. G. Bonn (Austria)

#### 29th ISC 2012 in Toruń (Poland)

3. Prof. P. Sandra (Belgium)

#### 30<sup>th</sup> ISC 2014 in Salzburg (Austria)

- 4. Prof. F. Švec (USA)
- 5. Prof. W. Lindner (Austria)

#### 31<sup>th</sup> ISC 2016 in Cork (Irland)

- 6. Prof. K. K. Unger (Germany)
- 7. Prof. P. Jandera (Czech Rep.)

#### 32<sup>th</sup> ISC 2016 in Cannes-Mandelieu (France)

- 8. Prof. R. Kaliszan (Poland)
- 9. Prof. M. Martin (France)



#### Simon-Widmer Award

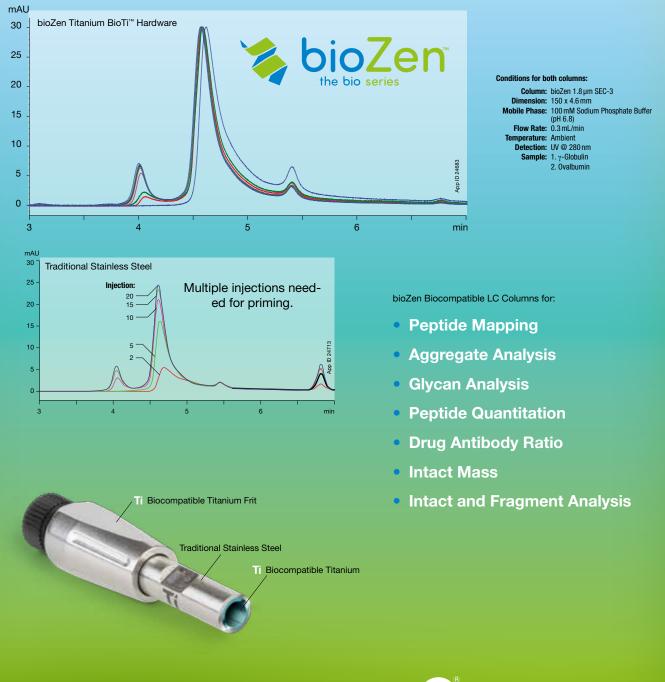


Awarded to (2017): Prof. Takehiko KITAMORI, University of Tokyo.

The Simon-Widmer Award in memory of Prof Wilhelm Simon and Prof Michael Widmer honors distinguished scientists for their contribution to fundamental and applied analytical science and the education of analytical scientists.

# Primed and Ready to Go





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#### **CASSS Award and Student Travel Grants**

CASSS is a global community of industry, academic and regulatory professionals who work together to resolve scientific challenges in the field of biopharmaceutical development and regulation. CASSS members are dedicated to facilitating the sharing of resources, information, and best practices in order to advance scientific knowledge for the benefit of their members and the public at large. They do this through their family of conferences and forums that bring them the right people (experienced in the field), the right way (a culture of engagement), at the right time (timely, scientifically relevant content).

#### **CASSS Award**



**Paul HADDAD** announced as 2018 Winner of CASSS Award for Outstanding Achievements in Separation Science.

The CASSS Award for Outstanding Achievements in Separation Science recognizes contributions to the fields of separation science and technology. The award consists of \$500, an invitation to speak and reimbursement of travel expenses to a major

international symposium where the award is presented. (The award presentation venue varies. Past examples include the HPLC and ISC symposia.) A nominee must have made an outstanding contribution to the fields of separation science and technology with particular consideration given to developments of new methods and techniques.

#### **CASSS Student Travel Grant**

CASSS provided a limited number of travel grants for PhD candidates and academic postdocs presenting posters and/or talks at ISC 2018 in Cannes-Mandelieu, France. Interested candidates had to be the first author and presenter at the conference.

All applicants had to be current graduate students enrolled in a program or post-doctoral researchers working in a discipline applicable to biopharmaceutical sciences, including protein and nucleic acid therapeutics, vaccines, cell therapy, and gene therapy, etc, - as well as the application of chromatographic and electrophoretic separation methods within the field.

#### **CASSS selected Students Award Travel Grants**

- Noor Abdulhussain, van't Hoff Institute, Netherlands
- Laura Akbal, University of Geneve, Switzerland
- Giorgia La Barbera, Sapienza University, Italy
- Katerina Plachka, Karlova University, Czech Republic

#### ccCTA Travel Grants

#### ccCTA selected Students Award Grants:



- Elsa Omer
- Blanka Fodor
- Lucia Chrenkova
- Magy Maged Herz
- Nadine Medhat George

The Center of Competence in Analytical Chemistry and Toxicology (ccCTA - www.ccCTA.ch) is particularly pleased to support the chair persons of the ISC Congress, Professors Valérie Pichon, Didier Thiébault and Jean-Luc Veuthey for the organisation of the ISC 2018 Congress.

Our association founded in Switzerland more than 20 years ago, aims at collaboration between analytical laboratories and researchers, the exchange of know-how and skills, the organization of training programs or scientific events for researchers, students, practitioners and technicians. Concerned with improving knowledge in the fields of analytical chemistry and analytical toxicology but also in the development of modern analytical methods, the ccCTA is particularly attentive to promoting our disciplines among young researchers. The rapid technical evolution of the last few years, the new methodological contributions as well as the challenges posed by the available analytical data, represent formidable opportunities for the next generation of analytical researchers.

The ccCTA committee is thus honored to be present at Cannes-Mandelieu and to contribute to the success of ISC 2018 by having awarded 5 registration grants to deserving young researchers who have been selected to present a poster or an oral presentation.

We wish you an excellent conference. Prof. Serge Rudaz - President of the ccCTA

# **PRACTICAL INFORMATION**

#### **Conference Venue**

Centre Expo Congrès Mandelieu 806 Avenue de Cannes 06210 Mandelieu-la-Napoule France

Tel: +33 (0)4 93 93 64 64 accueil@ot-mandelieu.fr



#### Getting to the Venue

#### **ISC 2018 Shuttle Buses**

On Sunday, 23 September 2018, there will be a shuttle bus running from 9AM to 9PM, every hour on the hour. Tickets must be bought in advance: https://www.symporg-registrations.com/isc18-shuttlebus

Price: 25 EUR

#### **Public Transport**

The following bus lines stop at the Conference Venue.

FROM	BUS	STOPS AT	DIRECTION	PRICE
Nice Airport T1 + T2	3003	Mandelieu-La Napoule Chateauvieux	Saint-Raphaël	20 EUR
Nice Airport T1	LER 20	Mandelieu-La Napoule Tourism Office	Marseille	8 EUR

#### Please note that these buses do not run regularly!

#### Taxi

STEEN Denis - +33 (0)6 07 056 444 Taxi David - +33 (0)6 09 525 425 PICCIAU Pascal - +33 (0)6 07 141 277 POLICARO Sébastien - +33 (0)6 09 843 737

Price from the airport: approximately 100 EUR Uber is also available.

#### **Registration and Welcome Desk**

#### **Opening Times**

Sunday, 23 September 2018:	08h00 - 20h00
Monday, 24 September 2018:	08h00 - 18h30
Tuesday, 25 September 2018:	08h30 - 19h00
Wednesday, 26 September 2018:	08h30 - 18h30
Thursday, 27 September 2018:	08h30 - 14h00

#### **Onsite Registration**

You can register onsite at the Welcome Desk during the Opening Hours. All prices in EUR, VAT included.

	Early Bird until 23 June 2018	Registration from 24 June to 21 September 2018	Onsite Registration from 23 September 2018
Academic	550 EUR	680 EUR	800 EUR
Industry	690 EUR	820 EUR	950 EUR
Student	270 EUR	330 EUR	450 EUR
Short Courses	80 EUR / short course (limited numbers!)		
Gala Dinner	50 EUR / ticket (limited numbers!)		
Acc. Person	50 EUR / ticket		

\* Student rate will be valid upon ID student presentation or with a written confirmation by a Professor

Registration fees for Academic, Industry and Student include:

- Access to all Conferences (excl. Short Courses)
- Conference Bag and Materials
- Welcome Reception on 23 September 2018
- Coffee breaks and Lunches

Registration for Short Courses includes:

- Access to chosen Short Course
- Coffee Break and Lunch on 23 September 2018

Registration for Accompanying Person includes:

- Welcome Reception on 23 September 2018
- Coffee breaks and Lunches

#### Name Badges

All registered delegates will receive a name-badge at the Welcome desk upon arrival. The badge must be worn prominently in order to gain access to the congress area during all scientific and social events. Admission will be refused to anyone not in possession of an appropriate badge.

#### **Congress Bags**

All registered delegates will receive a conference bag at the time of registration.

#### Certificate of Attendance

A certificate of attendance is available upon request from the Welcome Desk.

#### Smoking

Smoking is prohibited in the conference venue. Please seek out specially indicated areas if you wish to smoke.

#### Insurance

Neither the organization nor the conference agency are responsible for individual medical, travel or personal insurance. Delegates are requested to arrange their own travel and health insurance. The organizers cannot assume liability for changes in the programme due to external circumstances.

#### Lunches and Coffee Breaks

Coffee breaks take place in the exhibition Area Lunch breaks take place in the exhibition Area

#### Wi-Fi

Free Wi-Fi is available throughout the conference venue.

Username: ISC Password: 2018

Please note that the username is case-sensitive!

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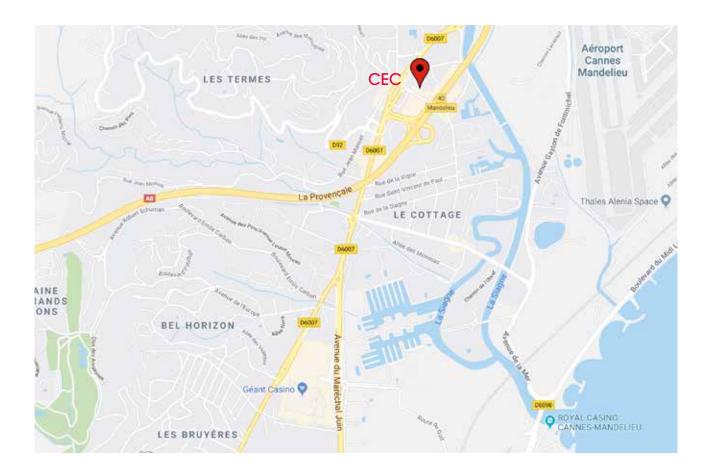
Thermo Scientific<sup>™</sup> TSQ<sup>™</sup> 9000 GC-MS/MS



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## **INFORMATION ABOUT MANDELIEU LA-NAPOULE**



#### **Tourist Information**

Situated in the same building as the conference venue, the tourist office welcomes you to Mandelieu-La Napoule!

Ideally located on the French Mediterranean coast, between the massifs of the Esterel and Tanneron, Mandelieu-La Napoule offers a fantastic setting for a unique destination in the heart of the Côte d'Azur midway between Saint-Tropez and the Italian border. Ports and beaches are at the heart of the identity and image of Mandelieu-La-Napoule.

For more information, visit the following: www.mandelieu.com www.mandelieu.fr

#### Language

The official language of the congress is English and all presentations will be given in English. There is no simultaneous translation.

The official language in Mandelieu-La Napoule is French.

#### Electricity

In France the standard voltage is 230 V and the standard frequency is 50 Hz.

France uses two types of electronic plugs, the C and the E. The type C is used in all countries of Europe except the United Kingdom, Ireland, Cyprus and Malta.

The type E is primarily used in France, Belgium, Poland, Slovakia, the Czech Republic, Tunisia and Morocco.

#### Currency

The local currency is the Euro. Banking hours are from Monday to Friday, from 9h00 to 16h30.

#### **Emergencies**

Police Secours: 17 Ambulance: 15 Fire Service: 18

#### Speaker Room

A speaker room will be provided for all oral presentation. Presentations must be in PowerPoint (MAC or PC) and saved on an empty USB key. Please note that speakers will not be able to use their own laptops!

All presenters are requested to announce themselves at the Speaker Room **at least 2 hours before the scheduled session time**. An audio, video and basic running check of the presentation will be double checked at this time.

#### **Opening Times**

Sunday, 23 September 2018:	15h00 - 21h00
Monday, 24 September 2018:	08h00 - 18h00
Tuesday, 25 September 2018:	08h30 - 18h00
Wednesday, 26 September 2018:	08h30 - 18h00
Thursday, 27 September 2018:	08h30 - 10h00

#### Location

The Speaker room is located on Level 1, Salle des Thermes.

#### **Posters**

Poster format: A0, portrait (841 x 1189 mm)

#### Poster Exhibition Installation

Sunday, 23 September 2018:17h00 - 20h00Monday, 24 September 2018:10h00 - 12h00

#### Please remember your poster number as panels will show these numbers.

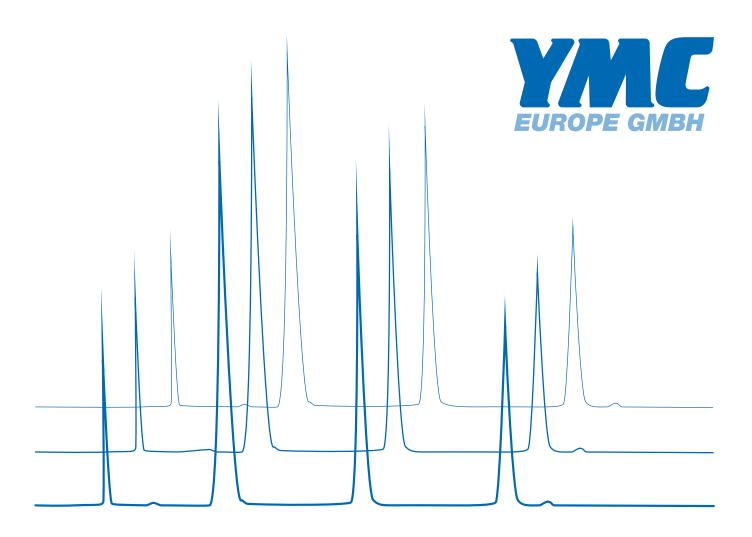
Posters will be hanging for the entire duration of the conference. Please hang your poster <u>before</u> <u>Monday, 24 September 2018, 12h00</u>. The volunteers at the Poster Desk will provide the materials to hang your posters as well as help you find your poster board.

#### Poster Exhibition Dismantling

Thursday, 27 September 2018: 08h00 – 12h00 Please note that any posters left after 12h00 will be destroyed.

#### Abstract Book

The abstract book is available for download on the ISC 2018 official website.





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## JOURNAL OF CHROMATOGRAPHY SPECIAL ISSUE ISC 2018

All authors of both oral and poster presentations are kindly invited to submit manuscripts based your presentation(s) at the 32<sup>nd</sup> International Symposium on Chromatography (ISC 2018) for possible publication in Journal of Chromatography A (https://www.journals.elsevier.com/journal-of-chromatography-a) or Journal of Chromatography B (https://www.journals.elsevier.com/journal-of-chromatography-b), with the intention of publishing in a joint Special Issue that is dedicated to this symposium.

The Special Issue essentially rules out possible delays in publication for contributors to the special issue. Please see below the publication process;

- All papers will go through normal peer review process per journal standard;
- Papers will be published as soon as they are accepted in earliest available regular journal volumes at ScienceDirect, which ensures very fast publication speed for individual authors;
- There will be Footnotes included in each accepted paper, indicating at which conference it was presented;
- The collection of finally accepted papers will be prepared and hosted at a dedicated Special Issue site with links to the papers on ScienceDirect, retaining all original citation details.

Authors are suggested to carefully read on the Scope of these two journals before selecting the journal for publication.

#### Submission instructions

- Submission link:
  - JCA: http://ees.elsevier.com/chroma
  - JCB: https://www.evise.com/profile/#/CHROMB/login
- Fist-time users will need to register;
- Please select special issue short title "VSI: ISC 2018" during the submission process;
- Please follow the step-by-step guide in completing the submission procedure;
- Submission deadline: 15 Jan 2019

When preparing your manuscript(s), please carefully follow the Guide to Authors of your selected journal, which you can find at each journal's homepage site. In the cover letter please mention that your manuscript is intended for the ISC 2018 Special Issue.

# Please note that all manuscripts will be subjected to the mandatory selection process for the journal selected, including the strict peer review procedure; therefore, acceptance for presentation at the conference is not a guarantee for publication in the journals.

Thanks for your attention, and we are looking forward to your contribution!

Elsevier Team

# **SOCIAL PROGRAMME**

#### Welcome Reception

Join us for drinks and snacks following the Plenary Session!

Date: Sunday, 23 September 2018 Location: Conference Centre (CEC), Exhibition Hall Time: from 19h15 - 21h00





#### Gala Dinner

Date: Wednesday, 26 September 2018 Location: Hippodrome, Cagnes-sur-Mer Time: from 19h30

Buses leave from the conference centre (CEC) at 19h00. Please bring your voucher and do not be late!

Vouchers available at the desk (50.00 EUR)

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# ISC 2020



33<sup>rd</sup> International Symposium on Chromatography Budapest, Hungary 20-2

Save the date: 20–24 September 2020

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1<sup>st</sup> prize:

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2<sup>nd</sup> prize: An invitation to our gala dinner

3<sup>rd</sup> prize: A bottle of Hungarian wine

4<sup>th</sup> prize: Book about Hungary

5<sup>th</sup> prize: **Rubik's cube** 

ANNOUNCEMENT OF WINNERS: 26 September 2018 15:45

# TOPICS

- New technologies, instrumentations and separation media for GC, HPLC, SFC and electrodriven separations
- Mass spectrometry hyphenation and applications
- Pharmaceuticals
- Biopharmaceutical and biologics
- Foods, natural products, health, security
- Chemometrics, quality by design, data processing
- All modes of chromatography and electrodriven separation techniques
- Miniaturised and lab-on-chip systems
- Clinical, biomedical and toxicological analysis and diagnosis
- Process chromatography and process analytical technology
- Multidimensional and hyphenated techniques
- Sample handling and trace analysis
- …omics
- Complementary and emerging techniques
- 3D printing of separation systems

# http://isc2020.hu/

# secretariat@isc2020.hu

# SCIENTIFIC PROGRAMME

# SUNDAY, 23 SEPTEMBER 2018

	Napoule C SC-06 - Introduction to Metabolomics Workflow Serge Rudaz & Coral Barbas	
	SC-05 - Microextraction - The «Green» Sample Preparatoin Choice of I Generation Analytical Chemists Stig Pedersen-Bjergaard & Janusz Pawliszyn	Next
	Napoule A SC-04 - GC X GC: Fundamental Principles, Processes and Applications Philip Marriott Napoule B	5
14h00 - 17h00	Short Courses (registration mandatory - lunch included in the registration) - EUR 80.00 / short cour	se
09h00 - 12h00	Napoule C SC-03 - Development and Control of Robust HPLC Methods by Modelin Szabolcs Fekete & Hans-Jürgen Rieger	ng
10h00 - 13h00	Napoule B SC-02 - Flavors and Fragrances + Analytical Chemistry: An Endless Sto Frédéric Begnaud & Philippe Darriet	ry
09h00 - 12h00	Napoule A SC-01 - Analytical Characterization of Protein Biopharmaceuticals Davy Guillarme & Koen Sandra	
09h00 - 13h00	Short Courses (registration mandatory - lunch included in the registration) - EUR 80.00 / short cour	se

17h30 - 18h00 Opening Ceremony Didier Thiébaut, Valérie Pichon, Jean-Luc Veuthey

18h00 - 18h45

PL-01 - **Advances in nanoscale separations and mass spectrometry** <u>Chair</u>: Valérie Pichon Robert Kennedy

18h45 - 19h15 EuSSS - Nernst-Tswett Award Prof. R. Kaliszan & Prof. M. Martin

CASSS Award - Can chromatographic retention times be predicted based only on the chemical structure of an analyte? Paul Haddad

19h15 - 21h00 Welcome Reception Welcome Reception at the Congress Center **Riviera** 

### **MONDAY, 24 SEPTEMBER 2018**

#### 09h15 - 10h00 Plenary session

PL-02 - Cutting-edge chromatographic, electrophoretic and mass spectrometry characterization of mAbs and ADCs Chair: Jean-Luc Veuthey Alain Beck

#### 10h45 - 12h15 Parallel Sessions

**Auditoire Riviera** 

**Salon Azur** 

#### **S01 - Biopharmaceuticals** Chair: Robert Kennedy

#### 10h45 - 11h15

S01-01 - Further pushing the limits of LC and LC-MS in biopharmaceutical analysis Koen Sandra

#### 11h15 - 11h35

S01-02 - Extending the Limits of Size Exclusion Chromatography: Simultaneous Separation of Free Payloads and Related Species From Antibody Drug Conjugates and Their Aggregates Alexandre Goyon

#### 11h35 - 11h55

S01-03 - Unravelling Artificial Denaturation and Aggregation of Therapeutic Monoclonal Antibodies Occurring in Native Mass Spectrometry Minh Thang Le

#### 11h55 - 12h15

S01-04 - Conventional-Flow Liquid Chromatography-Mass Spectrometry for **Exploratory Bottom-up Proteomic Analyses** Juraj Lenco

#### 10h45 - 12h15 Parallel Sessions S02 - Chirality

Chair: Caroline West

#### 10h45 - 11h15

S02-01 - Achiral x Chiral and Chiral x Chiral 2D-LC Concepts for the Enantioselective Analysis of D-Amino Acids in Complex Matrices Wolfgang Lindner

#### 11h15 - 11h35

S02-02 - Determination of the enantiomeric status of novel psychoactive substances of abuse by HPLC, gas chromatography and capillary electrophoresis Martin Schmid

#### 11h35 - 11h55

S02-03 - Thermodynamic and Kinetic Aspects of Enantioseparations on New Generation Fully Porous and Superficially Porous Chiral Stationary Phases Martina Catani

#### 11h55 - 12h15

S02-04 - Mass Spectrometry Coupling of Seamlessly Integrated HPLC Columns and Packed-Bed Reactors to Study Enantioselective Catalysis at the Microscale Rico Warias

#### ISC 2018 · 32<sup>nd</sup> International Symposium on Chromatography

### 14h00 - 15h30 Parallel Sessions S04 - Fundamentals

Chair: Peter Schoenmakers

14h00 - 14h30 S04-01 - On the advantage of ordered monolithic and sphere packings for liquid chromatography Gert Desmet

### 14h30 - 14h50

S04-02 - Characterisation of the Peptide Separation System: Development of a Column Characterisation Protocol based on Peptide Probes Jennifer Field

### 14h50 - 15h10

S04-03 - New Look on Retention Mechanism of Organic Ions in Ion Chromatography and Mixed Mode HPLC with Focus on Combination of Electrostatic and Hydrophobic Interactions Pavel Nesterenko

### 15h10 - 15h30

S04-04 - Novel Ways of Constructing Anion Exchangers for Determining Full Organic Acid Profiles in Beverages by Suppressed Ion Chromatography Aleksandra Zatirakha

14h00 - 15h30 Parallel Sessions S05 - Environment Chair: Jean-Christophe Garrigues Salon Azur

