

# **16<sup>th</sup> Czech – Slovak Spectroscopic Conference**

**Hotel Harmonie, Luhačovice, Czech Republic**

**May 27-31, 2018**

## **PROGRAMME**

**Sunday 27 May**

16:00-19:00	<b>REGISTRATION</b>
19:00-24:00	<b>WELCOME PARTY with barbecue</b>

**Monday 28 May**

8:30-9:00	<b>OPENING CEREMONY</b> (V. Kanický, M. Miglierini)		
<b>Session 1 Atomic spectrometry (AAS, GD-OES)</b>			<b>Chair: Viktor Kanický</b>
9:00-9:15	CP1	Metrohm	Metrohm Spektroskopie – Budiž světlo
9:15-10:00	PL1	A. D'Ulivo	Chemical vapor generation by aqueous boranes: from analytical applications to mechanistic investigation
10:00-10:30	IL1	Z. Weiss	Advances in glow discharge emission spectroscopy: selective excitation, transition rate diagrams and beyond
10:30-10:45	OL1	J. Kratzer	Trace determination of selenium by hydride generation in-atomizer trapping atomic absorption spectrometry
10:45-11:30	<b>COFFEE BREAK</b>		
<b>Session 2 Atomic spectrometry (Miniature plasma sources)</b>			<b>Chair: Zdeněk Weiss</b>
11:30-12:00	IL2	J. Franzke	Dielectric barrier discharges - plasma fundamentals and applications in analytical chemistry
12:00-12:15	OL2	A. Hrdlička	Plasma pencil in analytical spectrochemistry - achievements and prospects
12:15-12:30	OL3	M. Dvořáková	Matrix effects in plasma pencil and analysis of real samples
12:30-14:00	<b>LUNCH</b>		
<b>Session 3 Sample preparation/Sample introduction</b>			<b>Chair: Maryam Aghaei</b>
14:00-14:15	OL4	F. Polák	Aluminium and antimony bioextraction from aluminosilicates and ferric oxohydroxides in presence of filamentous fungus <i>Aspergillus Niger</i>
14:15-14:30	OL5	M. Matulová (SK)	Sorption studies of selenium and iodine from aqueous solutions on natural and synthetic materials
14:30-14:45	CP2	BAS Rudice	BAS Rudice company presentation
14:15-15:15	CP3	Pragolab	Nexsa - small spot XPS and multi-technique analysis with Raman
15:15-16:00	<b>COFFEE BREAK</b>		
<b>Session 4 Speciation analysis</b>			<b>Chair: Alessandro D'Ulivo</b>
16:00-16:30	IL3	M. Urík	Experimental separation of mobile elements' fraction using extraction with extracellular fungal metabolites
16:30-16:45	OL6	P. Matúš (SK)	Determination of iodine fractions in soils using ICP MS after application of single and sequential extraction techniques
16:45-17:00	OL7	J. Švehla (CZ)	Method development for speciation analysis of volatile mercury forms in ambient air flue gases from incineration plants
17:00-17:15	OL8	M. Šebesta	Influence of zinc initial speciation on its distribution in aqueous media in presence of filamentous fungus or soils
17:15-17:30	OL9	J. Tóth (SK)	Using of immersion probe for kinetic spectrophotometric determination of dissolved chromium species in water samples

17:30-18:00	CP4	Anton Paar	Anton Paar Multiwave 7000 – microwave digestion at its best
18:15-19:15	<b>POSTER SESSION 1</b>		
19:30	<b>Buffet</b>		

### Tuesday 29 May

<b>Session 5 Special spectroscopic methods (<i>Mössbauer spectroscopy</i>) Chair: Joachim Franzke</b>			
8:00-8:45	PL2	M. Miglierini	Synchrotron radiation aided Mössbauer spectrometry
8:45-9:00	OL10	D. Holková	Properties of nanocrystalline alloy after irradiation of amorphous precursors
9:00-9:15	OL11	I. Bonková (SK)	Iron in biological tissues
9:15-9:30	OL12	L. Pašteka (SK)	Influence of external treatment on microstructure of selected steels
<b>Session 6 Molecular spectroscopy (<i>Molecular luminescence</i>) Chair: Renato Zenobi</b>			
9:30-10:00	IL4	M. Hof	Lipid driven nanodomains are fluid
10:00-10:15	OL13	J. Valenta	Determination of absolute emission efficiency of up- and down-converted luminescence and some other advanced optical characterization of fluorides doped with various lanthanides
10:15-10:30	OL14	P. Lubal	Time-resolved luminescence spectroscopy as a tool for study of chemical reactions of Eu(III) complexes
10:30-11:15	<b>COFFEE BREAK</b>		
<b>Session 7 Molecular spectroscopy (<i>NMR</i>) Chair: Marcel Miglierini</b>			
11:15-11:45	IL5	R. Fiala	NMR spectroscopy methods for the studies of biomolecular structure and dynamics
11:45-12:15	IL6	V. Sklenář	Disentangling puzzles - atomic resolution studies of protein disorder
12:15-12:30	OL15	H. Štěpánková	Local structure of garnets studied by NMR
12:30-14:00	<b>LUNCH</b>		
14:00-19:00	<b>EXCURSIONS</b>		
19:00-20:00	<b>POSTER SESSION 2</b>		
20:00	<b>Buffet</b>		

**Wednesday 30 May**

8:30-8:45	<b>To the memory of Assoc. Prof. B. Strauch</b> (B. Vlčková, I. Němec)		
<b>Session 8 Molecular spectroscopy</b> ( <i>Raman, SERS, TERS</i> )		<b>Chair: Blanka Vlčková</b>	
8:45-9:30	PL3	J. Popp	Clinical Raman spectroscopy - diagnosis before therapy
9:30-10:15	PL4	R. Zenobi	Tip-enhanced Raman spectroscopy - principles and applications
10:15-10:45	CP5	Nicolet CZ	Nicolet CZ company presentation
10:45-11:30	<b>COFFEE BREAK</b>		
<b>Microsymposium Challenges in Raman spectroscopy</b> starts as a parallel session see pages 6-7 for its programme			
<b>Session 9 LIBS</b>		<b>Chair: Norbert Jakubowski</b>	
11:30-12:00	IL7	J. Kaiser	3D chemical imaging through a combination of laser-induced breakdown spectroscopy and computed tomography
12:00-12:15	OL16	P. Pořízka	Dimensionality reduction of multi-variate laser spectroscopy data
12:15-13:45	<b>LUNCH</b>		
<b>Session 10 LA-ICP-MS</b>		<b>Chair: Margaretha T. C. de Loos-Vollebregt</b>	
13:45-14:30	PL5	N. Jakubowski	Method development for metal detection at cellular levels
14:30-14:45	OL17	M. Tvrdoňová	Simultaneous imaging of proteins and elements in tissues by LA-ICP-MS
14:45-15:00	OL18	E. Pospíšilová	Laser ablation-based methods in the analysis of clay ground layers in painting
15:00-15:15	OL19	V. Dillingerová	Multivariate statistical analysis of archaeological samples and their visualisation
15:15-15:45	CP5	HPST	ICP-MS systems by Agilent Technologies in the Czech Republic and their capabilities
15:45-16:30	<b>COFFEE BREAK</b>		
<b>Session 11 Mass spectrometry</b>		<b>Chair: Jan Preisler</b>	
16:30-17:00	IL8	G. Allmaier	From nanoparticle separation/detection by differential mobility analysis to high energy collision induced dissociation MS
17:00-17:30	IL9	J. Čáslavský (CZ)	Mass spectrometry in environmental analysis
17:30-17:45	OL20	T. Černohorský	New approach to matrix modification in ETV ICP-MS
17:45-18:00	OL21	J. Patočka (CZ)	Practical use of carbon nanoparticles as a transport efficiency modifier for ETV-ICP-TOF-MS
19:00-24:00	<b>CONFERENCE DINNER</b>		