### 14h00 - 14h30

S05-01 - MALDI-TOF Imaging and LC-HRMS: New tools for degradation studies of polymer probes exposed to different wastewater environments: Linking chemical transformations and potential microbial consumers Damia Barcelo Culleres

14h30 - 14h50

S05-02 - Exploring Complex Organic and Inorganic Anion Speciation in Environmental and Industrial Samples Using Ion Chromatography – Triple Quadrupole Mass Spectrometry (IC-MS) Brett Paull

### 14h50 - 15h10

S05-03 - Monitoring of Nitrate and Nitrite in Aquatic Environments using Ion Chromatography with Low-Cost, Portable UV Optical Detection Eoin Murray

### 15h10 - 15h30

S05-04 - Simultaneous Determination of Organic and Inorganic Anions and Cations in Antarctic Ice Core Samples by Dual Capillary Ion Chromatography *Estrella Sanz Rodriguez*  14h00 - 15h30 Parallel Sessions

	17h00 - 17h30 S07-01 - From multivariate to multiblock data structures in Metabolom Issues and Solutions	ics:
17h00 - 17h30	Parallel Sessions S07 - <b>Metabolomics</b> <u>Chair</u> : Coral Barbas	Auditoire Riviera
	T-02 - <b>Two-Dimensional Liquid Chromatography:</b> <b>A Tutorial with a Focus on Current Best Practices</b> <i>Dwight Stoll</i>	
16h00 - 16h45	Tutorial	Siagne D
	PS-06 / Multidimensional and Hyphenated Techniques	
	PS-05 / Chemometrics, Quality by Design, Data Processing	
	PS-04 / Complementary and Emerging Techniques (FFF)	
	PS-03 / Process Chromatography and Monitoring	
	PS-02 / Miniaturized and on-chip systems	
	PS-01 / New technologies, instrumentations and separation media for GC, HPLC and SFC	
15h30 - 16h45	Poster Sessions EVEN numbers	
	<b>15h10 - 15h30</b> S06-04 - <b>Influences of using water in SFC mobile-phase</b> Abhijit Tarafder	
	14h50 - 15h10 S06-03 - On-line coupling of RPLC and chiral SFC for the analysis of pharmaceutical compounds Marion Iguiniz	
	14h30 - 14h50 S06-02 - Supercritical Fluid Chromatography - Mass Spectrometry as a Complementary Approach to Liquid Chromatography for Quality Quantitative Analysis in Metabolomics Laura Akbal	ative/
	14h00 - 14h30 S06-01 - Varied forms of shape selectivity Caroline West	
	S06 - <b>SFC</b> <u>Chair</u> : Michal Holcapek	

Serge Rudaz

17h00 - 17h30	Parallel Sessions S08 - <b>Emerging techniques</b> <u>Chair</u> : Attila Felinger	Salon Azur
	17h00 - 17h30 S08-01 - Flow field flow fractionation and related techniques in the separation and characterization of nano-biosilver composites Bogusław Buszewski	
17h00 - 17h30	Parallel Sessions S09 - <b>Proteomics</b> <u>Chair</u> : Koen Sandra	Siagne D
	17h00 - 17h30 S09-01 - New HILIC-MS Methods for Selective and Sensitive Intact/Middle-up Protein Analysis Govert W. Somsen	
17h30 - 18h15	AFSEP Best Poster Award	
	PA-01 - Best Poster Award - 8 Posters in 180 seconds	Auditoire Riviera
	PA-02 - Best Poster Award - 8 Posters in 180 seconds	Salon Azur

PA-03 - Best Poster Award - 8 Posters in 180 seconds

Detailed list of short oral presentations pages 15-16

MONDAY

Siagne D

# **TUESDAY, 25 SEPTEMBER 2018**

09h15 - 10h00 Plenary session **Auditoire Riviera** 

**Auditoire Riviera** 

### PL-03 - Breaking down the limits of conventional liquid chromatography Chair: Gert Desmet

Fabrice Gritti

#### 10h45 - 12h15 Parallel Sessions S10 - Fundamentals (HILIC)

Chair: Boguslaw Buszewski

### 10h45 - 11h15

S10-01 - Hydrophilic interaction chromatography: advances in understanding the mechanism, robustness and detection possibilities for the technique. David McCallev

### 11h15 - 11h35

\$10-02 - Chasing the elusive hold-up time from an LFER approach. Extension to HILIC. Marti Roses

11h35 - 11h55

S10-03 - A Closer Look at The Retention Mechanism of Hydrophilic Interaction Chromatography (HILIC) Yong Guo

### 11h55 - 12h15

S10-04 - Significantly High Hydrophilicity of a New HILIC Column Modified with Brush-Type Polyacrylamide: Relationship Between the Polymer Structure and the Chromatographic Characteristics Tohru Ikegami

#### 10h45 - 12h15 Parallel Sessions

**Salon Azur** 

## Chair: Janusz Pawliszyn

S11 - Sample Preparation

### 10h45 - 11h15

S11-01 - New supramolecular sorbents for green sample-prep and ultra-trace analysis. Dr. Jean-Christophe Garrigues

### 11h15 - 11h35

S11-02 - Detection of Biocides at Trace Level in Diverse Matrices (Wastewater Treatment Plant Influents and Effluents, Stormwater, Surface Water) by UPLC-MS/MS Claudia Paijens

### 11h35 - 11h55

S11-03 - Development of a new early stage tumor marker using molecular imprinting Fatos Çigdem Kip

### 11h55 - 12h15

S11-04 - Development of Molecular Imprinted Polymers for the Monitoring of Emerging Pollutants and Their Metabolites in Water Audrey Combes

TUESDAY

10h45 - 12h15 Parallel Sessions S12 - 2D-GC <u>Chair</u>: Luigi Mondello

> 10h45 - 11h15 S12-01 - Hyping-up-Hyphenation: GC Methods Using Multiple Columns and Multiple Detectors Philip Marriott

### 11h15 - 11h35

S12-02 - Coupling of Large Volume Injection with Comprehensive Two-Dimensional Gas Chromatography Zsuzsanna Eke

### 11h35 - 11h55

S12-03 - Extended Quantification Range Of Volatile And Semi-Volatile Regulated Substances In Fragrance Materials By Gc×Gc-Tofms With Tandem Ionization And Online Fid Detection Thomas Dutriez

### 11h55 - 12h15

S12-04 - Routine quantification of regulated or banned compounds in perfumery raw materials by GC-Orbitrap mass spectrometry Emilie Belhassen

# 12h15 - 13h45 Poster Sessions ODD numbers

PS-07 / All Modes of Chromatography and Electrodriven Separation Techniques

PS-08 / Clinical, Biomedical and Toxicological Analysis and Diagnosis

PS-09 / Biologics

PS-10 / Omics

PS-11 / Mass Spectrometry Hyphenation and Applications

12h30 - 13h30 Lunchtime Seminars

12h30 - 13h30 LS-03 - Moving Chromatography Forward

12h30 - 13h30

LS-04.1 - 2D-LC- A "swiss army knife" to solve chromatographic challenges?



Waters

**Agilent Technologies** 

understanding the benefits with some applications by SEC-RP and FFF-RP

13h00 - 13h45 Tutorial

T-03 - **Metamorphosis of Supercritical Fluid Chromatography to SFC** Caroline West & Abhijit Tarafder





Napoule

Siggne D

#### 14h00 - 15h30 Parallel Sessions

S13 - Food, Natural Products

Chair: Gertrud Morlock

### 14h00 - 14h30

S13-01 - The Linear Retention Index Approach: Tool for Dispelling Uncertainties in LC-MS Based Identification Luigi Mondello

#### 14h30 - 14h50

S13-02 - High-capacity sorptive extraction and TD-GC×GC-TOF MS for comprehensive VOC profiling of food and beverages Aaron Parker

### 14h50 - 15h10

S13-03 - Development of a UHPLC-HRMS/MS (Orbitrap) Acquisition Method for Screening, Quantification, and Confirmation of a Broad Range of Organic Pollutants and Residues in Food Commodities Ana Miralles-Marco

### 15h10 - 15h30

S13-04 - Investigation of Non-Intentionally Added Substances (Nias) Extracted from Food Contact Materials: Comparison of Gas and Liquid Chromatography - Mass Spectrometry Technologies Elsa Omer

14h00 - 15h30 Parallel Sessions S14 - Stationary Phase Chair: Pascal Cardinael

Salon Azur

#### 14h00 - 14h30

S14-01 - Sustainable small synthetic peptide based affinity monoliths for mAb capture and separation in biological fluids Zhengjin Jiang

### 14h30 - 14h50

S14-02 - Investigation of Column performance of Hybrid Silica-based Porous Layered Open Tube Capillary Columns Produced via Sol-Gel Processing Takeshi Hara

#### 14h50 - 15h10

S14-03 - Polymer Monoliths for Liquid Chromatography Displaying Mesoand Macroporosity Dario Arrua

15h10 - 15h30 S14-04 - New Hyperbranched Anion Exchange Phases for High pH Separation of Carbohydrates Christopher Pohl

# 14h00 - 15h30 Parallel Sessions S15 - Miniaturization and On-Chip Techniques

<u>Chair</u>: Koji Otsuka

14h00 - 14h30

S15-01 - Thiolene-based Materials as a Versatile Platform for Microfluidic Separation and Sample Preparation Devices Jörg Kutter

### 14h30 - 14h50

S15-02 - Seamless Coupling of HPLC and Droplet Microfluidics on a Single Glass Chip Andrea Peretzki

### 14h50 - 15h10

S15-03 - Modular Microfluidics for Streamlining Phosphoproteomics Research Iulia Lazar

### 15h10 - 15h30

S15-04 - Chip-Based Liquid Chromatography Analysis for Biological Compounds Makoto Tsunoda

#### 15h30 - 16h45 Poster Sessions EVEN numbers

PS-07 / All Modes of Chromatography and Electrodriven Separation Techniques

PS-08 / Clinical, Biomedical and Toxicological Analysis and Diagnosis

PS-09 / Biologics

PS-10 / Omics

### PS-11 / Mass Spectrometry Hyphenation and Applications

### 16h00 - 16h45 Tutorial

T-04 - Liquid Chromatographic Enantiomer Separations: Concepts, State of the Art, (sexy) Applications Wolfgang Lindner & Michael Laemmerhofer

### 17h00 - 18h10 Parallel Sessions

S16 - Metabolomics Chair: Dwight Stoll

17h00 - 17h30 S16-01 - On-line comprehensive two-dimensional liquid chromatography as a tool for addressing industrial issues Sabine Heinisch

17h30 - 17h50 S16-02 - 2D-LC with Active Solvent Modulation: Making Challenging Combinations of Separation Conditions Work Sonja Krieger Siagne D

### **Auditoire Riviera**

Salon Azur

17h00 - 18h30

S16-03 - 3D-printed device for multi-dimensional liquid chromatography Noor Abdulhussain

Chair: Philip Marriott 17h00 - 17h30 S17-01 - Miniaturization of Gas Chromatographic Systems: From Capillary Columns to Microelectromechanical Systems. Pascal Cardinael 17h30 - 17h50 Compounds in Fibre-Type Cannabis sativa L. (hemp) Federica Pellati 17h50 - 18h10 \$17-03 - Pyrolysis-GCxGC/MS: would you like to know more about your sample? Michel Sablier 18h10 - 18h30 S17-04 - Integrated System for the rapid Polycyclic Aromatic Hydrocarbons prior to Gas Chromatography analysis Florence Ricoul 17h00 - 18h10 Parallel Sessions S18 - Fast Separation Chair: Fabrice Gritti 17h00 - 17h30

S18-01 - Ultrafast high efficient enantioseparations by liquid chromatography Alberto Cavazzini

## 17h30 - 17h50

S18-02 - Fast and effective detection of ilicit drugs from dried blood spot sample

S18-03 - Preparation and Functionalisation of Core-Shell Particles for Rapid

Salon Azur

Siagne D

Parallel Sessions S17 - Gas Chromatography

S17-02 - HPLC and GC Techniques for the Comprehensive Analysis of Bioactive

Extraction from aqueous samples and their consecutive Thermal Desorption

Jana Rykl

17h50 - 18h10

and Selective Chromatographic Separations Victor Langsi

# WEDNESDAY, 26 SEPTEMBER 2018

09h00 - 10h30	Parallel Sessions
	S19 - Sample Preparation
	<u>Chair</u> : Stig Pedersen-Bjergaard

### 09h00 - 09h30

S19-01 - SPME coupling to LC/MS with matrix compatible coatings Janusz Pawliszyn

### 09h30 - 09h50

S19-02 - Salting-out assisted liquid-liquid extraction with in-line stacking in capillary zone electrophoresis for the determination of tyrosine kinase inhibitors in human plasma Omar Ahmed

Ciria / Annea

09h50 - 10h10

S19-03 - Centrifugal partition chromatography as a fractionation tool for the analysis of lignocellulosic biomass products by liquid chromatography-mass spectrometry *Alexis Dubuis* 

### 10h10 - 10h30

S19-04 - Phosphorylcholine functionalized porous polymeric material for selective enrichment of C-reactive protein in biological samples *Qiajin Wang* 

09h00 - 10h30 Parallel Sessions S20 - Omics Chair: Sarah Cianferani Salon Azur

### 09h00 - 09h30

S20-01 - Separation and Sensing of Targeted Cell Signalling Molecules in the Microbial Exo-Metabolome Jeremy Glennon

### 09h30 - 09h50

S20-02 - Optical chromatography: a novel label-free approach to separate and detect immune responses of live innate immune cells to pathogenic and environmental stimuli Qin Lu

### 09h50 - 10h10

S20-03 - Simultaneous determination of sphingolipids and phospholipids in red blood cells. Application to the diagnosis and monitoring of Gaucher's disease. *Caroline Chipeaux* 

### 10h10 - 10h30

S20-04 - Cellular Uptake and Processing of Gold Nanoparticles in Cancer Cells Studied by Direct and Hyphenated ICP-MS Techniques Magdalena Matczuk

#### 09h00 - 10h30 Parallel Sessions Signe D S21 - Biopharmaceuticals, Quality by Design & Modelling Chair: Michael Laemmerhofer 09h00 - 09h30

S21-01 - Innovative strategies for the analytical characterization of proteins biopharmaceuticals Davy Guillarme

### 09h30 - 09h50

S21-02 - Chromatographic Assay Methods Validation: ICH Against FDA/EMA/USP? The Long Way to Uncertainty of Measurements Jean-Marc Roussel

09h50 - 10h10 S21-03 - Prediction of Peak Capacity for Isocratic and **Complex Gradients based on Peak Simulation** María Celia García-Alvarez-Coaue

10h10 - 10h30 S21-04 - Apparent efficiency of serially coupled columns in isocratic and gradient elution modes Szabolcs Fekete

11h00 - 12h30 Parallel Sessions S22 - Metabolomics **Auditoire Riviera** 

Chair: Giancarlo Aldini

### 11h00 - 11h30

S22-01 - New developments in Metabolomics: in source fragmentation in electrospray ionization mass spectrometry for metabolite identification in untargeted metabolomics

Coral Barbas Arribas

### 11h30 - 11h50

S22-02 - The Metabonomic Profiling of Chicken Eggs During Storage Using High Performance Liquid Chromatography Quadrupole Time-of-Flight Mass Spectrometry Amy Johnson

### 11h50 - 12h10

S22-03 - A Metabolomic Approach by Capillary Electrophoresis-Mass Spectrometry to Evaluate Coffee Roasting Process

Raquel Pérez-Míguez

### 12h10 - 12h30

S22-04 - The Use of Metabonomic Profiling for the Detection of Dead on Arrival Chicken Kate Sidwick

11h00 - 12h10 Parallel Sessions S23 - 2D-LC Chair: Frédéric Begnaud Salon Azur

# 11h00 - 11h30

S23-01 - Recent development toward improving the sensitivity and flexibility of two-dimensional liquid chromatography Dwight Stoll

WEDNESDAY

11h30 - 11h50 S23-02 - An Online Four-Dimensional HICxSEC-IM-MS Methodology for Characterization of Antibody Drug Conjugates Valentina D'Atri

11h50 - 12h10 S23-03 - Two-Dimensional Preparative Chromatography: Isolation of Reference Substances from Complex Samples Magali Batteau

11h00 - 12h10 Parallel Sessions S24 - Sample Preparation Chair: Serge Rudaz

> 11h00 - 11h30 S24-01 - Microextraction based on Electrical Fields -Combining Partition and Electrophoresis Stig Pedersen-Bjergaard

11h30 - 11h50 S24-03 - Determination of the Total Sulfur, Chlorine, Bromine, and Fluorine Contents of Solid Samples Jeffrey S Rohrer

11h50 - 12h10 S24-04 - New Approach for the Selective Extraction of Hypocholesterolemic Compounds from Olive Stone by-Products by Sustainable Extraction Techniques Romy Vásquez-Villanueva

# 12h30 - 13h45 Poster Sessions ODD numbers

PS-12 / Foods, Natural Products, Health, Security

PS-13 / Pharmacy and Cosmetics

PS-14 / Sample Handling and Trace Analysis

### 12h30 - 13h30 Lunchtime Seminars

12h30 - 13h30 LS-05 - Seeking More Productive Chromatography?

12h30 - 13h30 LS-06 - Biochromatography, Peptides and Oligonucleotides

13h00 - 13h45 Tutorial

T-05 - **CE and CE-MS of Biopharmaceuticals** Govert W. Somsen Siagne D

Salon Azur

Napoule

Thermo Fisher

Ophenomenex

Siagne D

#### 14h00 - 15h50 Parallel Sessions

**S25 - Electrodriven Techniques** Chair: Govert Somsen

14h00 - 14h30 S25-01 - The « Who am I ?» Game in Capillary Electrophoresis: When Theory Meets Practice Herve Cottet

### 14h30 - 14h50

S25-02 - The Multiple Preconcentration Concept For Unlimited Detection Sensitivity in Capillary Electrophoresis: Determination of Amyloid Beta Peptide Biomarkers in Biological Fluids

Myriam Taverna

### 14h50 - 15h10

S25-03 - Comparison Between Capillary Electrophoresis and Isothermal Titration Calorimetry for the Study of Interactions Laurent Leclercq

15h10 - 15h30 S25-04 - Low Flow CE-MS and Measurement of Stability Constants of Complexes by Affinity CE Dusan Koval

15h30 - 15h50 S25-05 - Coupling imaged Capillary Iso-Electric Focusing (iCIEF) with Mass Spectrometry (MS) Gerard Rozing

#### 14h00 - 15h50 Parallel Sessions S26 - Miniaturization Chair: Jörg Kutter

**Salon Azur** 

14h00 - 14h30 S26-01 - Microscale Liquid Phase Separations Using Specific Interactions Koji Otsuka

### 14h30 - 14h50

S26-02 - Towards Ultra-Sensitive Neurotransmitter Analysis using Micro Pillar Array **Columns with Electrochemical Detection** 

Jean-Pierre Chervet

### 14h50 - 15h10

S26-03 - Increasing the Retention Capacity of Porous Layered Radially **Elongated Pillar Array Columns** Shunta Futagami

# 15h10 - 15h30

S26-04 - Development of a miniature capillary liquid chromatograph with deep UV LED based detection Shing Chung Lam

### 15h30 - 15h50

S26-05 - Breath sampling on chip : tracking of tobacco markers Thomas Chappuis

# 14h30 - 14h50 S27-02 - Characterization of Ultra-Large Polymers using Frit-inlet **Asymmetrical Flow Field-Flow** Mubasher Ahmed Bashir 14h50 - 15h10 S27-03 - Limitations on operating pressure in analytical scale liquid chromatography columns Ken Broeckhoven 15h10 - 15h30 S27-04 - Application of Fused Deposition Modeling 3D Printing Szymon Ulenberg 15h30 - 15h50 S27-05 - Numerical Investigation of Band Spreading Generated by Flow-Through Needle and Fixed Loop Sample Injectors Sander Deridder Poster Sessions **EVEN numbers** PS-12 / Foods, Natural Products, Health, Security PS-13 / Pharmacy and Cosmetics PS-14 / Sample Handling and Trace Analysis 16h15 - 17h00 Tutorial Siggne D T-06 - Ion Mobility Spectrometry - Mass Spectrometry Gerard Hopfgartner Plenary session **Auditoire Riviera** 17h15 - 17h30 Martin Medal from Chromatographic Society / Jubilee Medal from Chromatographic Society

14h00 - 14h30 S27-01 - Miniaturized Planar Chromatography as Citizen Science Gertrud Morlock

for Production of Customized Sorbents Able to Perform Small-Molecule Extraction.

# 15h45 - 17h00

14h00 - 15h50

Parallel Sessions

**S27 - Emerging Techniques** Chair: Alberto Cavazzini

# 17h15 - 18h15

# 17h30 - 18h15

PL-04 - Overcoming the separation challenges posed by complex samples Chair: Didier Thiebaut Peter J. Schoenmakers

#### 19h30 **Gala Dinner**

Hippodrome de la Côte d'Azur, Departure from the Congress Center

# **THURSDAY, 27 SEPTEMBER 2018**

	· · · · · · · · · · · · · · · · · · ·		
09h00 - 10h40	Parallel Sessions S28 - Mass Spectrometry	Auditoire Riviero	
	<u>Chairs</u> : Damia Barcelo Culleres, Tony Edge		
	09h00 - 09h30 S28-01 - Chemical Derivatization with Data Independent Acquisition and Modifier Assisted Ion Mobility Mass Spectrometry to Enhance Analyte Coverage in Metabolomics		
	Gerard Hopfgartner		
	09h30 - 10h00 Simon-Widmer Award S28-02 - Microfluidics and Nanofluidics based on Unit Operationsand its Application to Femto-Liter Separation Chemistry Takehiko Kitamori		
	10h00 - 10h20 S28-03 - The analysis and quantitation of itaconic acid in serum using HILIC (Hydrophilic Interaction Chromatography) coupled to a triple quadrupole mass spectrometer Christopher Henry		
	10h20 - 10h40 S28-04 - Interaction between plants and xenobiotics: uptake and metabolization of drugs Christian Klampfl		
09h00 - 10h20	Parallel Sessions S29 - <b>MS Proteins</b> <u>Chairs</u> : Hervé Cottet, Jeremy Glennon	Salon Azu	
	<b>09h00 - 09h30</b> S29-01 - <b>Affinity chromatography and MS strategies for studying prote</b> <i>Giancarlo Aldini</i>	in lipoxidation.	
	09h30 - 10h00 S29-02 - Advances in online hyphenation of non-denaturing chromator methods to native mass spectrometry and ion mobility for therapeutic characterization Sarah Cianferani		

10h00 - 10h20

S29-03 - Development of Complementary Separation Modes Associated to Different Mass Spectrometers for the Characterization of the Structural Heterogeneity of an Intact Glycoprotein

Julien Camperi

**09h00 - 10h40** Parallel Sessions

Siagne D

S30 - Lipidomics Chairs: Wolfgang Lindner, David Mc Calley

09h00 - 09h30

S30-01 - **Promisses and challenges of targeted and untargeted lipidomics profiling** *Michael Laemmerhofer* 

**09h30 - 10h00** S30-02 - **Lipid Cancer Biomarkers in Early Diagnosis:** Where we are now and what are future steps *Prof. Michal Holcapek* 

10h00 - 10h20 S30-03 - Personalized Medicine Based on High-Performance Affinity Microcolumns: Analysis of Drug Interactions with Modified Proteins and Clinical Samples David Hage

10h20 - 10h40 S30-04 - Recent Advances in Robotic Sample Preparation On-Line With Capillary GC-FID/MS. Christophe Devos

### 11h15 - 13h00 Plenary session

Auditoire Riviera

### 11h15 - 12h00

PL-05 - **Reversed flow liquid chromatography** <u>Chair</u>: Valérie Pichon Prof. Attila Felinger

12h00 - 12h15 Presentation of ISC 2020 Prof. Attila Felinger

12h15 - 12h30 ISC 2018 Best Poster Award

12h30 - 13h00 Closing Ceremony

# LUNCHTIME SEMINARS

# Monday, 24 September 2018

LS-01 - Teaching Analytical Chemistry, current status and challenges

Frédéric Begnaud, Jérôme Randon

## LS-02 - All that sparkles is not Champagne

- 1. Golden Solution for Bioanalysis Dr. Julia Sander
- 2. What's all the fuss about? Analytical characterization and comparison of Champagne with selected sparkling wine from other regions Prof. Frich Leitner

We cordially invite you to the Shimadzu Lunch time seminar where our two speakers will give an update on latest developments and applications in the biopharma and food market. If you enjoy a glass of champagne during the Welcome reception, you might want to join this seminar to find out more about its analytical characterization.

🕀 SHIMADZU

Excellence in Science

# Tuesday, 25 September 2018

## LS-03 - Moving Chromatography Forward

- 1. 60 Years of Innovations Celebrating the Past with an Eye on the Future Hélène Boiteux - Separations Business Development Manager, Waters SAS (France)
- 2. Important Considerations for Successful Reverse Phase Method Transfers Patricia R. McConville - Director of Systems Development Laboratory, Waters Corporation (USA)
- 3. Great Detection Power Leads to Great Possibilities for Chromatographers Paula Hong, Ph.D. - Principal Consulting Scientist, Waters Corporation (USA)

In 1958, James Logan Waters formed Waters Associates, with the first offices located in the basement of the Framingham, Mass. Police Station. Customers requested all kinds of various scientific instruments and we fondly refer to this as «The Research Boutique!». This year, Waters Corporation are proudly celebrating the 60th Anniversary Diamond Jubilee of Innovation in the field of analytical chemistry, by continuing to lead the way in specialty measurement techniques to answer tomorrow's questions today.

Over the last 6 decades, Waters has continued to revolutionize separations science by innovating not only scientific instrumentation, but complementary column technologies and software solutions to increase separation and detection capabilities.

During the seminar, we will take a look back at 60 Years of Innovations - Celebrating the Past with an Eye on the Future then concentrate on more recent developments to ensure successful reverse phase method transfers and to bring greater detection power to chromatographers.

Salon Azur

Waters

Salon Azur

Napoule

1. 2D-LC- A "swiss army knife" to solve chromatographic challenges? Dr. Martin Vollmer, Marketing Director, Agilent Technologies

Agilent Technologies

Do you have doubts on the purity of your analytes, even after performing modern liquid chromatography? Are you facing a lack of chromatographic resolution, thus preventing stable and robust quantitative results for your analytes? Are you dependent on manual sample preparation prior to your chromatography to obtain reasonable peak shapes?

These and more chromatographic challenges can be addressed by applying state-of-the art multidimensional HPLC without the necessity of being an expert in liquid chromatography. Agilent Technologies presents the latest solutions for 2D-LC in combination with real-life sample applications to highlight the benefits 2D-LC can contribute to the efficiency of an analytical laboratory.

2. Two-Dimensional Liquid Chromatography (2D-LC) technique: understanding the benefits with some applications by SEC-RP and FFF-RP Frédéric VIOLLEAU, head of TFFC Platform, Ecole PURPAN, Toulouse (France)

# Wednesday, 26 September 2018

LS-04

# LS-05 - Seeking More Productive Chromatography?

SCIENTIFIC Joachim Weiss, Technical Director, Thermo Fisher Scientific, Dreieich, Germany Rainer Bauder, HPLC Product Marketing, Thermo Fisher Scientific, Chelmsford, USA

As a chromatographer, productivity should be at the centre of your thoughts as it offers a multitude of benefits such as higher throughput and a lower cost per sample, increased return-on-investments, efficient bench utilisation and faster sample to knowledge, whether you are involved in research, development or routine applications. In the first part of this seminar we shall highlight our recent innovations in sample preparation, gas and ion chromatography and CDS software, all centred on improving the chromatographer's productivity and data quality. The second part of the seminar will focus on liquid chromatography and how the recently introduced Thermo Scientific™ Vanquish™ Duo in combination with new detection options allows dramatically more throughput, increased sample knowledge and quantitative information resulting in more productivity and confidence in your data.

Thermo Fisher

Ophenomenex LS-06

Do you have challenges with your current method and need help with troubleshooting? Do you want a new LC, GC or sample preparation method but are not sure where to start? Are you interested in new technologies and how they can be beneficial for your work? Come and meet our experienced technical consultants at stand 15 to talk more about your chromatographic challenges. Some surprises are waiting for you!

And don't miss our Lunchtime seminar at «Napoule» on Wednesday, 26.09.2018 at 12:45h and learn even more about Biochromatography and Peptides and Oligonucleotides! We will talk about:

SEC for Aggregate Analysis of Proteins Intact Mass and Middle Down Analysis of Monoclonal Antibodies Peptide Mapping for Sequence Variants Analysis Glycan Mapping by N-linked Glycan Release and Fluorescent Labeling And much more!

We look forward to meeting you at stand 15!





Napoule

# **POSTER INDEX**

# **Poster Sessions**

Presenters are requested to be close to their posters during their poster session to receive questions from the participants. No formal presentation is required.

### Monday, 24 September 2018

12h15 - 13h45: odd numbers 15h30 - 16h45: even numbers

PS-01 / New technologies, instrumentations and separation media for GC, HPLC and SFC

PS-02 / Miniaturized and on-chip systems

PS-03 / Process Chromatography and Monitoring

PS-04 / Complementary and Emerging Techniques (FFF...)

PS-05 / Chemometrics, Quality by Design, Data Processing

PS-06 / Multidimensional and Hyphenated Techniques

### Tuesday, 25 September 2018

12h15 - 13h45: odd numbers 15h30 - 16h45: even numbers

PS-07 / All Modes of Chromatography and Electrodriven Separation Techniques PS-08 / Clinical, Biomedical and Toxicological Analysis and Diagnosis PS-09 / Biologics PS-10 / Omics PS-11 / Mass Spectrometry Hyphenation and Applications

### Wednesday, 26 September 2018

12h30 - 13h45: odd numbers 15h45 - 17h00: even numbers

PS-12 / Foods, Natural Products, Health, Security

PS-13 / Pharmacy and Cosmetics

PS-14 / Sample Handling and Trace Analysis

## **Poster List**

PS-01 / New technologies, instrumentations and separation media for GC, HPLC and SFC (odd numbers)

- PS-01-01 A Simple and Rapid Reverse-Phased HPLC Method for Simultaneous Determination of six Types of Pyrethrins Found in Pyrethrum Extract Filip Butikoski, Dobrila Sekulovska Popovska ALKALOID AD, Skopje, Macedonia
- PS-01-03 Development and validation of sulfonamides in medicated feeding stuffs with the use of micellar liquid chromatography and diode array detection Ewelina Patyra, Monika Przeniosło-Siwczyńska, Aleksandra Grelik, Krzysztof Kwiatek National Veterinary Research Institute, Poland
- PS-01-05 Investigation of Ultra-High-Pressure Gel Permeation Chromatography for Industrial Applications Hamed Eghbali<sup>1</sup>, Lu Bai<sup>2</sup>, Miroslav Janco<sup>2</sup>, Ron Salome<sup>3</sup>, Wei Gao<sup>2</sup>, Edwin Mes<sup>3</sup>, David Meunier<sup>4</sup> <sup>1</sup>Dow Chemical, Netherlands, <sup>2</sup>Core R&D Analytical Science, The Dow Chemical Company, USA, <sup>3</sup>Core R&D Analytical Science, Dow Benelux BV, The Netherlands, <sup>4</sup>Core R&D Analytical Science, The Dow Chemical Company, USA

PS-01-07 Enantioselective Separation of New Psychoactive Substances by HPLC-UV and a Novel Lux® Amylose-1 Column

Kian Kadkhodaei, Martin Schmid, Marlene Kadisch University of Graz, Austria

PS-01-09 Unusual Thermal Behavior And Chromatographic Performances Of A New Liquid Crystal Stationary Phase In Capillary Gas Chromatography

> Faïza Ammar Khodja<sup>1</sup>, Patrick Sassiat<sup>2</sup>, Mohamed Hanafi<sup>3</sup>, Didier Thiebaut<sup>2</sup>, Jerome Vial<sup>2</sup> <sup>1</sup>LC / USTHB - Alger : Laboratoire de Chromatographie / Université des Sciences et de la Technologie Houari Boumediene - Alger., Algeria, <sup>2</sup>LSABM / ESPCI - Paris : Laboratoire de Sciences Analytiques Bioanalytiques et Miniaturisation / Ecole Supérieure de Physique et de Chimie Industrielles de la ville de Paris., France, <sup>3</sup>SIMM / ESPCI - Paris : Laboratoire de Sciences et Ingénierie de la Matière Molle / Ecole Supérieure de Physique et de Chimie Industrielles de la ville

- PS-01-11 High-Performance Liquid Chromatography Coupled with Electrochemical Detection for the Determination of Pseudomonas Aeruginosa Signaling Molecules Alyah Buzid, Phyllis E. Hayes, Gerard P. McGlacken, John, H. T. Luong, Jeremy D. Glennon University College Cork, Ireland
- PS-01-13 Synthesis and Evaluation of Novel Chiral Strong Cation Exchangers for Chiral Separation of Basic Drugs

Jana Herciková, Michal Kohout University of Chemistry and Technology Prague, Czech Republic

- PS-01-15 Automatic Pre-Column Derivatization of Amino Acids by LC Vadim Kraft, Philipp Jochems, Gesa J. Schad Shimadzu Europa GmbH, Germany
- **PS-01-17** Gas Chromatographic Computer Modeling Software for Optimized Method Development Ty Kahler, Jaap De Zeeuw, Becky Wittrig, Chris Nelson, Kristi Sellers Restek Corporation, United States of America
- PS-01-19 Boronate affinity separation of β-NAD via molecularly imprinted silica particles in batch and microfluidic systems

Cagil Zeynep Sungu, Cigdem Kip, Ali Tuncel Hacettepe University, Turkey

PS-01-21 Molecularly imprinted monodisperse-porous, silica microbeads for folic acid determination

Bensu Alan, Cigdem Kip, Ali Tuncel Hacettepe University, Turkey

PS-01-23 Titania based immobilized metal affinity sorbent for the purification of histidine-rich proteins

Sezgi Alpaslan, Rukiye Babacan Tosun, Cigdem Kip, Bensu Alan, Ali Tuncel Hacettepe University, Turkey

- PS-01-25 Revealing Secondary Interactions in Novel HILIC Stationary Phases Resulted from Particular Surface Hydrophilization Technique Alla Chernobrovkina, Alexander Popov, Natalya Chikurova, Aleksandra Zatirakha, Alexander Smolenkov, Oleg Shpigun Lomonosov Moscow State University, Russia
- PS-01-27 Fast Supercritical Fluid Chromatography Enantioseparation of Novel Synthetic Spirobrassinin Analogs

Kveta Kalikova<sup>1</sup>, Oleksandr Kozlov<sup>2</sup>, Mariana Budovska<sup>2</sup>, Tatana Gondova<sup>2</sup>, Eva Tesarova<sup>3</sup> <sup>1</sup>Univerzita Karlova, Prirodovedecka Fakulta, Czech Republic, <sup>2</sup>Faculty of Science, P.J. Šafárik University, Košice, Slovakia, <sup>3</sup>Faculty of Science, Charles University, Prague, Czech Republic PS-01-29 New GC Inlet Liner Deactivation Exhibits Excellent Response for Active Compounds Jaap Dezeeuw

Restek, Netherlands

- **PS-01-31** How to: Immobilization of ligands onto silica monoliths Petra Lewits, Benjamin Peters, Gisela Jung, Peter Knoell, Tom Kupfer, Egidijus Machtejevas *Merck KGaA, Germany*
- PS-01-33 Enantioselective Chromatography for the Determination of Histidine Dipeptides in Food and Food Supplements

Ettore Gilardoni<sup>1</sup>, Laura Fumagalli<sup>1</sup>, Lucia Pucciarini<sup>2</sup>, Veronica Marrone<sup>1</sup>, Roccaldo Sardella<sup>2</sup>, Marina Carini<sup>1</sup>, Giancarlo Aldini<sup>1</sup>, Luca Regazzoni<sup>1</sup> <sup>1</sup>Università degli studi di Milano, Italy, <sup>2</sup>Università degli studi di Perugia, Italy

PS-01-35 Development of a Novel Immobilised Type Polysaccharide Chiral Stationary Phase for Enantiomeric Separation

> Daniel Esser<sup>1</sup>, Masahide Kobayashi<sup>2</sup>, Toshikazu Adachi<sup>2</sup>, Takehiro Iwadate<sup>2</sup>, Tsuyoshi Watabe<sup>2</sup>, Noritaka Kuroda<sup>2</sup>

<sup>1</sup>YMC Europe GmbH, Germany, <sup>2</sup>YMC Co., Ltd., Japan

- PS-01-37 Combined Use of Cyclofructans and an Amino Acid Ester-Based Ionic Liquid for the Enantioseparation of Huperzine A and Coumarin Derivatives in CE. Ioannis Stavrou, Constantina Kapnissi-Christodoulou University of Cyprus, Cyprus
- **PS-01-39** Influence of the Acid-Base Ionization in RP-HPLC Retention Marti Roses, Elisabet Fuguet, Sara Soriano-Messeguer Universitat de Barcelona, Spain
- PS-01-41 Comparison of Different Aryl Chemically Bonded Core-Shell Phases for the Determination of Mycotoxins with Liquid Chromatography Tandem Mass Spectrometry Hans Rainer Wollseifen, Torsten Kretschmer, Aliye Mengus-Kaya, Max Arens MACHEREY -NAGEL GmbH Co. KG, Germany
- PS-01-43 Unique GC Column Selectivity for Time and Cost-efficient Separation of Complex cis/ trans Fatty Acid Methyl Esters in Food Garlet Benoit, Frederic Thiebaut, Ramkumar Dhandapani Phenomenex, France
- PS-01-45 Development and Application of Different Octadecylsilane Core-Shell Columns in Liquid Chromatography Tandem Mass Spectrometry Hans Rainer Wollseifen, Daniel Ramb, Torsten Kretschmer, Aliye Mengus-Kaya, Max Arens MACHEREY -NAGEL GmbH Co. KG, Germany
- PS-01-47 Interaction of Viscous Fingering and Langmuir Adsorption in Preparative Liquid Chromatography

Michel Martin<sup>1</sup>, Chinar Rana<sup>2</sup>, Satyajit Pramanik<sup>3</sup>, Anne De Wit<sup>2</sup>, Manoranjan Mishra<sup>4</sup> <sup>1</sup>CNRS ESPCI, France, <sup>2</sup>Université Libre de Bruxelles, Belgium, <sup>3</sup>Royal Institute of Technology and Stockholm University, Sweden, <sup>4</sup>Indian Institute of Technology Ropar, India

## PS-01-53 Investigation of enantioseparation in vancomycin chiral column,

Mostafa Shahnani<sup>1</sup>, Alireza Ghassempour<sup>2</sup>, Ahmad Mehdi<sup>3</sup>, Didier Thiebaut<sup>4</sup> <sup>1</sup>ESPCI, France, <sup>2</sup>Medicinal Plants and Drug Research Institute, Shahid Beheshti university, G.C; Evin, Tehran, <sup>3</sup>Institut Charles Gerhardt de Montpellier, UMR 5253, CNRS-ENSCM-UM, Université de Montpellier, France, <sup>4</sup>Ecole Supérieure de Physique et de Chimie Industrielles de la ville de Paris, France PS-01 / New technologies, instrumentations and separation media for GC, HPLC and SFC (even numbers)

PS-01-02 Application of micellar liquid chromatography for determination of tetracycline antibiotics in medicated feedingstuffs with the use HPLC-DAD

Ewelina Patyra, Monika Przeniosło-Siwczyńska, Aleksandra Grelik, Krzysztof Kwiatek National Veterinary Research Institute, Poland

PS-01-04 Influence of Alkyl Spacer on the Chromatographic Behaviors of Novel Mesogenic **Bioactive Phases for GC** 

> Ouassila Ferroukhi<sup>1</sup>, Nihad Mermat<sup>1</sup>, Valerie PEULON-AGASSE<sup>2</sup>, Marie Vaccaro<sup>2</sup>, Pascal Cardinael<sup>2</sup>, Moulav Hassene Guermouche<sup>1</sup>

> <sup>1</sup>Laboratoire de Chromatographie, Faculté de Chimie, Université des Sciences et de la Technologie USTHB, Algeria, <sup>2</sup>Normandie Univ, EA-3233, Laboratoire SMS, Univ Rouen, France

#### PS-01-06 A new approach of supercritical fluid chromatography coupled with online supercritical fluid extraction for biological samples

Yoshiyuki Watabe, Tetsuo lida, Shinichi Kawano, Yoshihiro Hayakawa Shimadzu, Japan

PS-01-08 Successful application of Supercritical Fluid Chromatography (SFC) to support Drug Discoverv

> David Corens<sup>1</sup>, David Speybrouck<sup>2</sup>, Michel Carpentier<sup>3</sup>, Sébastien Thomas<sup>2</sup>, Kristien Raeymaekers<sup>3</sup> <sup>1</sup>Janssen Pharmaceutica NV / Johnson & Johnson, Belgium, <sup>2</sup>Janssen Research and Development France, France, <sup>3</sup> Janssen Pharmaceutica NV, Belgium

- PS-01-10 Improvement of Biphenyl Sorbents by Bulky Substituents Helmut Riering, Natalie Bilmann, Maria Ganin Macherey-Nagel, Germany
- PS-01-12 Reversed phase separation of proteins by alkyl functionalized organosilicon monolith Fatoş Çiğdem Kip<sup>1</sup>, Ali Tuncel<sup>1</sup>, Michael Lämmerhofer<sup>2</sup> <sup>1</sup>Hacettepe University, Turkey, <sup>2</sup>University of Tübingen, Germany
- PS-01-14 Influence of Primary Amine Structure in Hyperbranched Functional Layer on the Performance of Anion Exchangers for Ion Chromatography Anna Uzhel, Anastasia Gorbovskaja, Aleksandra Zatirakha, Alexander Smolenkov, Oleg Shpigun Lomonosov Moscow State University, Russia
- PS-01-16 Influence of Porous Polystyrene-Divinylbenzene Particles Morphology on their Performance in Reversed Phase HPLC and Ion Chromatography Alexey Loshin<sup>1</sup>, Yuliana Porukova<sup>2</sup>, Aleksandra Zatirakha<sup>2</sup>, Alexander Smolenkov<sup>2</sup>, Oleg Shpigun<sup>2</sup> <sup>1</sup>Lomonosov Moscow State University, Russia, <sup>2</sup>Moscow State University, Russia
- PS-01-18 A microfluidic system based on an organosilicon monolith for affinity separation of histidine-tagged proteins

Fatos Ciğdem Kip, İlkay Kocer, Fatma Cambay, Eda Celik Akdur, Ali Tuncel Hacettepe University, Turkey

- PS-01-20 A Microfluidic System for Immobilized Metal Affinity Separation of Phosphoproteins Cigdem Kip, Duygu Yildirim, Cagil Zeynep Sungu, Ali Tuncel Hacettepe University, Turkey
- PS-01-22 Development and Characterization of a Novel HILIC Stationary Phase Modified with Poly(glycidyl methacrylate) Using Surface Initiated-Atom Transfer Radical Polymerization Ashin Taniguchi, Tohru Ikegami Kyoto Institute of Technology, Japan

PS-01-24 Evaluating the Applicability of Alternative Substrates in Hydrophilic Interaction Chromatography

> Alexander Popov, Alla Chernobrovkina, Kirill Domnikov, Alexander Smolenkov, Oleg Shpigun Lomonosov Moscow State University, Russia

PS-01-26 Carryover Improvement Achieved Through Instrument Design Changes and Needle Wash Optimization for HPLC Systems

Amanda Dlugasch, Jennifer Simeone, Patricia McConville Waters Corporation, United States of America

PS-01-30 Separation of Enantiomers of Panthenol by HPLC Method with Different Types of Chiral Stationary Phases

Anna Lomenova, Katarína Hroboňová, Terézia Šolonyová Slovak University of Technology in Bratislava, Faculty of Chemical and Food Technology, Slovakia

- PS-01-32 Modern SFC in QC laboratories Claudio Brunelli Pfizer, United Kingdom
- PS-01-34 Amphiphilic polymer modified monodisperse calcium carbonate microspheres for application in separation materials

Yuki Hiruta, Mai Mochida, Yuta Nagai, Hiroto Kumagai, Hiroaki Imai, Daniel Citterio *Keio University, Japan* 

PS-01-36 Synergistic Enantioseparation Systems With Either Cyclodextrins or Cyclofructans and L-Alanine Tert Butyl Ester Lactate

Athina Nicolaou, Maria Mavroudi, Ioannis Stavrou, Constantina Kapnissi-Christodoulou University of Cyprus, Cyprus

PS-01-38 Chiral Separations by Using Cyclodextrin- and Cyclofructan-Based Chiral Stationary Phases in HPLC

Eliana Agathokleous, Constantina P. Kapnissi-Christodoulou University of Cyprus, Cyprus

- PS-01-40 Comparison of Different Aryl Chemically Bonded Phases for the Determination of Primary Aromatic Amines with Liquid Chromatography Tandem Mass Spectrometry Hans Rainer Wollseifen, Torsten Kretschmer, Aliye Mengus-Kaya, Max Arens MACHEREY-NAGEL GmbH Co. KG, Germany
- PS-01-42 Development of a Multiproduct Method for the Analysis of Cholesterol-Lowering Drugs by Ultra High Performance Supercritical Fluid Chromatography (UHPSFC) and Chemometrics Márcia Cristina Breitkreitz, Igor Miranda Santana, José Licarion Pinto Segundo Neto, Lucília Vilela de Melo, Isabel Cristina S. F. Jardim, Douglas Neil Rutledge UNICAMP, Brazil
- PS-01-44 Quinine-Based Zwitterionic Stationary Phases: Exploring Retention and Enantioseparation Mechanisms in Supercritical Fluid Chromatography

Adrien Raimbault<sup>1</sup>, Cam Mai Anh Ma<sup>1</sup>, Pascal Bonnet<sup>1</sup>, Martina Ferri<sup>2</sup>, Michael Lämmerhofer<sup>2</sup>, Caroline West<sup>1</sup>