**Thursday 31 May**

<b>Session 12 Plasma spectroscopy (ICP-MS, ICP-OES, ETV)</b>			<b>Chair: Jozef Kaiser</b>
9:30-10:15	PL6	M. de Loos-Vollebregt	Dealing with the matrix and background in analytical atomic spectroscopy
10:15-10:45	IL10	M. Aghaei	Particle journey through an ICP torch: what modeling reveals?
10:45-11:00	OL22	S. Matějková (CZ)	Use of electrothermal evaporation coupled with atomic emission spectroscopy (ETV-ICP-OES) in analysis of small amounts of organic and biological samples
11:00-11:15	OL23	K. Novotný (CZ)	Comparison of different spectral resolution ICP-OES spectrometers for the determination of rare earth elements
11:15-12:00	<b>COFFEE BREAK</b>		
<b>Session 13 Sample preparation</b>			<b>Chair: Yaroslav Bazel'</b>
12:00-12:15	OL24	P. Roubíček (CZ)	Can dynamic image analyse method replace classical sieve analysis?
12:15-12:30	OL25	A. Krejčová (CZ)	Testing the reliability of the washing process in hair analysis through a contamination study
12:30-13:00	<b>CLOSING CEREMONY (V. Kanický, M. Miglierini)</b>		
13:00	<b>LUNCH</b>		

**Microsymposium Challenges in Raman spectroscopy  
PROGRAMME**

**Wednesday 30 May**

11:20-11:30	<b>Microsymposium Challenges in Raman Spectroscopy-opening</b>		
<b>Session M1</b>		<i>Chair: Blanka Vlčková</i>	
11:30-12:00	IL-M1	M. Procházka	Rationally designed metal nanostructures for SERS detection of biologically important molecules
12:00-12:30	IL-M2	K. Machalová-Šišková	Raman and surface-enhanced Raman spectroscopic studies of the large cytoplasmic loop of sodium-potassium pump
12.30-13.00	IL-M3	M. Kloz	Spectral watermarking approach to femtosecond Raman Spectroscopy
13:00-14:00	<b>LUNCH</b>		
<b>Session M2</b>		<i>Chair: Renato Zenobi</i>	
14:00-14:30	IL-M4	L. Kavan	Raman spectroelectrochemistry of nanocarbons and titania
14:30-15:00	IL-M5	J. Kalbáčová-Vejpravová	Cryomagnetic Raman micro-spectroscopy - beyond phonons
15:00-15:30	IL-M6	M. Kalbáč	In situ Raman spectroelectrochemistry of carbon nanostructures
15:30-16:00	IL-M7	V. Valeš	Enhanced Raman scattering on functionalized graphene substrates
16:00-16:30	<b>COFFEE BREAK</b>		
<b>Session M3</b>		<i>Chair: Jürgen Popp</i>	
16:30-17:00	IL-M8	J. Štěpánek	Raman scattering and physical chemistry of biomolecules
17:00-17:30	IL-M9	P. Mojzeš	Raman microscopy of microalgae: surprising insights and challenges in the unexplored world
17:30-18:00	IL-M10	M. Michl	Intramolecular excitation energy and charge transfer: fluorescence, transient absorption and resonance Raman studies

**Thursday 31 May**

<b>Session M4</b>			<i>Chair: Marek Procházka</i>
8:45-9:15	IL-M11	I. Němec	Vibrational spectroscopic characterisation of hydrogen-bonded molecular crystal for nonlinear optics
9:15-9:45	IL-M12	I. Matulková	Vibrational spectroscopic studies of salts of 2,4,6-triaminopyrimidinium and phosphoric acid prepared for non-linear optical applications
9:45-10:15	IL-M13	I. Šloufová	Terpyridine-based ligands and their metal complexes: Raman and surface-enhanced Raman study
10:15-10:45	IL-M14	M. Dendisová	Copper nanostructures: Profits and drawbacks for SEVS techniques
10:45-11:30	<b>COFFEE BREAK</b>		
<b>Session M5</b>			<i>Chair: Ivan Němec</i>
11:30-12:00	IL-M15	V. Baumruk	Raman optical activity
12:15-12:30	IL-M16	B. Vlčková	Towards SERS and SERRS on single molecule level