<sup>1</sup>University of Orleans, ICOA, CNRS UMR 7311, France, <sup>2</sup>University of Tübingen, Institute of Pharmaceutical Sciences, Pharmaceutical (Bio-) Analysis, Germany

### PS-01-46 Examination of the Mass-Transfer in Liquid Chromatography Columns using Total Pore Blocking and Flow-Reversal Methods

Nándor Lambert<sup>1</sup>, Attila Felinger<sup>2</sup> <sup>1</sup>MTA-TKI, Hungary, <sup>2</sup>University of Pécs, Department of Analytical and Environmental Chemistry, Hungary

# PS-01-48 A Systematic approach towards Chiral Method Development in early phase product development- An overview

Nilesh Joshi<sup>1</sup>, Balaji Dhamarlapati<sup>2</sup>, Prabakaran Narayanan<sup>2</sup>, Athimoolam Pillai<sup>2</sup>, Laura Blue<sup>3</sup>, Jason Tedrow<sup>3</sup>

<sup>1</sup>Syngene Amgen Research and Development Center (SARC), Syngene International Ltd. Bangalore, India, <sup>2</sup>Syngene International Ltd, India, <sup>3</sup>Amgen Inc., India

### PS-02 / Miniaturized and on-chip systems (odd numbers)

- **PS-02-01** Microfluidic Electro-driven Spatial Chip for Multidimensional Separations Noor Abdulhussain, Suhas Nawada, Peter J. Schoenmakers Van 't Hoff Institute for Molecular Science (HIMS), Faculty of Science, The Netherlands
- PS-02-03 Polymer Monoliths in Poly(ethylene-co-tetrafluoroethylene) Tubing as Chromatographic Supports for Microbore HPLC

Mónica Catalá-Icardo<sup>1</sup>, Sagrario Torres-Cartas<sup>2</sup>, Susana Meseguer-Lloret<sup>2</sup>, Carmen Gómez-Benito<sup>2</sup>, Ernesto Francisco Simó-Alfonso<sup>1</sup>, José Manuel Herrero-Martínez<sup>1</sup> <sup>1</sup>Universitat de València, Spain, <sup>2</sup>Instituto de Investigación para la Gestión Integrada de Zonas Costeras, Campus de Gandía, Universitat Politècnica de València, Spain

PS-02-05 Preparation of Methacrylate Monoliths in Microbore Columns by Photo-Initiation Using Poly(ethylene-co-tetrafluoroethylene) as Housing Material Mónica Catalá-Icardo<sup>1</sup>, Carlos Lloret-Mascarell<sup>2</sup>, Sagrario Torres-Cartas<sup>2</sup>, Carmen Gómez-Benito<sup>2</sup>, Susana Meseguer-Lloret<sup>2</sup>, Ernesto Francisco Simó-Alfonso<sup>1</sup>, José Manuel Herrero-Martínez<sup>1</sup> <sup>1</sup>Universitat de València, Spain, <sup>2</sup>Instituto de Investigación para la Gestión Integrada de Zonas Costeras, Campus de Gandía, Universitat Politècnica de València, Spain

### PS-02 / Miniaturized and on-chip systems (even numbers)

- PS-02-02 Selective Extraction of Cocaine and Benzoylecgonine From a Biological Sample Using a Monolithic Imprinted Capillary Coupled On-Line With Nano-Liquid Chromatography Thomas Bouvarel, Audrey Combès, Nathalie Delaunay, Valérie Pichon Department of Analytical, Bioanalytical Sciences, and Miniaturization (LSABM), UMR CBI 8231 (CNRS-ESPCI), ESPCI Paris, PSL University, France
- PS-02-04 Development and Characterization of Microbore-Methacrylate Monolithic Columns Modified With Magnetite Nanoparticles for Separation of Phosphorylated Compounds Sagrario Torres-Cartas<sup>1</sup>, Susana Meseguer-Lloret<sup>2</sup>, Carmen Gómez-Benito<sup>2</sup>, Mónica Catalá-Icardo<sup>2</sup>, Marta Domingo-Martí<sup>2</sup>, Ernesto Francisco Simó-Alfonso<sup>3</sup>, José Manuel Herrero-Martínez<sup>3</sup> <sup>1</sup>Universitat de València, Spain, <sup>2</sup>Instituto de Investigación para la Gestión Integrada de Zonas Costeras, Universitat Politècnica de València, Spain, <sup>3</sup>Department of Analytical Chemistry, Universitat de València, Spain
- PS-02-06 Separation of Casein Digests in a Microbore Monolithic Column Functionalized With Magnetic Nanoparticles

Susana Meseguer-Lloret<sup>1</sup>, Sagrario Torres-Cartas<sup>1</sup>, Mónica Catalá-Icardo<sup>1</sup>, Carmen Gómez-Benito<sup>1</sup>, Ernesto Francisco Simó-Alfonso<sup>2</sup>, José Manuel Herrero-Martínez<sup>2</sup> <sup>1</sup>Instituto de Investigación para la Gestión Integrada de Zonas Costeras, Universitat Politècnica de València, Spain, <sup>2</sup>Department of Analytical Chemistry, Universitat de València, Spain

### PS-03 / Process Chromatography and Monitoring (odd numbers)

### **PS-03-01** Quantitative Analysis of Elemental Sulfur in Pulping Liquors Stefan Böhmdorfer, Oliver Musl, Antje Potthast, Thomas Rosenau Boku - University of Natural Resources and Life Sciences, Vienna, Austria

# PS-03-03 The key role of HPTLC coupled with column purification techniques for manufacturing clinical batches in a modern API CMO production plant Pierre Bernard-Savary<sup>1</sup>, Amélie Havard<sup>2</sup>, Daniel Dron<sup>2</sup> <sup>1</sup>Chromacim Camag, France, <sup>2</sup>Oril Industrie, France

### PS-03 / Process Chromatography and Monitoring (even numbers)

PS-03-02 Split-Intein Mediated Affinity Chromatography for the Purification of a C-Intein Tagged Protein

Simona Felletti<sup>1</sup>, Nicole Ulmer<sup>2</sup>, Oliver Rammo<sup>3</sup>, Michael Schulte<sup>3</sup>, Alberto Cavazzini<sup>1</sup>, Massimo Morbidelli<sup>2</sup>

<sup>1</sup>University of Ferrara, <sup>2</sup>ETH Zürich, <sup>3</sup>Merck KGaA, Italy

PS-03-04 Development of a 2D-HPLC Method Supporting the Process Optimization of a new Protein-Based Vaccine.

Jean-Pol DEVILLE, Xavier Gérin, Pascal Gerkens, Francesco Galletto *GSK, Belgium* 

### PS-04 / Complementary and Emerging Techniques (FFF...) (odd numbers)

PS-04-01 Native Asymmetrical Flow Field-Flow Fractionation and Size-Exclusion Chromatography for Studying Aggregation of Beta-D-Galactosidase

Iro Ventouri<sup>1</sup>, Alina Astefanei<sup>2</sup>, Erwin Kaal<sup>3</sup>, Govert W. Somsen<sup>4</sup>, Peter J. Schoenmakers<sup>2</sup> <sup>1</sup>University of Amsterdam & Vrije University of Amsterdam, The Netherlands, <sup>2</sup>University of Amsterdam, Van 't Hoff Institute for Molecular Sciences-Analytical Chemistry Group, The Netherlands, <sup>3</sup>DSM Biotechnology Center, The Netherlands, <sup>4</sup>Vrije Universiteit Amsterdam, Division of BioAnalytical Chemistry, The Netherlands

PS-04-03 No doubts - How complementary chromatographic methods can support a full analytical picture in pharmaceutical drug development Petra Lewits, Holger Bauer

Merck KGaA, Germany

### PS-04-05 Tips and Tricks for TLC-MS

Monika Bäumle<sup>1</sup>, Michaela Oberle<sup>2</sup>, Stephan Altmaier<sup>2</sup>, Michael Schulz<sup>2</sup> <sup>1</sup>Sigma-Aldrich Chemie GmbH, a Merck Company, Switzerland, <sup>2</sup>Merck KGaA, Instrumental Analytics R&D, Darmstadt, Germany

PS-04-07 Modern Bioautography - A fast Analytical Tool to discover active Compounds in Plant Extracts used for Cosmetics

Monika Bäumle<sup>1</sup>, Michaela Oberle<sup>2</sup>, Janina Engemann<sup>2</sup>, Ines Klingelhöfer<sup>3</sup>, Gertud Morlock<sup>3</sup> <sup>1</sup>Sigma-Aldrich Chemie GmbH, a Merck Company, Switzerland, <sup>2</sup>Merck KGaA, Life Science, Germany, <sup>3</sup>Justus Liebig University Giessen, Institute of Nutritional Science, and Interdisciplinary Research Center, Germany

### PS-04 / Complementary and Emerging Techniques (FFF...) (even numbers)

- PS-04-02 Straightforward Process Design for the Identification and Isolation of bioactive Natural Products using Thin-Layer and Preparative Chromatography Petra Lewits, Michaela Oberle, Michael Schulte Merck KGaA, Germany
- PS-04-04 Using Modern 2D High Performance Thin Layer Chromatography coupled with MALDI-TOF-MS for a first screening approach of plant extracts Petra Lewits, Michaela Oberle Merck KGaA, Germany
- PS-04-06The Advantages of TLC as a Quick Screening and Crosscheck Method for Natural Products<br/>using the Quantification of α- and β- Acids in Hop as an Example<br/>Monika Bäumle<sup>1</sup>, Janina Engemann<sup>2</sup>, Vanessa Pilakowski<sup>2</sup>, Michaela Oberle<sup>2</sup>, Markus Burholt<sup>2</sup>,<br/>Michael Schulz<sup>2</sup><br/><sup>1</sup>Sigma-Aldrich Chemie GmbH, a Merck Company, Switzerland, <sup>2</sup>Merck KGaA, Germany

### PS-05 / Chemometrics, Quality by Design, Data Processing (odd numbers)

- PS-05-01 Using Free, High-Performance, Computer Modeling Software to Simulate Gas Chromatographic Separations Jaap Dezeeuw Restek, Netherlands
- **PS-05-03** Enhanced workflows in GC×GC data processing Laura McGregor<sup>1</sup>, Aaron Parker<sup>1</sup>, Joe Blanch<sup>2</sup>, Patrick Henry<sup>2</sup>, Nick Bukowski<sup>1</sup> <sup>1</sup>SepSolve Analytical, United Kingdom, <sup>2</sup>Markes International, United Kingdom
- PS-05-05 Compliance to the Latest Recommendations on Chromatographic Assay Methods Validation with a Dedicated Software Jean-Marc Roussel<sup>1</sup>, Michel Righezza<sup>2</sup> <sup>1</sup>JM ROUSSEL, France, <sup>2</sup>Aix-Marseille Université, France
- PS-05-07 Principle component analysis and quantification of anthocyanin patterns in coloured wheat by high-performance thin-layer chromatography Stefan Böhmdorfer, Josua Oberlerchner, Christina Fuchs, Thomas Rosenau, Heinrich Grausgruber Boku - University of Natural Resources and Life Sciences, Vienna, Austria
- PS-05-09 Development and Design Space Modeling of a Stability-Indicating HPLC Method for Determination of Fexofenadine, its Related Compound and Preservatives in a Suspension Dosage Form

Abdallah Salama, Hatem Mokhtar Medical Union Pharmaceuticals Co. (MUP), Egypt

PS-05-11 Science-Based Quality by Design Concept for Mass Balance Study of Forced Degradation of Rosuvastatin

Maja Hadzieva Gigovska<sup>1</sup>, Ana Petkovska<sup>1</sup>, Jelena Acevska<sup>2</sup>, Natalija Nakov<sup>2</sup>, Packa Antovska<sup>1</sup>, Sonja Ugarkovic<sup>1</sup>, Aneta Dimitrovska<sup>2</sup>

<sup>1</sup>Alkaloid AD Skopje, Macedonia, <sup>2</sup>Faculty of Pharmacy, University "Ss Cyril and Methodius", Macedonia

PS-05-13 Quality by Design Approach for HPLC Method Development on Vancomycin Based Stationary Phase

Magy Herz<sup>1</sup>, Hassan Aboul-Enein<sup>2</sup>, Lamia Shihata<sup>1</sup>, Rasha Hanafi<sup>1</sup> <sup>1</sup>German University in Cairo, Egypt, <sup>2</sup>National Research Center, Egypt

### PS-05-15 Application of Average Mass Spectra Combined with Multivariate Statistical Analysis in the Authentication and Quality Assurance of Ylang Ylang Essential Oils

Leo Lebanov<sup>1</sup>, Laura Tedone<sup>1</sup>, Robert Bardsley<sup>2</sup>, Massoud Kaykhaii<sup>3</sup>, Matthew R. Linford<sup>4</sup>, Brett Paull<sup>1</sup> <sup>1</sup>University of Tasmania, Australia, <sup>2</sup>Plant Therapy Inc, United States of America, <sup>3</sup>University of Sistan and Baluchestan, Iran, <sup>4</sup>Brigham Young University, United States of America

### PS-05-17 Chemometric Analysis of Ylang-Ylang (Cananga odorata) Oils

Shiladitya Chatterjee<sup>1</sup>, Leo Lebanov<sup>2</sup>, Laura Tedone<sup>2</sup>, Paul Stanger<sup>3</sup>, Massoud Kaykhaii<sup>4</sup>, Brett Paull<sup>2</sup>, Matthew R. Linford<sup>1</sup>

<sup>1</sup>Brigham Young University, United States of America, <sup>2</sup>University of Tasmania, Australia, <sup>3</sup>Plant Therapy Inc, United States of America, <sup>4</sup>University of Sistan and Baluchestan, Iran

# PS-05-19 Powerful Combination Between Analytical QbD (AQbD) and RPLC in Pharmaceutical Analysis

Ricardo Goncalves, Lucia Sousa Hovione FarmaCiência, Portugal

### PS-05 / Chemometrics, Quality by Design, Data Processing (even numbers)

- PS-05-02 An Application of Self-Organizing Maps for Clustering of Fresh Cheese with Added Nisin Producing Lactococcus Lactis Bacteria Strains Paulius Kaškonas<sup>1</sup>, Mantas Stankevičius<sup>2</sup>, Kristina Kondrotienė<sup>3</sup>, Vilma Kaškonienė<sup>2</sup>, Mindaugas Malakauskas<sup>3</sup>, Audrius Maruška<sup>2</sup> <sup>1</sup>Kaunas University of Technology, Lithuania, <sup>2</sup>Vytautas Magnus University, Lithuania, <sup>3</sup>Lithuanian University of Health Sciences, Lithuania
- PS-05-04 Expansion of the empirical retention time prediction model on the ternary isocratic method to ternary multi-step gradient method Ryunosuke Kitamura, Takefumi Kawabe Daiichi-Sankyo, Japan
- PS-05-06 Design of Experiments in Gradient Chromatography based on the Minimization of Prediction Errors

José Ramón Torres-Lapasió, Sergio López-Ureña, José Antonio Navarro-Huerta, María Celia García-Álvarez-Coque

University of Valencia, Spain

- **PS-05-08** The correctness of van't Hoff plots in chiral chromatography Annamária Sepsey, Attila Felinger University of Pécs, Hungary
- PS-05-10 A Chemometric Approach for the Development of a Chiral HPLC Method for Simultaneous Determination of Enantiomeric Impurity and Degradation Products of Rosuvastatin Natalija Nakov, Jelena Acevska, Katerina Brezovska, Liljana Anastasova, Ana Poceva Panovska, Jasmina Tonich Ribarska, Suzana Trajkovich Jolevska, Rumenka Petkovska, Aneta Dimitrovska Faculty of Pharmacy, Un. «SS. Cyril and Methodius», Macedonia

### PS-05-12 Determination of the Design Space of Chiral HPLC Separations on Chirobiotic T Stationary Phase

Nadine George<sup>1</sup>, Hassan Aboul-Enein<sup>2</sup>, Lamia Shihata<sup>1</sup>, Rasha Hanafi<sup>1</sup> <sup>1</sup>German University in Cairo, Egypt, <sup>2</sup>National Research Center, Egypt

### PS-05-14 Chemometrically Treatment of Optimisation by Factorial Design

Josep Esteve-Romero<sup>1</sup>, Juan Peris Vicente<sup>2</sup>, Jaume Albiol Chiva<sup>1</sup>, Samuel Carda Broch<sup>1</sup>, Misericordia Jiménez<sup>3</sup>, José Vicente Gimeno Adelantado<sup>2</sup>, José Vicente Gómez<sup>3</sup>, Andrea Tarazona<sup>3</sup>, Rufino Mateo Castro<sup>2</sup>, Eva Mateo<sup>4</sup>

<sup>1</sup>Química Bioanalítica, QFA, ESTCE, Universitat Jaume I, Castelló, Spain, <sup>2</sup>Department of Analytical Chemistry, University of Valencia, Spain, <sup>3</sup>Department of Microbiology and Ecology, University of Valencia, Spain, <sup>4</sup>Institute for Research INCLIVA, Microbiology Service, Spain

# PS-05-16 Application of Average Mass Spectra Combined with Multivariate Statistical Analysis in the Identification of Different Essential Oils

Leo Lebanov<sup>1</sup>, Laura Tedone<sup>1</sup>, Robert Bardsley<sup>2</sup>, Massoud Kaykhaii<sup>3</sup>, Matthew R. Linford<sup>4</sup>, Brett Paull<sup>1</sup> <sup>1</sup>University of Tasmania, Australia, <sup>2</sup>Plant Therapy Inc, United States of America, <sup>3</sup>University of Sistan and Baluchestan, Iran, <sup>4</sup>Brigham Young University, United States of America

### PS-05-18 The Importance of Analytical Method Robustness Modelling for Successful Method Transfer

Ricardo Goncalves, Antonio Ramos Hovione FarmaCiência, Portugal

### PS-06 / Multidimensional and Hyphenated Techniques (odd numbers)

- **PS-06-01** Online Heart-Cutting Liquid Chromatographic Analysis of Ramelteon in Human Serum Ahmet Olcay Sagirli<sup>1</sup>, Armagan Önal<sup>1</sup>, Sidika Ertürk Toker<sup>1</sup>, S. Evrim Kepekci Tekkeli<sup>2</sup> <sup>1</sup>Istanbul University, Faculty of Pharmacy, Turkey, <sup>2</sup>Bezmialem Vakıf University, Turkey
- PS-06-03 Evaluation of Stationary Phase Film Thickness For Short Coated Gas Chromatography Capillary Columns

Myriam Bonose<sup>1</sup>, Murphy Elouma Ndinga<sup>2</sup>, Alain Tchapla<sup>2</sup> <sup>1</sup>LETIAM, Lip(Sys)2, Univ. Paris-Sud, Université Paris Saclay, France, <sup>2</sup>Lip(Sys)2, LETIAM, Univ. Paris Sud, Université Paris-Saclay, France

PS-06-05 Effective Determination of Pharmaceutical Impurities by Two-Dimensional Liquid Chromatography (2D-LC) Isabelle Francois<sup>1</sup>, Zhimin Li<sup>2</sup>

<sup>1</sup>Waters Corporation, France, <sup>2</sup>Waters, United States of America

- PS-06-07 Enabling challenging Separation Modes in Two-dimensional Liquid Chromatography to enhance targeted Analysis in Polymers Stephan Buckenmaier<sup>1</sup>, Antje Wegener<sup>2</sup>, Matthias Pursch<sup>2</sup> <sup>1</sup>Agilent Technologies, Germany, <sup>2</sup>Dow Deutschland Anlagen GmbH, Germany
- PS-06-09 Simultaneous Determination of Neurotransmitters and Endocannabinoids Using Dansyl Derivatization and Online Column-Switching Liquid Chromatography Maria Baranyi, Beata Sperlagh Institute of Experimental Medicine Hungarian Academy of Sciences, Hungary
- PS-06-11 GC-IR Hyphenation and Quantum-Chemical Spectra Simulation a Fruitful Cooperation of Experiment and Theory for Difficult Structure Elucidations Reinhard Doetzer, Susanne Salzmann, Sandra Steiner, Gabriele Steffen, Michaela Stritzinger BASF SE, Germany
- **PS-06-13 AMD-HPTLC-EDA-HRMS as a new comprehensive tool for complex samples.** Pierre Bernard-Savary<sup>1</sup>, Stefan Weiss<sup>2</sup>, Wolfgang Schulz<sup>2</sup> <sup>1</sup>Chromacim Camag, France, <sup>2</sup>Zweckverband Landeswasserversorgung, Germany

- PS-06-15 Preparative Comprehensive Two-Dimensional Chromatography: Comparison of CPCxLC and PrepLCxLC for the Isolation of Multiple Targets from Edelweiss Plant. Léa Marlot<sup>1</sup>, Magali Batteau<sup>2</sup>, Karine Faure<sup>2</sup> <sup>1</sup>EZUS, France, <sup>2</sup>Institut des Sciences Analytiques ISA Lyon, France
- PS-06-17 On-line comprehensive two-dimensional liquid separations for impurity analysis in nitric acid-rich industrial reaction mixtures Florent Rouvière<sup>1</sup>, Eric Tuva<sup>2</sup>, Karine Faure<sup>3</sup>, Candice Grivel<sup>2</sup>, Sabine Heinisch<sup>3</sup> <sup>1</sup>EZUS LYON, France, <sup>2</sup>CRTL Solvay Rhodia, France, <sup>3</sup>Institut des sciences analytiques, France
- **PS-06-19** Evaluation of quadrupole based comprehensive GcxGC system for MOSH/MOAH analysis Erich Leitner, Andrea Walzl *TU Graz, Analytical Chemistry and Food Chemistry, Austria*
- PS-06-21 A Multi-Detector Set-up Comprising UV/Vis, Charged Aerosol and Single Quadrupole Mass Spectrometric Detection for Comprehensive Quantitative Sample Analysis Tim Cross, Stephan Meding, Katherine Lovejoy, Martin Samonig, Frank Hoefler, Remco Swart, Martin Ruelh Thermo Fisher Scientific, United Kingdom

### PS-06 / Multidimensional and Hyphenated Techniques (even numbers)

- **PS-06-02** Fast and efficient group-type analysis by GC×GC Laura McGregor<sup>1</sup>, Aaron Parker<sup>1</sup>, Steve Smith<sup>2</sup>, Nick Bukowski<sup>1</sup> <sup>1</sup>SepSolve Analytical, United Kingdom, <sup>2</sup>Markes International, United Kingdom
- PS-06-04 Untargeted Comprehensive Two-Dimensional Liquid Chromatography: a Yeast Lipidomic Study

Miriam Carolina Pérez Cova<sup>1</sup>, Romà Tauler<sup>2</sup>, Joaquim Jaumot<sup>2</sup> <sup>1</sup>Consejo Superior de Investigaciones Científicas (CSIC-IDAEA), Spain, <sup>2</sup>IDAEA-CSIC, Spain

PS-06-06 Potential and limitations of off-line comprehensive two-dimensional separation of petroleum sample by SECxRPLC-ICP-MS/MS Marie Bernardin<sup>1</sup>, Frédérique Bessueille<sup>2</sup>, Agnès Le Masle<sup>1</sup>, Charles-Philippe Lienemann<sup>1</sup>, Sabine Heinisch<sup>2</sup>

<sup>1</sup>IFPEN, France, <sup>2</sup>Institut des Sciences Analytiques, France

PS-06-08 Biochrom- Development of an On-Line High-Performance Liquid-Chromatography Hyphenation with Biochemical Detection (HPLC-BCD) for Tracking Antioxidant Compounds in Natural Extracts

Lionel Paillat<sup>1</sup>, Eric Bordier<sup>2</sup>, Michel Seite<sup>2</sup>, Sakina Mezzache<sup>2</sup>, Brice Bonnet<sup>2</sup> <sup>1</sup>L'Oréal, France, <sup>2</sup>L'Oréal Research and Innovation, France

- PS-06-10 Direct Analysis of Oligonucleotides with Online Desalting Using Heart-Cutting Two Dimensional Liquid Chromatography (2D-LC) Clarissa Dickhut, Sonja Krieger Agilent Technologies R&D and Marketing GmbH & Co. KG, Germany
- **PS-06-12** Increasing Sample Throughput Using Parallel Column Regeneration Zhimin Li, Paula Hong, Patricia McConville Waters, United States of America
- PS-06-14 On-line HILICxRPLC Separation of Complex Peptide Sample Soraya Chapel, Sabine Heinisch INSTITUT DES SCIENCES ANALYTIQUES, France

PS-06-16 Two-Dimensional Preparative Chromatography: Isolation of High Molecular Weight Compounds from Lignin Bio-Oil Using CPCxSFC

> Coraline Duroux<sup>1</sup>, Magali Batteau<sup>1</sup>, Chantal Lorentz<sup>2</sup>, Dorothée Laurenti<sup>2</sup>, Karine Faure<sup>1</sup> <sup>1</sup>Institut des Sciences Analytiques ISA Lyon, France, <sup>2</sup>IRCELyon, France

# PS-06-18 Comprehensive Gas Chromatography Combining With Orbitrap Based Mass Spectrometer GC<sup>G</sup>C-MS

Viet Hung Nguyen, Valérie Agasse, Stephane Marcotte, Marie Vaccaro, Pascal Cardinael Normandie Université, Laboratoire SMS-EA3233, Université de Rouen, France

### PS-06-20 Advantages of Comprehensive Two-Dimensional Liquid Chromatography on Separation and Matrix Effects in the Polyphenol Profiling of Extra Virgin Olive Oils

Adriana Arigò<sup>1</sup>, Katia Arena<sup>2</sup>, Francesco Cacciola<sup>3</sup>, Fabio Salafia<sup>1</sup>, Francesca Rigano<sup>4</sup>, Mariosimone Zoccali<sup>1</sup>, Paola Dugo<sup>1</sup>, Luigi Mondello<sup>1</sup>

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### PS-07 / All Modes of Chromatography and Electrodriven Separation Techniques (odd numbers)

PS-07-01 Acceleration of Conventional United States Pharmacopeia Methods Using Smaller Column Dimensions

Carola Thiering, Philipp Jochems, Robert Ludwig, Gesa Schad, Thomas Schüßeler Shimadzu Europa GmbH, Germany

PS-07-03 Development of Capillary Electrophoretic Method for the Separation of Isomeric Components in a Silymarin Complex Petra Riasová, Pavel Jáč, Miroslav Polášek

Charles University, Faculty of Pharmacy, Czech Republic

PS-07-05 The impact of  $\pi$ ... $\pi$  interactions on the retention and separation of oligonucleotides by ion pair chromatography

Sylwia Studzińska<sup>1</sup>, Bogusław Buszewski<sup>2</sup> <sup>1</sup>Nicolaus Copernicus University in Toruń, <sup>2</sup>Chair of Environmental Chemistry and Bioanalytics, Faculty of Chemistry, Nicolaus Copernicus University, Poland

- PS-07-07 Analysis of β Adrenoceptor Antagonists in Urine Samples using Multi-Linear Gradient Elution in Micellar Liquid Chromatography José Ramón Torres-Lapasió, José Antonio Navarro-Huerta, María José Ruiz-Ángel, María Celia García-Álvarez-Coque University of Valencia, Spain
- **PS-07-09** HILIC, Polar, and Shape Selectivity of a FluoroPhenyl Phase Ty Kahler, Becky Wittrig, Olivier Griffaton, Susan Steinike Restek Corporation, United States of America
- PS-07-11 LFER Study on the Selectivity of a HILIC Column: Methanol and Acetonitrile as Organic Solvents

Xavier Subirats<sup>1</sup>, Althea Justicia<sup>2</sup>, Michael H. Abraham<sup>3</sup>, Martí Rosés<sup>2</sup> <sup>1</sup>Universitat de Barcelona, <sup>2</sup>University of Barcelona, <sup>3</sup>University College London, Spain

PS-07-13 An Evaluation of the Robustness of a Peptide Based Column Characterisation Protocol Jennifer Field<sup>1</sup>, Melvin Euerby<sup>2</sup>, Patrik Petersson<sup>3</sup> <sup>1</sup>Shimadzu Europa GmbH, <sup>2</sup>University of Strathclyde / Shimadzu, <sup>3</sup>Novo Nordisk, Germany

### PS-07-15 Effect of Column Packing Procedure on the Column Ends Structure and Bed Heterogeneity - Experiments with Flow-Reversal

Dóra Zelenyánszki<sup>1</sup>, Nándor Lambert<sup>2</sup>, Fabrice Gritti<sup>3</sup>, Attila Felinger<sup>4</sup> <sup>1</sup>Magyar Elválasztástudományi Társaság, <sup>2</sup>MTA-PTE Molecular Interactions in Separation Science Research Group, <sup>3</sup>Waters Corporation, Instrument/Core Research/Fundamental, <sup>4</sup>University of Pécs, MTA-PTE Molecular Interactions in Separation Science Research Group, Hungary

PS-07-17 Chromatographic Retentive Behaviour of Pseudomonas Aeruginosa Cell-Cell Signalling Molecules in the Development of a Liquid Chromatography-Mass Spectrometry Method Phyllis Hayes, Emma C. Birney, Alyah Buzid, Jeremy D. Glennon University College Cork, Ireland

### **PS-07-19** Purification of Anastrozole with Centrifugal Partition Chromatography Dóra Rutterschmid, Erika Jantyikné Tamás, Márton Czirók, Dávid Nagy RotaChrom Technologies Ltd., Hungary

### PS-07-21 Competitive Adsorption in Supercritical Fluid Chromatography: A Model Csanád Rédei<sup>1</sup>, Attila Felinger<sup>2</sup> <sup>1</sup>Magyar Elválasztástudományi Társaság, <sup>2</sup>University of Pécs, MTA-PTE Molecular Interactions in

<sup>1</sup>Magyar Elválasztástudományi Társaság, <sup>2</sup>University of Pécs, MTA-PTE Molecular Interactions in Separation Science Research Group, Hungary

### PS-07-23 Modeling the Nonlinear Gradient Behavior of a Pharmaceutical Relevant Peptide in RP-LC

Chiara De Luca<sup>1</sup>, Martina Catani<sup>2</sup>, Simona Felletti<sup>2</sup>, Marco Visentin<sup>3</sup>, Walter Cabri<sup>3</sup>, Antonio Ricci<sup>3</sup>, Alberto Cavazzini<sup>4</sup>

<sup>1</sup>University of Ferrara, <sup>2</sup>Università degli Studi di Ferrara - Dept. Chemistry&Pharmaceutical Sciences, <sup>3</sup>Fresenius Kabi iPSUM s.r.l., via San Leonardo 23, 45010, Villadose (Ro), Italy, <sup>4</sup>Università degli Studi di Ferrara - Dept. Chemistry&Pharmaceutical Science, Italy

### PS-07-25 Influence of the Immobilization Chemistry on Chromatographic Features of Reversed Phase/Weak Anion-Exchange Mixed Mode Silica Gel

Stefanie Bäurer, Aleksandra Zimmermann, Jeannie Horak, Michael Lämmerhofer Institute of Pharmaceutical Sciences, Pharmaceutical (Bio-) Analysis, University of Tübingen, Germany

# PS-07-27 Qualitative and quantitative determination of Cathinones as new drugs of abuse in humane urine by GC-MS and HPLC-UV

Elisabeth Pendl<sup>1</sup>, Martin Schmid<sup>2</sup>, Claudia Braunstein<sup>2</sup>, Michael Hiden<sup>3</sup>, Max Foissner<sup>3</sup> <sup>1</sup>University of Graz; Institute of Pharmaceutical Sciences, <sup>2</sup>Institute of Pharmaceutical Sciences Graz, <sup>3</sup>IKA Graz, Austria

### PS-07-29 Determination of Androstenone, Indole and Skatole in Porcine Serum by LC-MS/MS Method

Barbara Woźniak, Sebastian Witek, Iwona Matraszek-Zuchowska, Andrzej Posyniak National Veterinary Research Institute, Poland

### PS-07-31 Synthesis and Evaluation of Hybrid Organic/Inorganic Particles for Biomolecular Separations

Nicole Lawrence, Kevin Wyndham, Jessica Sargent, Kenneth Glose, Edward Bouvier, Susan Rzewuski, Matthew Lauber, Stephan Koza, Thomas Walter *Waters Corporation, United States of America* 

### PS-07-33 Best Practices for Generating Reliable and Robust Liquid Chromatography Methods Using Long Shallow Gradients

Jennifer Simeone, Paula Hong Waters Corporation, United States of America

- PS-07-35 Recent Developments in Wastewater Analysis by Gas Chromatography Grzegorz Boczkaj Gdansk University of Technology, Faculty of CHemistry, Department of Chemical and PRocess Engineering, Poland
- PS-07-37 Control of Molecular Interactions between Liposomal Stationary Phase by Magnetic Force for High Performance Separation Yukihiro Okamoto, Ryo Kawakami, Masayori Suwa, Keishi Suga, Hiroshi Umakoshi Osaka University, Japan
- PS-07-39 Carbon Dots as Double-Agents: Mediators of ssDNA and Metalloprotein Mobility, and Facilitators of Label-Free Fluorescence Detection in ctITP Assays. Christa Colyer, Debashish Roy, Leona Sirkisoon Wake Forest University, United States of America
- **PS-07-41** Determination of Polyphenolic Content of Carobs, Cultivated in Cyprus Atalanti Christou, Constantina P. Kapnissi-Christodoulou University of Cyprus, Cyprus
- PS-07-43 Development of CE/MS methodologies for the analysis of monoclonal antibodies Meriem Dadouch<sup>1</sup>, Claudia Bich<sup>2</sup>, Yoann Ladner<sup>2</sup>, Gaëlle Coussot<sup>2</sup>, Christian Larroque<sup>3</sup>, Catherine Perrin<sup>2</sup>

<sup>1</sup>Université de Montpellier, <sup>2</sup>Institut des Biomolécules Max Mousseron, <sup>3</sup>Institut de recherche en Cancérologie de Montpellier, France

**PS-07-45** Investigation of imatinib mesylate peak splitting in the presence of salt in capillary zone electrophoresis by means of Simul new version and Peakmaster computational tools. Omar Ahmed<sup>1</sup>, Michal Malý<sup>2</sup>, Yoan Ladner<sup>3</sup>, Laurent Philibert<sup>4</sup>, Catherine Perrin<sup>3</sup>, Pavel Dubsky<sup>5</sup> <sup>1</sup>Université de Montpellier, France, <sup>2</sup>Department of Physical and Macromolecular Chemistry, Faculty of Science, Charles University in Prague, Albertov, <sup>3</sup>Institut des Biomolécules Max Mousseron (IBMM), UMR 5247-CNRS-UM-ENSCM, Montpellier, France <sup>4</sup>Institut régional du Cancer de Montpellier (ICM), Département de Pharmacie et Pharmacologie, Montpellier, France <sup>5</sup>Department of Physical and Macromolecular Chemistry, Faculty of Science, Charles University in Prague, Albertov, Prague

### PS-07 / All Modes of Chromatography and Electrodriven Separation Techniques (even numbers)

PS-07-02 Chromatographic properties of L-cystein-modified gold-coated copolymer styrenedivinylbenzene

> Irina Ananyeva, Daria Prosuntsova, Andrey Plodukhin, Elena Shapovalova Lomonosov Moscow State University, Chemistry Department, Russia

PS-07-04 Analysis of Modified Oligonucleotides with the Use of Ion Pair Reversed-Phase Ultra High Performance Liquid Chromatography

Anna Kaczmarkiewicz, Łukasz Nuckowski, Sylwia Studzińska, Bogusław Buszewski Nicolaus Copernicus University in Toruń, Poland

- PS-07-06 Evaluation of Several Hydrophilic Interaction Liquid Chromatography Stationary Phases for Analysis of Nucleosides: Modelling the Retention Behavior María Celia García-Alvarez-Coque, Ester Peris-García, Raquel Burgos-Gil, Ana Ribera-Castelló, Juan José Baeza-Baeza, María José Ruiz-Ángel University of Valencia, Spain
- **PS-07-08** Affecting Selectivity and HILIC Retention on a FluoroPhenyl Stationary Phase Ty Kahler, Becky Wittrig, Olivier Griffaton, Susan Steinike Restek Corporation, United States of America

- **PS-07-10** Retention-pH Profiles of Acids and Bases in HILIC Xavier Subirats<sup>1</sup>, Tamara Alvarez-Segura<sup>2</sup>, Martí Rosés<sup>1</sup> <sup>1</sup>Universitat de Barcelona, Spain, <sup>2</sup>University of Valencia, Spain
- PS-07-12 Enantioseparation of Novel Psychoactive Substances by Capillary Electrophoresis Using Carboxymethyl-β-Cyclodextrin as Chiral Selector Johannes Hägele, Martin Schmid KFU Graz. Austria
- PS-07-14 Development of a Simple Chromatographic Characterisation Protocol for Strong Cation Exchange (SCX) Columns

Jennifer Field<sup>1</sup>, Ashleigh Bell<sup>2</sup>, Melvin Euerby<sup>3</sup>, Patrik Petersson<sup>4</sup> <sup>1</sup>Shimadzu Europa GmbH, Germany, <sup>2</sup>University of Strathclyde, United Kingdom, <sup>3</sup>University of Strathclyde / Shimadzu, United Kingdom/Germany, <sup>4</sup>Novo Nordisk, Denmark

PS-07-16 Investigation the Retention Mechanism on Zwitterionic Chiral Stationary Phases via Nonlinear Chromatography

Ivett Bacskay<sup>1</sup>, Renáta Kulágin<sup>2</sup>, Wolfgang Lindner<sup>3</sup>, Attila Feilnger<sup>4</sup> <sup>1</sup>MTA-TKI, Hungary, <sup>2</sup>Department of Analytical and Environmental Chemistry and Szentágothai Research Center, University of Pécs, Hungary, <sup>3</sup>Institute of Analytical Chemistry, University of Vienna, <sup>4</sup>MTA-PTE Molecular Interactions in Separation Science Research Group; Department of Analytical and Environmental Chemistry and Szentágothai Research Center, University of Pécs, Hungary

- PS-07-18 Liquid Chromatographic-Mass Spectrometric Determination of Guaiacol and its Phenolic Precursors Associated with Alicyclobacillus Contamination in Fruit Juice and Beverages Phyllis Hayes, Alyah Buzid, Jeremy D. Glennon University College Cork, Ireland
- **PS-07-20** Purification of Sugammadex using Centrifugal Partition Chromatography Erika Anna Jantyikné Tamás, Márton Czirók, Kristóf Gazda, Dávid Nagy, Dóra Rutterschmid Rotachrom Technologies Ltd., Hungary
- **PS-07-22** Enantioseparation of Cathinones and Their Metabolites in SFC-MS Natalie Kolderová<sup>1</sup>, Martin Kuchař<sup>1</sup>, Wolfgang Lindner<sup>2</sup>, Michal Kohout<sup>1</sup> <sup>1</sup>University of Chemistry and Technology Prague, Czech Republic, <sup>2</sup>Department of Analytical Chemistry, University of Vienna, Austria
- **PS-07-24** Techniques for Optimizing GC Analysis of Glycols in an Aqueous Matrix Ty Kahler, Jaap De Zeeuw, Becky Wittrig, Corby Hilliard, Kristi Sellers *Restek Corporation, United States of America*
- PS-07-26 Performance of Modified Quinine-Type Chiral Stationary Phases for the Separation of Labelled and Unlabelled Amino Acids for Structure Elucidation of Therapeutic Peptides Jeannie Horak, Aleksandra Zimmermann, Ulrich Woiwode, Michael Lämmerhofer Eberhard-Karls-University Tuebingen, Germany
- PS-07-28 Development and application of the UHPLC-MS/MS method to pharmacokinetics studies of thiouracil in calves

Sebastian Witek, Barbara Woźniak, Iwona Matraszek-Zuchowska, Andrzej Posyniak National Veterinary Research Institute, Poland

PS-07-30 Transfer and Scaling of a USP Assay for Quetiapine Fumarate across Liquid Chromatographic Systems

Amanda Dlugasch, Jennifer Simeone, Patricia McConville Waters Corporation, United States of America PS-07-32 Optimization of HILIC UHPLC-UV method for analysis of Rutin, Quercetin and Related Metabolites

Jakub Pavlík<sup>1</sup>, Veronika Pilařová<sup>1</sup>, Enrique Espinola<sup>2</sup>, Lucie Nováková<sup>1</sup> <sup>1</sup>Department of Analytical Chemistry, Faculty of Pharmacy, Charles University, Czech Republic, <sup>2</sup>University of Granada, Spain

### PS-07-34 Robustness and Accuracy of Orthogonal Phase Combinations in Pharmaceutical Related Substances Assays

Daniel Meston, William John Lough University of Sunderland, United Kingdom

# PS-07-36 Polymers reverse engineering: HPTLC has still many bright days ahead for complete deformulation

Pierre Bernard-Savary<sup>1</sup>, Patrick Van Impe<sup>2</sup> <sup>1</sup>Chromacim Camag, France, <sup>2</sup>Solvay R&I Center Brussels, Belgium

### PS-07-38 How to Efficiently Mix Long-Injection Plugs in Capillary Electrophoresis? Lenka Michalcová, Hana Nevídalová, Zdeněk Glatz Masaryk University, Faculty of Science, Department of Biochemistry, Czech Republic

### PS-07-40 Superhydrophobic Capillary Coatings for Electrophoretic Separations

Charly Renard<sup>1</sup>, Laurent Leclerq<sup>2</sup>, Antonio Stocco<sup>3</sup>, Hervé Cottet<sup>2</sup> <sup>1</sup>Faculté des Sciences de Montpellier, France, <sup>2</sup>IBMM, Univ. Montpellier, CNRS, ENSCM, France, <sup>3</sup>L2C, Uni Montpellier, France

### PS-07-42 Study of Drug-Plasma Protein Binding Parameters by CE-MS

Zdenek Glatz, Hana Nevidalova, Lenka Michalcova Masaryk University, Faculty of Science, Department of Biochemistry, Czech Republic

### **PS-07-44** Multilane capillary electrophoresis device for forensic DNA analysis Cedric Hurth<sup>1</sup>, Nitigya Kathuria<sup>2</sup>, Rongguan Liang<sup>2</sup>, Frederic Zenhausern<sup>1</sup> <sup>1</sup>Center for Applied Nanobioscience, and Medicine, United States of America <sup>2</sup>College of Opt

<sup>1</sup>Center for Applied Nanobioscience and Medicine, United States of America, <sup>2</sup>College of Optical Sciences, University of Arizona, United States of America

# PS-07-46 Development of HILIC-UHPLC-MS/MS Method for Analysis of Sofosbuvir: Use in In-Vitro Study of its Transport Mechanism and Drug-Drug Interactions

Pavlína Svobodová, Hana Kočová Vlčková, Jakub Pavlík, Ondřej Matinec, Lukáš Červený, Petr Solich, Lucie Nováková

Faculty Of Pharmacy, Charles University, Czech Republic

### PS-08 / Clinical, Biomedical and Toxicological Analysis and Diagnosis (odd numbers)

### PS-08-01 Application of ion pair chromatography coupled with mass spectrometry for the determination of antisense oligonucleotides in total RNA extracts obtained from cell cultures

Sylwia Studzińska<sup>1</sup>, Krzysztof Sobczak<sup>2</sup>, Piotr Cywoniuk<sup>2</sup>, Bogusław Buszewski<sup>3</sup> <sup>1</sup>Nicolaus Copernicus University in Toruń, Poland, <sup>2</sup>Department of Gene Expression, Institute of Molecular Biology and Biotechnology, Adam Mickiewicz University, Poland, <sup>3</sup>Chair of the Environmental Chemistry & Bioanalytics, Faculty of Chemistry, Nicolaus Copernicus University, Poland

### **PS-08-03** A Novel Solution for EtG/EtS Analysis in Urine by LC-MS/MS Ty Kahler, Becky Wittrig, Justin Steimling, Frances Carroll, Olivier Griffaton Restek Corporation, United States of America

PS-08-05 Sensitive Screening for new sychoactive substances in human urine by gc-ms Petra Gerhards<sup>1</sup>, Luzia Schaaf<sup>2</sup>, Inge de Dobbeleer<sup>1</sup>, Thierry Domenger<sup>1</sup> <sup>1</sup>Thermo Fisher Scientific, Germany, <sup>2</sup>LVR Viersen, Germany

# PS-08-07 Determination of perampanel in human serum by capillary electrophoresis with fluorescence detection

Miroslava Bursová<sup>1</sup>, Tomáš Hložek<sup>1</sup>, Radomír Čabala<sup>1</sup>, Petr Tůma<sup>2</sup> <sup>1</sup>Department of Analytical Chemistry, Faculty of Science, Charles University, Czech Republic, <sup>2</sup>Charles University, Third Faculty of Medicine, Department of Hygiene, Czech Republic

### PS-08-09 Synthesis, Characterization and Quantification by UHPLC-MS/MS of DNA Adducts from 5 OXY-PAHS for the Evaluation of Their Genotoxicity

Adeline Clerge<sup>1</sup>, Jérémie Le Goff<sup>2</sup>, Isabelle Vaudorne<sup>3</sup>, Stéphanie Lagadu<sup>3</sup>, Raphaël Delépée<sup>4</sup> <sup>1</sup>ABTE ToxEMAC, France, <sup>2</sup>ADn'tox, France, <sup>3</sup>Normandie Univ, UNICAEN, France, <sup>4</sup>PRISMM, Plateforme de Recherche et d'Innovation en Spectrométrie de Masse et Métabolomique, ICORE, France

**PS-08-11** Quantification of 17 modified Nucleosides by UHPLC-MS/MS as new cancer Biomarkers Raphaël Delépée<sup>1</sup>, Stéphanie Lagadu<sup>2</sup>, Marc Since<sup>3</sup> <sup>1</sup>Université de Caen Normandie - ABTE - CLCC F. Baclesse, France, <sup>2</sup>Normandie Université, UNICAEN, France, <sup>3</sup>Normandie Univ, UNICAEN, CERMN, France

## PS-08-13 Analysis of Cysteine Linked Antibody-Drug Conjugates Using Hydrophobic Interaction Chromatography (HIC)

Lilla Guricza, Sonja Schneider Agilent Technologies, Germany

PS-08-15 Peroxidase-like activity of magnetic, monodisperse-porous SiO2 microspheres for sensing of proteins

Cigdem Kip, Burcu Gökçal, Cihan Demir, Ali Tuncel Hacettepe University, Turkey

# PS-08-17 The levels of antioxidants and amino acids in the patients with pheochromocytoma as a model for permanent stress

Kamila Syslova<sup>1</sup>, Milos Mikoska<sup>1</sup>, Ondrej Petrak<sup>2</sup> <sup>1</sup>UCT Prague, Czech Republic, <sup>2</sup>Department of Endocrinology and Metabolism, General University Hospital in Prague, Czech Republic

### PS-08-19 Monitoring of Trans Fatty Acids in the Breast Milk of Prague Mothers Martin Jaček<sup>1</sup>, Milena Černá<sup>2</sup>, Pavel Dlouhý<sup>3</sup>, Petr Tůma<sup>3</sup>

<sup>1</sup>Third Faculty of Medicine, Czech Republic, <sup>2</sup>Department of Hygiene, Third Faculty of Medicine/ The National Institute for Public Health, Czech Republic, <sup>3</sup>Department of Hygiene, Third Faculty of Medicine, Czech Republic

## PS-08-21 Monitoring of Ochratoxin a Occurrence in The Plasma of Healthy Blood Donors by HPLC

Josep Esteve-Romero<sup>1</sup>, José Vicente Gómez<sup>2</sup>, Andrea Tarazona<sup>2</sup>, Juan Peris Vicente<sup>3</sup>, José Vicente Gimeno Adelantado<sup>3</sup>, Jaume Albiol Chiva<sup>1</sup>, Samuel Carda Broch<sup>1</sup>, Misericordia Jiménez<sup>2</sup>, Eva Mateo<sup>4</sup>

<sup>1</sup>Química Bioanalítica, QFA, ESTCE, Universitat Jaume I, Spain, <sup>2</sup>Department of Microbiology and Ecology, University of Valencia, Spain, <sup>3</sup>Department of Analytical Chemistry, University of Valencia, Spain, <sup>4</sup>Institute for Research INCLIVA, Microbiology Service, Spain

### PS-08-23 Analysis of 12 Synthetic Cannabinoids in Blood by Liquid Chromatography Tandem Mass Spectrometry

Mariami Murtazashvili<sup>1</sup>, Malkhaz Jokhadze<sup>2</sup>, Tamar Chikviladze<sup>1</sup>, Paata Tushurashvili<sup>2</sup>, Koba Sivsivadze<sup>1</sup>, Tamaz Murtazashvili<sup>1</sup>

<sup>1</sup>Tbilisi State Medical University, Georgia, <sup>2</sup>Levan Samkharauli National Forensics Bureau, Georgia

### PS-08-25 Pivaloylcarnitine Interference due to Nipple Balm Usage in Nursing Mother Identified by Second-Tier HPLC-MS/MS as Cause of False Positive Newborn Screening for Isovaleric Acidemia

Renáta Górová<sup>1</sup>, Mária Ostrožlíková<sup>2</sup>, Vladimír Bzdúch<sup>2</sup>, Gabriela Addová<sup>1</sup>, Viktória Ferenczy<sup>2</sup>, Helena Jurdáková<sup>1</sup>, Claudia Šebová<sup>2</sup>

<sup>1</sup>Institute of Chemistry, Faculty of Natural Sciences, Comenius University in Bratislava, Slovakia, <sup>2</sup>National Institute of Child Diseases, Slovakia

### PS-08-27 On the Benefits of Using CLAM-2000/LCMS2-8050 for Therapeutic Drug Monitoring of Mycophenolic Acid

Paul Lefevre<sup>1</sup>, Carole Jamey<sup>2</sup>, Daniel Brumaru<sup>2</sup>, Jean-Marc Lessinger<sup>2</sup>, Véronique Kemmel<sup>2</sup> <sup>1</sup>Laboratoire de Biochimie et de Biologie Moléculaire, France, <sup>2</sup>Biochemistry and Molecular Biology Laboratory –University Hospitals of Strasbourg, France

PS-08 / Clinical, Biomedical and Toxicological Analysis and Diagnosis (even numbers)

- **PS-08-02** A Simple Method for the Analysis of Methylmalonic Acid in Human Plasma by LC-MS/MS Ty Kahler, Becky Wittrig, Justin Steimling, Frances Carroll, Olivier Griffaton *Restek Corporation, United States of America*
- **PS-08-04** Bile Acid Profiling and Quantification in Human Plasma using LC-MS/MS Ty Kahler, Becky Wittrig, Olivier Griffaton, Frances Carroll, Dan Li Restek Corporation, United States of America

## **PS-08-06** Search of new Plasma Biomarkers for the Diagnosis of Alzheimer's Disease Emilie Rossi<sup>1</sup>, Thuy Tran<sup>2</sup>, Myriam Taverna<sup>3</sup> <sup>1</sup>Institut Galien Paris Sud, Univ. Paris-Sud, CNRS, Université Paris-Saclay, France, <sup>2</sup>Insitut Galien UMR8612, <sup>3</sup>Institut Galien UMR8612, France

**PS-08-08** Chromatographic Method Development in Early Drug Development Jenny Ottosson<sup>1</sup>, Jenny Ottosson<sup>2</sup>, Karin Carlsson<sup>2</sup>, Malin Gränfors<sup>2</sup>, Veronica Berntsson<sup>2</sup>, Henrik Kristensson<sup>2</sup>, Lena Nilsson<sup>3</sup>, Annika Träff Wergeni<sup>2</sup>, Sheller Ariai<sup>2</sup>, Angela Ku<sup>2</sup> <sup>1</sup>AstraZeneca, Sweden, <sup>2</sup>Early Product Development, Pharmaceutical Sciences, IMED Biotech Unit, AstraZeneca, Sweden, <sup>3</sup>Product Development, Pharmaceutical Technology and Development, Operations, AstraZeneca, Sweden

### PS-08-10 Determination of Exocyclic DNA Adducts Profile By UHPLC-MS/MS as potential biomarker of Genotoxicity related to Oxidative Stress

Héléna Alamil¹, Mathilde Lechevrel², Stéphanie Lagadu³, Sylvain Billet⁴, Zeina Dagher⁵, Raphaël Delépée²

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### PS-08-12 Quantification of Four Gaucher Disease Biomarkers in Plasma and Red Blood Cells: Correlation With Disease Severity and Response to Therapeutic Intervention Caroline Chipeaux<sup>1</sup>, Marine de Person<sup>1</sup>, Sylvie Héron<sup>1</sup>, Nathalie Burguet<sup>1</sup>, Mélanie Franco<sup>2</sup>, Caroline

Caroline Chipeaux', Marine de Person', Sylvie Heron', Nathalie Burguet', Melanie Franco², Caroline Le Van Kim², Fathi Moussa<sup>1</sup>

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### PS-08-14 Effects of Process Conditions on Peroxidase-Like Activity of Monodisperse-Porous Metal Oxide Microspheres Modified with Cupric Oxide Burcu Gökçal, Cigdem Kip, Rukiye Babacan Tosun, Cihan Demir, Ali Tuncel

Hacettepe University, Turkey

PS-08-16 Effects of vitamins on the peroxidase-like activity of monodisperse-porous MnO2 microspheres 5 µm in size Rukive Babacan Tosun Ciadem Kip Burcu Gökcal Ciban Demir Ali Tuncel

Rukiye Babacan Tosun, Cigdem Kip, Burcu Gökçal, Cihan Demir, Ali Tuncel Hacettepe University, Turkey

PS-08-18 Direct Amino Acids Analysis in Biological Fluids by Mixed-Mode LC-MS/MS Claude Netter, Valérie Thibert Thermo Fisher Scientific, France

### PS-08-20 Determinantion of Tyrosine Kinase Inhibitors in Human Plasma of Cancer Patients by Micellar Liquid Chromatography

Jaume Albiol Chiva<sup>1</sup>, Josep Esteve Romero<sup>1</sup>, Juan Peris Vicente<sup>2</sup>, José Vicente Gimeno Adelantado<sup>3</sup>, Diego Enrique Kassuha<sup>4</sup>, Devasish Bose<sup>5</sup>, Abhilasha Durgbanshi<sup>6</sup>, Samuel Carda Broch<sup>1</sup>, Rufino Mateo Castro<sup>3</sup>, Eva Mateo<sup>7</sup>

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# PS-08-22 Optimization and Validation by HPLC Method for Quantification of Rifampicin in Plasma and Urine Samples from Tuberculosis Patients

Jaume Albiol Chiva<sup>1</sup>, Devasish Bose<sup>2</sup>, Pooja Mishra<sup>2</sup>, Rajendra Prasad Pawar<sup>2</sup>, Abhilasha Durgbanshi<sup>3</sup>, Abhishek Jain<sup>4</sup>, Josep Esteve Romero<sup>1</sup>, Juan Peris Vicente<sup>5</sup>, Samuel Carda Broch<sup>1</sup>, Rufino Mateo Castro<sup>5</sup>, Eva Mateo<sup>6</sup>

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### PS-08-26 Pharmacogenetic of Polymorphisms in HIV and Renal Transplanted Patients

Jaume Albiol Chiva<sup>1</sup>, Diego Enrique Kassuha<sup>2</sup>, Micaela Flores<sup>2</sup>, Gerardo Castro Ocampo<sup>3</sup>, Josep Esteve Romero<sup>1</sup>, Juan Peris Vicente<sup>4</sup>, Samuel Carda Broch<sup>1</sup>, Jesús Javier Iborra Millet<sup>5</sup>, Eva Mateo<sup>6</sup> <sup>1</sup>Bioanalytical Chemistry, QFA, ESTCE, Universitat Jaume I, Castelló, Spain, <sup>2</sup>Facultat Ciencias Químicas y Tecnología, Universidad Católica de Cuyo, Spain, <sup>3</sup>Hospital Descentralizado Dr. Guillermo Rawson, Spain, <sup>4</sup>Department of Analytical Chemistry, University of Valencia, Spain, <sup>5</sup>Bioquímica Clínica, Hospital General Universitari, Castelló, Spain, <sup>6</sup>Institute for Research INCLIVA, Microbiology Service, Spain

## PS-09 / Biologics (odd numbers)

- **PS-09-01** Improvement of Separation of Monoclonal Antibodies Using Core-Shell Column Norikazu Nagae, Tomoyasu Tsukamoto, Makoto Sato *ChromaNik Technologies Inc., Japan*
- PS-09-03 Dilute-and-Shoot Analysis of Therapeutic Monoclonal Antibody Glycosylation from Fermentation Broth: A Method Capability Study Therese Wohlschlager<sup>1</sup>, Christof Regl<sup>2</sup>, Wolfgang Skala<sup>2</sup>, Christian G. Huber<sup>2</sup>

<sup>1</sup>University of Salzburg, CDL for Biosimilar Characterization, Austria, <sup>2</sup>University of Salzburg, Austria

PS-09-05 Silk sericin, a natural carrier for drug delivery, biomedical and cosmeceutical use: size distribution and structural characterization by complementary HILIC, RP and SEC-MS methods

Caterina Temporini, Sara Tengattini, Enrica Calleri, Gabriella Massolini, Sara Perteghella, Elia Bari, Maria Luisa Torre

University of Pavia, Dept. Drug Sciences, Italy

- **PS-09-07** Charge Variant Method Design for Analysis of Monoclonal Antibodies Alexander Schwahn<sup>1</sup>, Shanhua Lin<sup>2</sup>, Julia Baek<sup>2</sup>, Shane Bechler<sup>2</sup>, Stacy Tremintin<sup>2</sup> <sup>1</sup>Thermo Fisher Scientific, Switzerland, <sup>2</sup>Thermo Fisher Inc, United States of America
- PS-09-09 Quality control of synthetic biomolecules using rapid methods with serial coupling of UV and MS detectors

Joachim Weiss<sup>1</sup>, Sylvia Grosse<sup>2</sup>, Katherine Lovejoy<sup>2</sup>, Frank Steiner<sup>2</sup> <sup>1</sup>Thermo Fisher Scientific GmbH, Germany, <sup>2</sup>Thermo Fisher Scientific Germering, Germany

#### PS-09 / Biologics (even numbers)

- **PS-09-02** Biomolecule separation on silica monoliths Petra Lewits, Benjamin Peters, Gisela Jung, Peter Knoell, Tom Kupfer, Egidijus Machtejevas *Merck KGaA, Germany*
- PS-09-04 In-Depth Analytical Comparison of Infliximab and Related Biosimilars Garlet Benoit, Frederic Thiebaut Phenomenex, France
- PS-09-06 Novel workflow to introduce and Ion Exchange Chromatography of biopharmaceutical proteins into High Resolution Mass Spectrometry Ken Cook<sup>1</sup>, Jonathan Bones<sup>2</sup> <sup>1</sup>Thermo Fisher Scientific, United Kingdom, <sup>2</sup>NIBRT, Ireland
- **PS-09-08** High throughput, flexible chromatographic analysis of monoclonal antibodies Ken Cook<sup>1</sup>, Nicola McGillicuddy<sup>2</sup>, Martin Samonig<sup>3</sup>, Amy Farrell<sup>2</sup>, Jonathan Bones<sup>2</sup> <sup>1</sup>Thermo Fisher Scientific United Kingdom, <sup>2</sup>NIBRT, Ireland, <sup>3</sup>Thermo Fisher Scientific Germering, Germany

#### PS-10 / Omics (odd numbers)

PS-10-01 Derringer's desirability functions as a scoring algorithm for optimizing analytical resources in metabolomic studies

Julian Pezzatti, Víctor González-Ruiz, Santiago Codesido, Yoric Gagnebin, Julien Boccard, Serge Rudaz

University of Geneva, Switzerland

#### **PS-10-03** New insights in CE-MS-based metabolomics Nicolas Drouin, Victor Gonzalez-Ruiz, Santiago Codesido Sanchez, Serge Rudaz, Julie Schappler

University of Geneva, Switzerland

#### PS-10-05 Development and Application of a HILIC-MS/MS Method for Polar Fecal Metabolome Profiling

Nina Sillner<sup>1</sup>, Alesia Walker<sup>2</sup>, Eva-Maria Harrieder<sup>3</sup>, Philippe Schmitt-Kopplin<sup>2</sup>, Michael Witting<sup>2</sup> <sup>1</sup>Helmholtz Zentrum München GmbH, Germany, <sup>2</sup>Helmholtz Zentrum München, Germany, <sup>3</sup>Technical University of Munich, Germany

**PS-10-07** Tandem UHPLC operation for high-throughput LC-MS peptide mapping analyses Alexander Schwahn, Martin Samonig, Sabrina Patzelt, Carsten Paul, Martin Ruehl, Remco Swart Thermo Fisher Scientific Germering, Germany

#### PS-10 / Omics (even numbers)

PS-10-02 Analysis of Platelet Fatty Acids and Oxylipins by Combined Targeted and Untargeted LC-MS Method

Malgorzata Cebo, Jörg Schlotterbeck, Michael Lämmerhofer University of Tübingen, Germany

PS-10-04 Study on Extraction Protocols for UHPLC-ESI-MS/MS-Based Lipidomic Analysis of Hela Cells Carlos Calderon, Michael Laemmerhofer <sup>1</sup>Universität Tübingen, Germany

#### PS-10-06 Metabolomics in Chronic Kidney Disease: Toward a Better Understanding of Disease Progression and Hemodialysis

Yoric Gagnebin<sup>1</sup>, Julian Pezzatti<sup>1</sup>, Pierre Lescuyer<sup>2</sup>, Sophie De Seigneux<sup>3</sup>, Julien Boccard<sup>1</sup>, Serge Rudaz<sup>1</sup>, Belén Ponte<sup>3</sup>

<sup>1</sup>School of Pharmaceutical Sciences, University of Geneva, University of Lausanne, Switzerland, <sup>2</sup>Department of Genetic and Laboratory Medicine, Geneva University Hospitals (HUG), Switzerland, <sup>3</sup>Service of Nephrology, Geneva University Hospitals (HUG), Switzerland

#### PS-11 / Mass Spectrometry Hyphenation and Applications (odd numbers)

PS-11-01 HPLC-QTOF-MS Determination of the Coupling of Ammonium Dicarboxylate Salts by Esterifications with Glycol

> Lein Jan Bostelaar<sup>1</sup>, Shan Ma<sup>2</sup>, Wei Fu Dong<sup>2</sup>, Li Bo Xin<sup>3</sup> <sup>1</sup>Vishay BCcomponents, Netherlands, <sup>2</sup>HEC R&D Center Aluminum Products Division, China, <sup>3</sup>HEC

R&D Center Generics Division, China

PS-11-03 Quantification in a Soil Degradation Study by High Resolution Mass Spectrometry Michael Speitling, Klaus Reinhard BASF SE, Germany

#### PS-11-05 CE-ICP-MS as a Tool for Investigation of the Changes of Gold Nanoparticles in Human Cytosol

Joanna Legat<sup>1</sup>, Magdalena Matczuk<sup>1</sup>, Andrei Timerbaev<sup>2</sup>, Maciej Jarosz<sup>1</sup> <sup>1</sup>Chair of Analytical Chemistry, Faculty of Chemistry, Warsaw University of Technology, Poland, <sup>2</sup>Vernadsky Institute of Geochemistry and Analytical Chemistry, Poland

### PS-11-07 Comparison of UHPLC-HRMS and UHPLC-MS/MS approaches for the determination of the flavonoids and isoflavonoids

Lucia Chrenková<sup>1</sup>, Hana Kočová Vlčková<sup>2</sup>, Veronika Pilařová<sup>2</sup>, Jakub Pavlík<sup>2</sup>, Lenka Applová<sup>3</sup>, Iveta Najmanová<sup>3</sup>, Přemysl Mladěnka<sup>4</sup>, Lucie Nováková<sup>2</sup>

<sup>1</sup>Charles University, Faculty of Pharmacy in Hradec Králové, Czech Republic, <sup>2</sup>Department of Analytical Chemistry, Faculty of Pharmacy in Hradec Králové, Charles University, Czech Republic, <sup>3</sup>Department of Pharmacology and Toxicology, Faculty of Pharmacy in Hradec Králové, Charles University, Czech Republic, <sup>4</sup>Department of Biological and Medical Sciences, Faculty of Pharmacy in Hradec Králové, Charles University, Czech Republic

### PS-11-09 How the chromatography solves the ultra-trace quantification of chlordecone and some of its degradation products in epidemiology, toxicity and soil remediation contexts? Emmanuelle Bichon<sup>1</sup>, Ingrid Guiffard<sup>2</sup>, Philippe Marchand<sup>2</sup>, Christophe Mouvet<sup>3</sup>, Bruno Le Bizec<sup>2</sup> <sup>1</sup>LABERCA - Oniris - INRA -UBL, France, <sup>2</sup>LABERCA - UMR 1329 – Oniris, France, <sup>3</sup>BRGM/, Direction Eau, Environnement, Ecotechnologies, France

#### PS-11-11 Evaluation of DART-MS for Quantification of Organic Acids in urine samples

Myriam Bonose<sup>1</sup>, Maxime Bridoux<sup>2</sup>, Naira Perez Vasquez<sup>1</sup>, Diane Doummar<sup>3</sup>, Remy Couderc<sup>3</sup>, Fathi Moussa<sup>1</sup>,

<sup>1</sup>Lip(Sys)2, LETIAM, Univ. Paris Sud, Université Paris-Saclay, France, <sup>2</sup>CEA, DAM, DIF, France, <sup>3</sup>Services de Neuro-Pédiatrie et de Biochimie, Hospital Group A. Trousseau-La Roche-Guyon, APHP, France

PS-11-13 Assessment of Structural Heterogeneity of Intact Isoforms of Follicular Stimulating Hormone Using Nano-Liquid Chromatography Coupled to High Resolution Mass Spectrometry

Amira Al Matari<sup>1</sup>, Julien Camperi<sup>2</sup>, Nicolas Eskenazi<sup>3</sup>, Audrey Combès<sup>4</sup>, Jean Guibourdenche<sup>5</sup>, Thierry Fournier<sup>6</sup>, Joëlle Vinh<sup>7</sup>, Valérie Pichon<sup>8</sup>, Nathalie Delaunay<sup>8</sup>

<sup>1</sup>ESPCI Paris, France, <sup>2</sup>Department of Analytical, Bioanalytical Sciences, and Miniaturization, UMR CBI 8231 CNRS - ESPCI Paris, PSL University, France, <sup>3</sup>Laboratory of Biological and Proteomic Mass Spectrometry, USR 3149 CNRS - ESPCI Paris, PSL University, France, <sup>4</sup>Department of Analytical, Bioanalytical Sciences, and Miniaturization, UMR CBI 8231 CNRS - ESPCI Paris, PSL University, France, <sup>5</sup>Laboratory of PhysioPathology and PharmacoToxicology of the Human Placenta, UMR-S 1139 -Inserm - University Paris Descartes, Sorbonne Paris Cité, France- Laboratory of hormonology, CHU Cochin AP-HP, France, <sup>6</sup>Laboratory of PhysioPathology and PharmacoToxicology of the Human Placenta, UMR-S 1139 - Inserm - University Paris Descartes, Sorbonne Paris Cité, France, <sup>7</sup>Laboratory of Biological and Proteomic Mass Spectrometry, USR 3149 CNRS - ESPCI Paris, PSL University, Paris France, <sup>8</sup>Department of Analytical, Bioanalytical Sciences, and Miniaturization, UMR CBI 8231 CNRS - ESPCI Paris, PSL University, France

#### PS-11-15 Growth Hormone: Chromatographic Separations Coupled with Mass Spectrometry Towards A Novel Method For Anti-Doping Tests Hala Dadi

Université Paris-Sud, France

PS-11-17 Peptidomic strategy for purification and identification of new potential ACE-inhibitory and antioxidant peptides in Tetradesmus obliquus microalgae

Giorgia La Barbera, Anna Laura Capriotti, Chiara Cavaliere, Carmela Maria Montone, Susy Piovesana, Riccardo Zenezini Chiozzi, Michela Antonelli, Aldo Laganà University of Rome La Sapienza, Italy

### PS-11-19 Liquid Chromatography – High – Resolution Mass Spectrometry of Polydisperse Surfactants used in Oil Industry

Alizee Dufour<sup>1</sup>, Didier Thiebaut<sup>2</sup>, Matthieu Loriau<sup>3</sup>, Jerome Vial<sup>2</sup> <sup>1</sup>Société des Amis de l'ESPCI, France, <sup>2</sup>Department of Analytical, Bioanalytical Sciences, and Miniaturization (LSABM), UMR CBI 8231 CNRS - ESPCI Paris, PSL Research University, France, <sup>3</sup>Total Exploration & Production, Lacq Research Center (PERL), France

#### PS-11 / Mass Spectrometry Hyphenation and Applications (even numbers)

PS-11-02 Comparison of natural and artificial aging kinetics of ballpoint pen ink strokes using liquid chromatography mass-spectrometry

Dilara Baygildieva, Timur Baygildiev, Irina Ananieva, Oleg Shpigun, Igor Rodin Lomonosov Moscow State University, Russia

### PS-11-04 An online of four-dimensional SECxSEC-IMxMS methodology for in-depth characterization of forced degraded monoclonal antibodies

Anthony Ehkirch<sup>1</sup>, Alexandre Goyon<sup>2</sup>, Oscar Hernandez-Alba<sup>1</sup>, Valentina D'Atri<sup>2</sup>, Florent Rouviere<sup>3</sup>, Olivier Colas<sup>5</sup>, Alain Beck<sup>4</sup>, Sabine Heinisch<sup>3</sup>, Davy Guillarme<sup>2</sup>, Sarah Cianferani<sup>3</sup>

<sup>1</sup>Laboratoire de Spectrométrie de Masse BioOrganique, Université de Strasbourg, France, <sup>2</sup>School of Pharmaceutical Sciences, University of Geneva, University of Lausanne, Switzerland, <sup>3</sup>Université de Lyon, Institut des Sciences Analytiques, France, <sup>4</sup>IRPF - Centre d'Immunologie Pierre-Fabre (CIPF), France

#### **PS-11-06** Determination of Free Polyphenols in Buckwheat using HPLC/MS/MS Kateřina Pravcová, Lenka Česlová University of Pardubice, Czech Republic

**PS-11-08** Has Ion Chromatography-Mass Spectrometry Arrived? Jeffrey S Rohrer Thermo Fisher Scientific, United States of America

#### PS-11-10 Application of Py-GCxGC/MS for the identification of Asian lacquer samples

Michel Sablier<sup>1</sup>, Shun Okamoto<sup>2</sup>, Takayuki Honda<sup>2</sup>, Tetsuo Miyakoshi<sup>2</sup>, Han Bin<sup>1</sup> <sup>1</sup>Centre de Recherche sur la Conservation, CNRS USR 3224, Muséum National d'Histoire Naturelle, Ministère de la Culture et de la Communication, France, <sup>2</sup>Department of Applied Chemistry, School of Science and Technology, Meiji University, Japan

#### PS-11-12 Capillary-HPLC Coupled to Tandem Mass Spectrometry in Analysis of Alkaloid Dyestuffs Damian Dabrowski, Katarzvna Lech, Maciei Jarosz

Faculty of Chemistry, Chair of Analytical Chemistry, Warsaw University of Technology, Poland

#### PS-11-14 Development of LC-MS methods for monitoring of VPHP-degraded organic dyes

Milos Mikoska, Aram Zolal, Lukas Filip, Kamila Syslova UCT Prague, Czech Republic

#### PS-11-16 Diastereomer separation of DI-Amino acids derivatized with (+)-flec by Trapped Ion Mobility Spectrometry

Raquel Pérez Míguez<sup>1</sup>, Elena Domínguez-Vega<sup>2</sup>, María Castro-Puyana<sup>3</sup>, María Luisa Marina<sup>3</sup>, Govert W. Somsen<sup>4</sup>

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#### PS-11-18 Structural identification of impurities in the synthesis process of drug development using an impurity profiling system (2D-LC-IT-TO) in nonvolatile buffer conditions. Takahiro Takeuchi

Teijin Pharma Limited, Japan

#### PS-11-20 Getting Hair Done: Analyzing Drugs of Abuse in a Complex Matrix Garlet Benoit, Frederic Thiebaut, Laura Snow, Seyed Sadjadi, Shahana Huq, Sean Orlowicz Phenomenex, France

#### PS-12 / Foods, Natural Products, Health, Security (odd numbers)

PS-12-01 Determination of Polypeptide Antibiotic Residues in Food of Animal Origin Samples by Liquid Chromatography-Tandem Mass Spectrometr Tomasz Bladek, Andrzej Posyniak

National Veterinary Research Institute (PIWet), Poland

- PS-12-03 Analysis of Volatiles of Syringa Vulgaris Grown in LithuaniaUsing SPME-GC/MS Vilma Kaškonienė, Rūta Mickienė, Audrius Maruška Vytautas Magnus University, Lithuania
- PS-12-05 Reliable speciation of fatty acid methyl esters by flow-modulated GC×GC-TOF MS/FID with Tandem Ionisation Laura McGregor, Aaron Parker, Rebecca Preston, Bob Green

SepSolve Analytical, United Kingdom

PS-12-07 Chemical Differentiation of Two Species of Sinapis Semen by High-Performance Liquid Chromatography

Siu-Po Ip<sup>1</sup>, Zhen Hu<sup>2</sup> <sup>1</sup>School of Chinese Medicine, <sup>2</sup>The Chinese University of Hong Kong, China

#### PS-12-09 Control of Disinfection By-Products in Canned Vegetables Caused by Water Used in Their Processing

Mercedes Gallego, María-José Cardador University of Córdoba, Spain

#### PS-12-11 Regional Study of Georgian Propolis Chemical Content by LC-MS/MS Method

Luiza Kunchulia<sup>1</sup>, Tamaz Murtazashvili<sup>1</sup>, Malkhaz Jokhadze<sup>2</sup>, Paata Tushurashvili<sup>2</sup>, Nino Imnadze<sup>1</sup>, Naili Shengelidze<sup>1</sup>, Koba Sivsivadze<sup>1</sup>, Tamar Chikviladze<sup>1</sup> <sup>1</sup>Tbilisi State Medical University, Georgia, <sup>2</sup>Levan Samkharauli National Forensic Bureau, Tbilisi, Georgia

### PS-12-13 Multiresidue Method for the Determination of Nitroimidazoles, Sulfonamides and Trimethoprim in Beeswax by LC-MS/MS

Kamila Mitrowska, Maja Antczak National Veterinary Research Institute (PIWet), Poland

#### PS-12-15 Identification of short-chain poly-3-hydroxybutyrates in Saiga horn extracts Statis Pataridis<sup>1</sup>, Oleg Romanov<sup>2</sup>, Ivan Miksik<sup>1</sup> <sup>1</sup>Institute of Physiology of the Czech Academy of Sciences, Czech Republic, <sup>2</sup>Kalmykian State University, Elista, Czech Republic

PS-12-17 Analysis of total plant extracts by tandem Mass Spectrometry (MS / MS): search for compounds by spectral similarity using databases

Mamadou Baldé<sup>1</sup>, Ludivne Riffault-Valois<sup>2</sup>, Diane Julien-David<sup>2</sup>, Sonia Lordel-Madeleine<sup>2</sup>, Alassane Wélé<sup>3</sup>, Eric Marchioni<sup>2</sup>

<sup>1</sup>Strasbourg University/Cheikh Anta Diop University of Dakar, France/Senegal, <sup>2</sup>Strasbourg University, France, <sup>3</sup>Cheikh Anta Diop University of Dakar, Senegal

#### PS-12-19 De Novo Identification of peptides with antitumor and hypotensive activity from an olive by-product by RP-HPLC- and HILIC-ESI-Q-TOF (MS/MS)

Romy Vásquez-Villanueva<sup>1</sup>, Laura Muñoz-Moreno<sup>2</sup>, María José Carmena<sup>2</sup>, María Luisa Marina<sup>3</sup>, María Concepción García<sup>3</sup>

<sup>1</sup>University of Alcalá, Spain, <sup>2</sup>Departamento de Biología de Sistemas, Universidad de Alcalá, Spain, <sup>3</sup> Departamento de Química Analítica, Química Física e Ingeniería Química, Universidad de Alcalá; Instituto de Investigación Química Andrés M. del Río, Spain

#### PS-12-21 Innovative Screening Approaches for the Determination of Non-Intentionally Added Substances in Food Contact Materials

Chrysoula Kanakaki<sup>1</sup>, Veronica Osorio Piniella<sup>1</sup>, Nicole Steiner-Reischütz<sup>1</sup>, Michael Pyerin<sup>1</sup>, Brigitte Jaksa<sup>2</sup>, Erich Leitner<sup>2</sup>

<sup>1</sup>OFI, Austria, <sup>2</sup>Graz University of Technology, Austria

### PS-12-23 The chemical and pharmacological evaluation of the sulphide silt peloids of some Adjara region lakes

Tamar Masiukovich<sup>1</sup>, Tamaz Murtazashvili<sup>1</sup>, Aliosha Bakuridze<sup>2</sup>, Malkhaz Jokhadze<sup>3</sup>, Marina Goderdzishvili<sup>4</sup>, Sophio Rigvava<sup>4</sup>, Karen Mulkijanyan<sup>5</sup>

<sup>1</sup>Tbilisi State Medical University, Department of Pharmaceutical and Toxicological Chemistry, Georgia, <sup>2</sup>Tbilisi State Medical University, Department of Pharmaceutical Technology, Georgia, <sup>3</sup>LEPL Levan Samkharauli National Forensics Bureau, Georgia, <sup>4</sup>G. Eliava Institute of Bacteriophages, Microbiology and Virology, Georgia, <sup>5</sup>I. Kutateladze Institute of Pharmacochemistry, Georgia

### PS-12-25 Detection and Identification of Acetylcholinesterase Inhibitors Compounds in Annona cherimola Mill. by HPTLC-Bioassay Methodology Coupled To Mass Spectrometry

Mario Aranda, Oscar Galarce, Karem Henriquez University of Concepcion, Chile

#### PS-12-27 Development of a new HPLC-ESI-MS/MS method for trace analysis of non-psychoactive cannabinoids in apiary products

Virginia Brighenti<sup>1</sup>, Federica Pellati<sup>2</sup>, Tatiana Pedrazzi<sup>2</sup>, Davide Bertelli<sup>2</sup>, Stefania Benvenuti<sup>2</sup> <sup>1</sup>Department of Life Sciences, University of Modena and Reggio Emilia, Italy, <sup>2</sup>University of Modena and Reggio Emilia, Italy

#### PS-12-29 Development Of An Efficient Method For Characterization Of Volatile Organic Compounds (VOCs) Involved In The Yellow Disea

Emilie Stierlin, Xavier Fernandez, Thomas Michel Université Côte d'Azur, Institut de Chimie de Nice, France

#### PS-12-31 HPLC analysis of melamin and related substances in fertilizers, Gesa Schad<sup>1</sup>, Yuji Shirai<sup>2</sup>, Azusa Morita<sup>3</sup> <sup>1</sup>Shimadzu Europa GmbH, <sup>2</sup>Food and Agricultural Materials Inspection Center, Saitama, <sup>3</sup>Shimadzu Corporation, Hadano, Germany

#### PS-12-33 Identification of Ricin by Immunocapture Extraction and LC-MS/MS or LC-MS/HRMS Analysis

Andréa Gordien, Julien Enche, Charlotte Desoubries, Cindy Dubois, Cécile Montauban, Clotilde Favino, Christophe Giral, Valérie Morineaux-Hilaire, Anne Bossée DGA MNRBC, France

#### PS-12-35 Impact Assessment of House Energy Efficiency Works over the Concentration of Formaldehyde and Other Carbonyl Compounds in Five Cities from Romania

Mihail Simion Beldean-Galea, Alexandra Cucoş, Denisa Burghele, Ancuţa Ţenter, Kinga Szacsvai, Botond Papp, Mircea Moldovan, Tiberius Dicu, Vlad Pănescu Babes-Bolyai University, Romania

#### PS-12-37 Accelerated Solvent Extraction of H-2 and HT-2 Toxins in Oat Grains for LC Analysis

Josep Esteve-Romero<sup>1</sup>, José Vicente Gómez<sup>2</sup>, Andrea Tarazona<sup>2</sup>, Juan Peris Vicente<sup>3</sup>, José Vicente Gimeno Adelantado<sup>3</sup>, Jaume Albiol Chiva<sup>1</sup>, Samuel Carda Broch<sup>1</sup>, Misericordia Jiménez<sup>2</sup>, Eva Mateo<sup>5</sup>

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#### PS-12-39 Study of Biologically Active Compounds in Georgian Grapevine Canes

Natia Bokuchava<sup>1</sup>, Tamaz Murtazashvili<sup>1</sup>, Malkhaz Jokhadze<sup>2</sup>, Paata Tushurashvili<sup>2</sup>, Koba Sivsivadze<sup>1</sup>, Mariam Tatanashvili<sup>1</sup>

<sup>1</sup>Tbilisi State Medical University, Georgia, <sup>2</sup>Levan Samkharauli National Forensics Bureau, Georgia

### PS-12-41 Programmed temperature vaporizing (PTV): a versatile solution for a non-discrimination of vacuum gas oil

Marco Piparo<sup>1</sup>, Pascal Cardinael<sup>1</sup>, Pierre Giusti<sup>2</sup>, Gaelle Jousset<sup>2</sup> <sup>1</sup>Sciences et Methodes Separatives - Normandie University, France, <sup>2</sup>TOTAL, France

#### PS-12-43 Extraction and Purification of High-Value Metabolites from Betula glandulosa

Claudia Carpentier<sup>1</sup>, Jean-Luc Wolfender<sup>2</sup>, Daniel Grenier<sup>3</sup>, François Béland<sup>4</sup>, Normand Voyer<sup>3</sup> <sup>1</sup>Université Laval and SiliCycle, Canada, <sup>2</sup>Université de Genève, Switzerland, <sup>3</sup>Université Laval, Canada, <sup>4</sup>SiliCycle, Canada

#### PS-12-45 Simultaneous determination of 100 pesticides residues in food matrices using the QuEchERS Methodology

Saida Belarbi<sup>1</sup>, Martin Vivier<sup>2</sup>, Wafa Zagouani<sup>2</sup>, Pascal Cardinael<sup>3</sup>, Valerie Agasse<sup>3</sup> <sup>1</sup>Normandie Université, France, <sup>2</sup>SGS, France, <sup>3</sup>Université de Rouen, France

### PS-12-47 Development and Validation of a Novel LC-HRMS Method to Detect the Genotoxic Impurity 1-Ethyl-(3,3-dimethyl aminopropyl) Urea (EDU)

Ricardo Goncalves, Marco Galésio Hovione FarmaCiência, Portugal

#### PS-12-49 Characterization of Klason Lignin Samples Isolated from Beech and Aspen Using Microbore Column Size-Exclusion Chromatography, Robert Gora, Erik Beno, Milan Hutta

Department of Analytical Chemistry, Faculty of Natural Sciences, Comenius University, Slovakia

#### PS-12 / Foods, Natural Products, Health, Security (even numbers)

- **PS-12-02** Analysis of Arsenic and Chromium Species in Food and Food Packaging Using LC-ICPMS Uwe Oppermann<sup>1</sup>, Ludivine Fromentoux<sup>1</sup>, Jan Knoop<sup>1</sup>, Marcin Frankowski<sup>2</sup> <sup>1</sup>Shimadzu Europa GmbH, Germany, <sup>2</sup>Faculty of Chemistry, Adam Mickiewicz University, Poland
- PS-12-04 Latin Square design for optimization of extraction parameters for isolation of steroidal glycosides from Dioscorea deltoidea Wall cell suspension culture Irina Ananyeva, Boris Sarvin, Elizaveta Fedorova, Igor Rodin, Andrey Stavrianidi, Oleg Shpigun Lomonosov Moscow State University, Chemistry Department, Russia

#### PS-12-06 Achieving Fast, Efficient Separations in environmental applications using Superficially Porous Particle Column Technology Ty Kabler Becky Wittrig Olivier Griffaton Mike Chang

Ty Kahler, Becky Wittrig, Olivier Griffaton, Mike Chang Restek Corporation, United States of America

PS-12-08 Procedure for the Determination of Malachite Green, Crystal Violet and Their Leuco Metabolites in Fish Feed by Isotope Dilution Liquid Chromatography Tandem Mass Spectrometry

Kamila Mitrowska, Andrzej Posyniak National Veterinary Research Institute (PIWet), Poland

- PS-12-10 Origin of Low-Molecular Mass Aldehydes as Disinfection By-Products in Beverages Manuel Silva, Maria Serrano University of Cordoba, Spain
- PS-12-12 Screening method for determination of polyphosphates in fish, dairy and meat products using ion-chromatography with conductimetry detector Francesca Longo, Francesca Longo, Rocco Baccelliere, Rossana Claudia Bonanni, Laura Spinaci, Daniele Colangelo, Bruno Neri Istituto Zooprofilattico Lazio e Toscana» M. Aleandri», Italy
- PS-12-14 HPLC-ECD and Chemometric Analysis of Bee Products and Evaluation of Their Biological Activity

Vilma Kaškonienė<sup>1</sup>, Paulius Kaškonas<sup>2</sup>, Augustinas Šarkinas<sup>1</sup>, Greta Jestremskaitė<sup>1</sup>, Audrius Maruška<sup>1</sup> <sup>1</sup>Vytautas Magnus University, Lithuania,<sup>2</sup>Institute of Metrology, Kaunas University of Technology

- **PS-12-16** Pungency level determination of chili products with HPLC Philipp Jochems, Robert Ludwig, Uwe Oppermann Shimadzu Europa GmbH, Germany
- **PS-12-18** Influence of Decaffeination of Coffee on Chlorogenic Acids Content Lenka Ceslova, Barbora Řeháková, Kateřina Pravcová University of Pardubice, Czech Republic
- PS-12-20 Development and Validation of a Method for the Determination of Malachite Green, Crystal Violet and Their Leuco Forms in Water by Isotope Dilution LC-MS/MS Kamila Mitrowska, Angelika Tkaczyk, Andrzej Posyniak National Veterinary Research Institute (PIWet), Poland

#### PS-12-22 LC/DAD Method for Simultaneous Determination of Cannabinoids and Terpenes

Ivana Cvetkovikj Karanfilova, Gjoshe Stefkov, Katerina Brezovska, Jelena Acevska, Marija Karapandzova, Natalija Nakov, Liljana Ugrinova, Aneta Dimitrovska, Svetlana Kulevanova *Ss. Cyril and Methodius University, Faculty of Pharmacy, Macedonia* 

### PS-12-24 Comparison of Different Sorbents for Solid-Phase Extraction of Coumarins from Vine Samples

Katarína Hroboňová, Eva Brokešová Slovak University of Technology in Bratislava, Faculty of Chemical and Food Technology, Institute of Analytical Chemistry, Slovakia

# PS-12-26 Chemical, Nutritional and Functional Analysis of Chiloe's Giant Garlic (Allium ampeloprasum L) by High-Performance Thin-Layer Chromatography-Autography Coupled to Mass Spectrometry

Mario Aranda, Darlene Peterssen-Fonseca, Karem Henriquez-Aedo, Jonathan Carrasco-Sandoval University of Concepcion, Chile

PS-12-28 Isolation of Two Structurally-Close Valepotriates From Centranthus ruber L. Using Centrifugal Partition Chromatography: From Analytical to Preparative Scale Mélissa Chami<sup>1</sup>, Thomas Michel<sup>2</sup>, Elodie Bouju<sup>3</sup>, Francis Hadji Minaglou<sup>1</sup>, Xavier Fernandez<sup>2</sup> <sup>1</sup>Botanicert, France, <sup>2</sup>Institut de Chimie de Nice, France, <sup>3</sup>Extrasynthese, France

### PS-12-30 A new comprehensive approach for risk assessment in herbal drugs, based on quantitative HPTLC fingerprint of botanical extracts

Pierre Bernard-Savary<sup>1</sup>, Salvador Cañigueral<sup>2</sup>, Débora Frommenwiler<sup>3</sup>, Eike Reich<sup>3</sup> <sup>1</sup>Chromacim Camag, France, <sup>2</sup>University of Barcelona, Department of Pharmacology and Therapeutic Chemistry, Spain, <sup>3</sup>Camag, France

**PS-12-32** Mass spectrometry determination of fining-related allergen proteins in Chilean wines Mario Aranda<sup>1</sup>, Jessy Pavon-Perez<sup>1</sup>, Karem Henriquez-Aedo<sup>1</sup>, Miguel Herrero<sup>2</sup> <sup>1</sup>University of Concepcion, Chile, <sup>2</sup>Institute of Food Science Research (CIAL), Chile

#### PS-12-34 Monitoring of 17a-Ethynylestradiol During Mouse Sperm Capacitation by HPLC-MS/MS to Propose its Action Using Kinetic Analysis

Tereza Bosakova<sup>1</sup>, Zuzana Adamova<sup>2</sup>, Zuzana Hampejsova<sup>3</sup>, Katerina Dvorakova-Hortova<sup>4</sup> <sup>1</sup>Charles University, Faculty of Science, Department of Analytical Chemistry, Czech Republic, <sup>2</sup>Charles University, Faculty of Zoology, Czech Republic, <sup>3</sup>Charles University, Czech Republic, <sup>4</sup>Institute of Biotechnology CAS, BIOCEV, Group of Reproductive Biology, Czech Republic

#### PS-12-36 The Chromatographic Techniques Combination for High Quantity and Quality of Scopoletin Isolated from Medicinal Lasianthus (Rubiaceae)

Tiwtawat Napiroon, PhD<sup>1</sup>, Henrik Balslev<sup>2</sup>, Markus Bacher<sup>3</sup>, Kongkanda Chayamarit<sup>1</sup>, Wichai Santimaleeworagun<sup>4</sup>, Srunya Vajrodaya<sup>5</sup>

<sup>1</sup>The Forest Herbarium (BKF), Department of National Parks Wildlife and Plant Conservation, Thailand, <sup>2</sup>Department of Bioscience, Faculty of Science and Technology, Aarhus University, Denmark, <sup>3</sup>Division of Chemistry of Renewables, University of Natural Resources and Life Sciences (BOKU), Austria, <sup>4</sup>Department of Pharmacy, Faculty of Pharmacy, Silpakorn University, Thailand, <sup>5</sup>Department of Botany, Faculty of Science, Kasetsart University, Thailand

#### PS-12-38 Determination of Deoxynivalenol in Oat Grains by Liquid Chromatography-Triple Quadrupole-Mass Spectrometry

Josep Esteve-Romero<sup>1</sup>, José Vicente Gómez<sup>2</sup>, Andrea Tarazona<sup>2</sup>, Juan Peris Vicente<sup>3</sup>, José Vicente Gimeno Adelantado<sup>3</sup>, Jaume Albiol Chiva<sup>1</sup>, Samuel Carda Broch<sup>1</sup>, Misericordia Jiménez<sup>2</sup>, Eva Mateo<sup>5</sup>

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#### PS-12-40 SPME-GC-MS Fingerprinting for the Evaluation of Changes in the Volatile Composition of Hop Samples during Storage

Laura Tedone<sup>1</sup>, Lada Staskova<sup>2</sup>, Dandan Yan<sup>1</sup>, Simon P.Whittock<sup>3</sup>, Robert A. Shellie<sup>4</sup>, Anthony Koutoulis<sup>5</sup> <sup>1</sup>Australian Centre for Research on Separation Science, University of Tasmania, Australia, <sup>2</sup>School of Science, RMIT University, Australia, <sup>3</sup>Hop Products Australia, <sup>4</sup>Trajan Scientific and Medical, <sup>5</sup>School of Natural Sciences, University of Tasmania, Australia

#### PS-12-42 Monitoring of Quinolones Use in Livestock Farming by MLC

Jaume Albiol Chiva<sup>1</sup>, Josep Esteve Romero<sup>1</sup>, Juan Peris Vicente<sup>2</sup>, Devasish Bose<sup>3</sup>, Pooja Mishra<sup>3</sup>, Rajendra Prasad Pawar<sup>3</sup>, Rufino Mateo Castro<sup>2</sup>, Abhilasha Durgbanshi<sup>4</sup>, Samuel Carda Broch<sup>1</sup>, Abhishek Jain<sup>5</sup>, Jesús Javier Iborra Millet<sup>6</sup>, Eva Mateo<sup>7</sup>

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#### PS-12-44 Multiresidue Pesticide Analysis of Kale and Grapes using QuEChERS and High-Performance Liquid Chromatography Coupled with Tandem Mass Spectrometry

Scott Krepich<sup>1</sup>, Matthew Trass<sup>1</sup>, Allen Misa<sup>1</sup>, Laura Snow<sup>1</sup>, Ramkumar Dhandapani<sup>1</sup>, Montserrat Ferrer<sup>2</sup>, Benoit Garlet<sup>1</sup>

<sup>1</sup>Phenomenex, United States of America, <sup>2</sup>Phenomenex Helvetia, Switzerland

### PS-12-46 Development of a confirmatory method for determination of Clotrimazole, Rifampicin and Fumagillin in honey by HPLC-MS/MS

Pavel Metalnikov, Ilya Batov, Renat Selimov, Tatyana Gracheva, Alexey Efimov, Anton Glazdov, Alexander Komarov VGNKI, Russia

#### PS-12-48 Universal LC method for cleaning verification in Pharmaceutical Industry, Ricardo Goncalves, Pedro Serodio, João Pereira, Marta Mourao Hovione FarmaCiência, Portugal

### PS-12-50 Multi-Approach determination of Dithiocarbamate fungicides in Foodstuff based on HILIC-MS/MS and HILIC-ICP-MS

Gwenaelle Lavison Bompard<sup>1</sup>, A. C. Dirtu<sup>2</sup>, C. Inthavong<sup>2</sup>, A. Ducrocq<sup>2</sup> <sup>1</sup>Agence nationale de sécurité sanitaire de l'alimentation, de l'environnement et du travail (Anses), France, <sup>2</sup>Université Paris-Est, Anses, Laboratoire de sécurité des aliments, France

#### PS-12-52 Monitoring of Illegal Adulterants and Drugs in Functional Foods-Focused on Prohibited Ingredients

Jaehee Hyun, Soyoung Won, Woojin Cho, Inseon Kim, Jaehee Hyun, Kyeongwook Kim, Jaei Kim, Dongsul Kim, Wooseong Kim

Center for Food & Drug Analysis, Busan Regional Korea Food and Drug Safety, South Korea

#### PS-13 / Pharmacy and Cosmetics (odd numbers)

#### **PS-13-01** Is Supercritical Fluid Chromatography Applicable In Pharmaceutical Quality Control? Katerina Plachka, Frantisek Svec, Lucie Novakova Charles University, Faculty of Pharmacy in Hradec Kralove, Czech Republic

#### PS-13-03 Study Standardization features of Substance "RUMIFOS" by GC-MS Luiza Kunchulia<sup>1</sup>, Mlkhaz Jokhadze<sup>2</sup>, Tushurashvili Paata<sup>2</sup>, Nikoloz Zazashvili<sup>3</sup>, Nodar Mindiashvili<sup>3</sup>, Mikheil Chichakua<sup>3</sup>, Nino Imnadze<sup>1</sup>, Nino Goderidze<sup>3</sup> <sup>1</sup>Tbilisi State Medical University, Georgia, <sup>2</sup>Levan Samkharauli National Forensic Bureau, Georgia, <sup>3</sup>Bio-Rational Technologies Research Center (BrTRC), Georgia

PS-13-05 Validation of a UHPLC/UV method to quantify ingredients in cosmetic products using the accuracy profile approach

Laurie Nicolas<sup>1</sup>, Jean Eric Baudouin<sup>1</sup>, Rémi Lemaire<sup>1</sup>, Sakina Mezzache<sup>1</sup>, Jérôme Vial<sup>2</sup> <sup>1</sup>L'OREAL Recherche & Innovation, France, <sup>2</sup>ESPCI Paris, PSL Research University, France

PS-13-07 Supercritical fluid chromatography in pharmaceutical analysis and dietary supplements control

Lucie Nováková, Kateřina Plachká, Pavel Jakubec, Veronika Pilařová Univerzita Karlova v Praze, Farmaceuticka fakulta v Hradci Kralove, Czech Republic

PS-13-09 Abridging Pharmaceutical Analysis and Drug Discovery via LC-MS-TOF, NMR, In-Silico Toxicity - Bioactivity Profiling for Therapeutic Purposing Zileuton Impurities: Need of Hour Saurabh Ganorkar, Atul Shirkhedkar

R. C. Patel Institute of Pharmaceutical Education and Research, India

PS-13-11 Separation of Oligonucleotides Using Reversed Phase Ion Pairing Chromatography Daniel Esser<sup>1</sup>, Noriko Shoji<sup>2</sup>, Chie Yokoyama<sup>2</sup>, Saoko Nozawa<sup>2</sup>, Takashi Sato<sup>2</sup>, Noritaka Kuroda<sup>2</sup>, Naohiro Kuriyama<sup>2</sup>

<sup>1</sup>YMC Europe GmbH, Germany, <sup>2</sup>YMC Co., Ltd., Japan

PS-13-13 MLC as a Useful Method for Amoxicillin, Ampicillin, Cloxacillin and Dicloxacillin Determination in Pharmaceuticals and Urine

Jaume Albiol Chiva<sup>1</sup>, Josep Esteve Romero<sup>1</sup>, Juan Peris Vicente<sup>2</sup>, Jesus Javier Iborra Millet<sup>3</sup>, Diego Enrique Kassuha<sup>4</sup>, Micaela Flores<sup>4</sup>, Gerardo Castro Ocampo<sup>5</sup>, Devasish Bose<sup>6</sup>, Samuel Carda Broch<sup>1</sup>, Eva Mateo<sup>7</sup>

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PS-13-15 Application of Linear Retention Indices in Liquid Chromatography for Reliable Characterization of Oxygen Heterocyclic Compounds in Cosmetics

Adriana Arigò<sup>1</sup>, Francesca Rigano<sup>2</sup>, Paola Dugo<sup>1</sup>, Luigi Mondello<sup>1</sup>

<sup>1</sup>Department of «Scienze Chimiche, Biologiche, Farmaceutiche ed Ambientali» University of Messina, Italy, <sup>2</sup>Chromaleont s.r.l., c/o Dipartimento di Scienze Chimiche, Biologiche, Farmaceutiche ed Ambientali", University of Messina, Italy

PS-13-17 Use of a novel UHPLC system for the simultaneous UHPLC analysis of water-soluble and fat-soluble vitamins

Tim Cross<sup>1</sup>, Sylvia Grosse<sup>2</sup>, Mauro De Pra<sup>2</sup>, Markus Martin<sup>2</sup>, Frank Steiner<sup>2</sup> <sup>1</sup>Thermo Fisher Scientific, United Kingdom, <sup>2</sup>Thermo Fisher Germering, Germany

#### PS-13 / Pharmacy and Cosmetics (even numbers)

- PS-13-02 Computer-assisted UHPLC-MS/MS Method Development and Optimization for the Determination of 25 Antineoplastic Drugs Used in Hospital Pharmacy Nicolas Guichard<sup>1</sup>, Szabolcs Fekete<sup>1</sup>, Davy Guillarme<sup>1</sup>, Pascal Bonnabry<sup>2</sup>, Sandrine Fleury-Souverain<sup>2</sup> <sup>1</sup>University of Geneva, <sup>2</sup>Geneva University Hospitals, Switzerland
- PS-13-04 Evaluation of the Container-Content Interactions between Plastic Cosmetic Packagings and Oily Simulants

Pauline Murat<sup>1</sup>, Valérie Simon<sup>2</sup>, Maude Galonnier<sup>1</sup>, Pierre-Jacques Ferret<sup>1</sup>, Sylvie Coslédan<sup>1</sup> <sup>1</sup>Pierre Fabre Dermo-Cosmétique, France, <sup>2</sup>Laboratoire de Chimie Agro-Industrielle, **France** 

### PS-13-06 Strategies to Evaluate and Monitor Forced Degradation Studies Using a Dual Detection (UV-MS) System

Paula Hong, Patricia McConville Waters Corporation, United States of America

PS-13-10 Release Kinetics of Hydrophobic Drug Paclitaxel from Poly(D,L-Lactic acid)/Poly(ethylene glycol) Nanofibers into Hydrogel Based on 2-Hydroxyethyl Methacrylate Studied by HPLC Zuzana Bosakova<sup>1</sup>, Zuzana Hampejsova<sup>1</sup>, Radka Hobzova<sup>2</sup>, Jakub Sirc<sup>2</sup>

<sup>1</sup>Charles University, Faculty of Science, Department of Analytical Chemistry, Czech Republic, <sup>2</sup>Czech Academy of Sciences, Institute of Macromolecular Chemistry, Department of Polymer Networks and Gels, Czech Republic

#### PS-13-12 Simulated Biological Conditions for Allopurinol Derivatives by MLC

Josep Esteve-Romero<sup>1</sup>, Jaume Albiol Chiva<sup>1</sup>, Juan Peris Vicente<sup>2</sup>, José Vicente Gimeno Adelantado<sup>2</sup>, José Vicente Gómez<sup>3</sup>, Andrea Tarazona<sup>3</sup>, Samuel Carda Broch<sup>1</sup>, Rufino Mateo Castro<sup>2</sup>, Misericordia Jiménez<sup>3</sup>, Eva Mateo<sup>4</sup>

<sup>1</sup>Química Bioanalítica, QFA, ESTCE, Universitat Jaume I, Spain, <sup>2</sup>Department of Analytical Chemistry, University of Valencia, Spain, <sup>3</sup>Department of Microbiology and Ecology, University of Valencia, Spain, <sup>4</sup>Institute for Research INCLIVA, Microbiology Service, Spain

#### PS-13-14 Interchangeability of core-shell columns: The impact of particle size

Barnabás Dávid<sup>1</sup>, Zsolt Földesi<sup>1</sup>, Péter Ákos Győrffy<sup>1</sup>, Szabolcs Fekete<sup>2</sup>, Katalin Ganzler<sup>1</sup> <sup>1</sup>Gedeon Richter Plc., Hungary, <sup>2</sup>School of Pharmaceutical Sciences, University of Geneva, Switzerland

### PS-13-16 HPLC-UV-MS characterization of platinum and palladium complexes as potential cytostatic activity

Jan Svoboda, Kamila Syslová UCT Prague, Czech Republic

### PS-13-18 Modernisation of LC QC Methods: paroxetine and related substances using a generic volatile ion-pair approach

John Lough, Daniel Parker, Abidur Emad University of Sunderland, United Kingdom

#### PS-14 / Sample Handling and Trace Analysis (odd numbers)

- PS-14-01 Solid Phase Extraction of Bisphenol A and Four Other Bisphenols in Beverage Samples Followed by Derivatization for GC-MS Analysis Xu-Liang Cao Health Canada, Canada
- **PS-14-03** A New Derivatisation Reaction for Perfluorcarboxylic Acids Prior to GC/MS Analysis Monika Stróżyńska<sup>1</sup>, Manfred Hagmann<sup>2</sup>, Katrin Schuhen<sup>3</sup> <sup>1</sup>University Koblenz-Landau, Germany, <sup>2</sup>SAS Hagmann GmbH, <sup>3</sup>University Koblenz - Landau, Germany
- PS-14-05 New Restricted Access Materials Based on Nanofibrous Polymers for Biological Samples Extraction

Hedvika Raabová, Martina Háková, Lucie Chocholoušová Havlíková, Dalibor Šatínský Charles University, Faculty of Pharmacy, Department of Analytical Chemistry, Czech Republic

#### PS-14-07 Tools, Nanomaterials and Methods for Biopharmaceutical Separations, Process Control and Analytical Characterization

Siyao Liu, Michael Lämmerhofer Institute of Pharmaceutical Sciences, Pharmaceutical (Bio-)Analysis, University of Tübingen, Germany PS-14-09 Synthesis and characterisation of molecularly imprinted polymer for the selective extraction of profenofos pesticide

Sonia Lordel-Madeleine, Loïc Bonne, Diane Julien-David, Flavio Thihara Rodrigues, Hugues Zimmermann, Eric Marchioni UMR 7178 IPHC - DSA - équipe CAMBAP, France

- PS-14-11 Optimization of Solid-Phase Microextraction and Stir-Bar Sorptive Extraction for the Determination of Terpenes from Food Matrices by Experimental Design Approach Zélie Triaux<sup>1</sup>, Hugues Petitjean<sup>2</sup>, Eric Marchioni<sup>1</sup>, Damien Steyer<sup>4</sup>, Christophe Marcic<sup>3</sup> <sup>1</sup>Université de Strasbourg - UMR 7178 - Equipe CAMBAP / Benephyt, France, <sup>2</sup>Benephyt, France, <sup>3</sup>Université de Strasbourg - UMR 7178 - Equipe CAMBAP, France, <sup>4</sup>Twistaroma, France
- PS-14-13 Development of Immobilized Enzymatic Reactors Coupled with Nano-Liquid Chromatography and Mass Spectrometry for the Analysis of the Glycosylation Heterogeneity of a Protein,

Stan Perchepied<sup>1</sup>, Nicolas Eskenazi<sup>2</sup>, Julien Camperi<sup>1</sup>, Thierry Fournier<sup>3</sup>, Joëlle Vinh<sup>2</sup>, Nathalie Delaunay<sup>1</sup>, Valérie Pichon<sup>1</sup>

<sup>1</sup>Department of Analytical, Bioanalytical Sciences, and Miniaturization, PSL University, France, <sup>2</sup>Laboratory of Biological Mass Spectrometry and Proteomics, PSL University, France, <sup>3</sup>Laboratory of PhysioPathology and PharmacoToxicology of the Human Placenta, University Paris Descartes, France

PS-14-15 Acylation, Etherification and Esterification in a Single Step: The Exceptional Reactivity of Hexamethyldisilazane with Perfluorocarboxylic Acids: Derivatization of Amino Acids Blanka Fodor<sup>1</sup>, Ibolya Molnár-Perl<sup>2</sup>

<sup>1</sup>Semmelweis University Doctoral School, Hungary, <sup>2</sup>Institute of Chemistry, Department of Analytical Chemistry, Eötvös Loránd University, Hungary

- PS-14-17 Development of Analytical Methods for Enrichment of the Endogenous Phosphopeptides and Their Characterization in Biological Fluids Anna Laura Capriotti, Giorgia La Barbera, Carmela Maria Montone, Susy Piovesana, Aldo Laganà University La Sapienza Roma, Italy
- **PS-14-19** Sequential Injection Analysis Tool for Fast and Variable Online Solid Phase Extraction Petr Chocholouš, Lucie Chocholoušová Havlíková, Dalibor Šatínský, Petr Solich Charles University, Faculty of Pharmacy in Hradec Kralove, Czech Republic
- PS-14-21 Development and Validation of an LC-MS/MS Methodology for the Analysis of Non-ionic Surfactants in Treated Wastewater Samples Deirdre Cabooter, Mélanie Mignot, Maarten Nagels, Raf Dewil KU Leuven, Belgium
- PS-14-23 Development of an Analytical Strategy based on Liquid Chromatography-Tandem Mass Spectrometry for the Determination of Deltamethrin and its Metabolites in Salmon Lice Daniela Dulgheriu, Marit Jørgensen Bakke, Tor Einar Horsberg Norwegian University of Life Sciences, Faculty of Veterinary Medicine, Norway
- PS-14-25 Is There Any Effective Tool How to Obtain Short Non-Coding RNA (miRNA) in a Sufficient Amount and in a Highest Purity? Zuzana Bilkova<sup>1</sup>, Eliska Krocova<sup>1</sup>, Denisa Smela<sup>1</sup>, Rudolf Kupcik<sup>1</sup>, Jan Macak<sup>1</sup>, Pavel Rehulka<sup>2</sup> <sup>1</sup>University of Pardubice, Czech Republic, <sup>2</sup>University of Defence, Czech Republic
- PS-14-27 New Materials for Sample Preparation in On-Line Coupled In-Tube Solid-Phase Microextraction and Nano-Liquid Chromatography: Degradation of Tribenuron-Methyl in Environmental Waters

Pascual Serra-Mora, Rosa Heráez-Hernández, Jorge Verdú-Andrés, Pilar Campíns-Falcó University of Valencia, Spain

- PS-14-29 New Metal and Metal Oxide Nanoparticles Modified Polymeric Materials for the On-Line Extraction of Polar Compounds Rosa Herráez-Hernández, Pascual Serra-Mora, Jorge Verdú-Andrés, Pilar Campíns-Falcó University of Valencia, Spain
- **PS-14-31** Chromatographic Characterization of AuNPs Used in Plasmonic Assays Lorenzo Sanjuan Navarro, Neus Jornet Martínez, Ana Ballester Caudet, Yolanda Moliner Martínez, Pilar Campíns Falcó University of Valencia, Analytical Chemistry Department, Spain
- PS-14-33 Development of a Methodology to Monitor Formaldehyde in Methanol Samples by HS-GC-FID in a Pharmaceutical Context Alexandra Goncalves, Ana Cruz, António Ramos, Rui Loureiro
  - Hovione, Portugal
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> Janete Yariwake<sup>1</sup>, Renata Colombo<sup>2</sup>, Marcos Lanza<sup>3</sup> <sup>1</sup>University of Sao Paulo, Brazil, <sup>2</sup>University of São Paulo, Escola de Artes, Ciências e Humanidades, Brazil, <sup>3</sup>University of São Paulo, Instituto de Química de São Carlos, Brazil

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<sup>1</sup>Université de Caen Normandie - ABTE - CLCC F. Baclesse, France, <sup>2</sup>Normandie Université, UNICAEN, France, <sup>3</sup>Normandie Université, UNICAEN, PRISMM, ICORE, France, <sup>4</sup>Département de chirurgie oncologique, Centre François Baclesse, France, <sup>5</sup>Département de santé au travail, Centre François Baclesse, France, <sup>6</sup>Service de pharmacie, Centre Hospitalier Universitaire de Caen, France

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Stéphanie Swiha<sup>1</sup>, Samira Aliane<sup>2</sup>, José Dugay<sup>2</sup>, Thierry Fournier<sup>3</sup>, Christelle Simasotchi<sup>3</sup>, Jérome Vial<sup>2</sup>, Valérie Pichon<sup>4</sup>, Sophie Gil<sup>3</sup>, Nathalie Delaunay<sup>2</sup>

<sup>1</sup>ESPCI-LSABM, France, <sup>2</sup>Laboratory of Analytical and Bioanalytical Sciences and Miniaturization, PSL University, France, <sup>3</sup>Laboratory of Human Placenta Pathophysiology and Pharmacotoxicology, Université Paris Descartes, France, <sup>4</sup>Laboratory of Analytical and Bioanalytical Sciences and Miniaturization, PSL University, France/ Sorbonne Université, France

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<sup>1</sup>Center for Applied Nanobioscience and Medicine, University of Arizona, United States of America, <sup>2</sup>Waters Center of Innovation for Metabolomics, Georgetown University, United States of America

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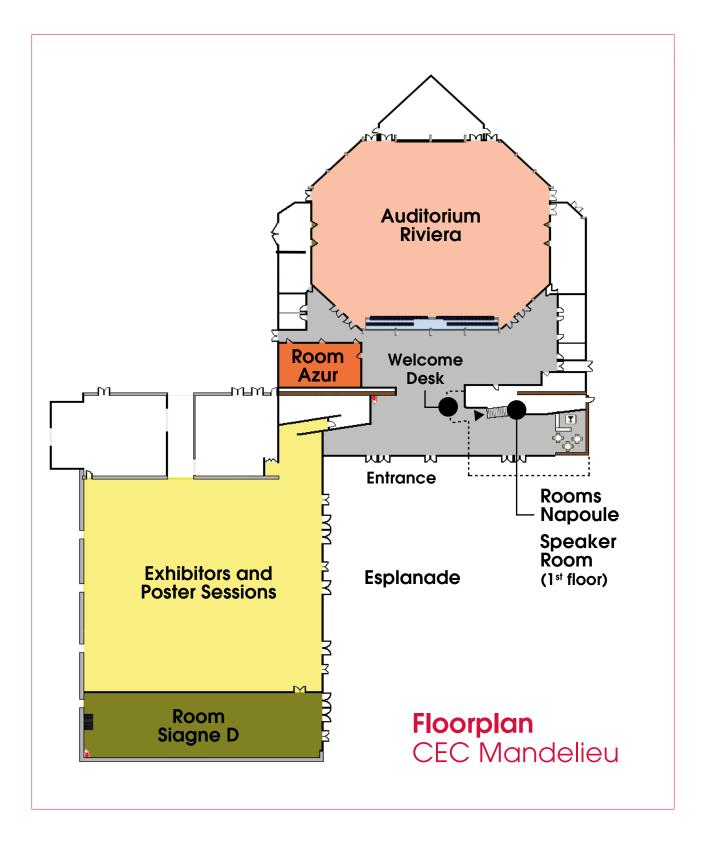
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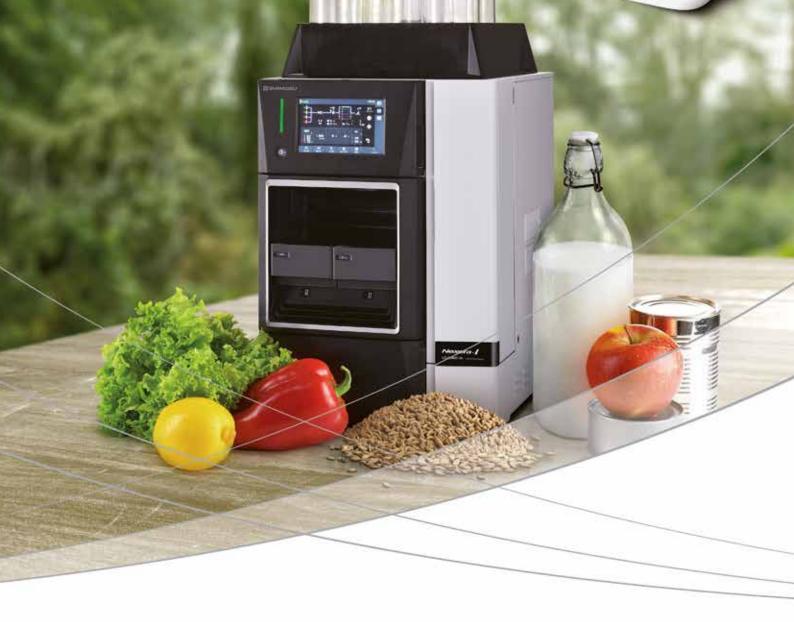
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