

08:00 **Registration**

08:45 **Welcome Session**

09:00 **Session 1 - Processing & Chemometrics**

CHAIRS: Nerea Bordel & Nicolas Herreyre

Ludovic Duponchel, F **keynote**

Chemometrics as the Swiss Army Knife of LIBS

Zuzana Gajarska, A

Feature extraction from complex LIBS matrices

Nicolas Quintin, F

Study of matrix effects at micrometer scale

Simon Van den Eynde, B

LIBS classification and regression techniques for waste sorting

10:20

Coffee Break

10:50 **Session 2 - Fundamentals**

CHAIRS: Bruno Bousquet & Doriane Gallot-Duval

Alessandro De Giacomo, I **invited**

Laser induced high-density plasma evolution and optical emission efficiency

Timur Labutin, RUS **invited**

Non-analytical Applications of Laser-Induced Breakdown Spectrometry

Igor Gornushkin, D

Importance of Spectral Resolution for Accurate Plasma Diagnostics with Implications for Calibration-Free LIBS

Aleksandr Zakuskin, RUS

Laser-induced Fluorescence and Thomson Scattering for Spatially Resolved Plasma Diagnostics

Birgit Achleitner, A

In-situ LIBS study of temperature induced processes in material analysis

12:30

Lunch

14:00 **Session 3 - Mapping**

CHAIRS: Pavel Pořízka & Eva Zikmundová

Vincent Motto-Ros, F **keynote**

The Tortuous Issues of Imaging Rocks by LIBS

Jakub Buday, CZ

Rock classification utilizing correlative imaging of large-scale geological samples using LIBS and EDX

Bruno Bousquet, F

LIBS imaging for high throughput screening in thin-film materials

Doriane Gallot-Duval, F

Characterization of lithium isotopes in innovative materials for energy-related applications using elemental mapping based on LIBS analysis

Charles-P. Lienemann, F

Determination of elemental composition and mapping of plastic pellets by LIBS – an interesting tool for plastics recycling

15:35

Coffee Break

16:05 **Session 4 - Multimodal**

CHAIRS: Ludovic Duponchel & Xueshi Bai

Nuno Silva, P **invited**

Harnessing Multimodal Spectral Imaging: from sensor fusion to autonomous supervisors

Claudio Sandoval, RCH

Elemental and mineralogical imaging of Cu-mineralized rocks by coupling u-LIBS@HSI

Virginia Merk, D

What can we learn about lithium-ion battery materials from the combination of LIBS and Raman?

Norbert Huber, A

A combination of LIBS and LUS for quality control of WAAM components

Jan Vijjanen, FIN **cancelled**

Isotope Detection by Microwave-Assisted Laser-Induced Breakdown Spectroscopy

17:35

Poster S1 Sunset & Wine Tasting

08:30 Session 5 - Instrumental & Industry

CHAIRS: Jozef Kaiser & Hana Kopřivová

Pavel Pořízka, CZ **keynote**

Towards universal calibration libraries for LIBS payloads

Yoshihiro Deguchi, J **invited**

LIBS applications of online monitoring and 2D/3D mappings for advanced control of industrial processes

Johannes D. Pedarnig, A

LIBS and LA-SD-OES for the discrimination of technical polymers

Benjamin Klie, D

Conversion of an industrial single-pulse LIBS system to double-pulse operation to improve sulfur detection in rubber-based parts

Gerd Wilsch, D

30 years of LIBS in civil engineering – A transfer from the laboratory to practice

Shunchun Yao, RC **cancelled**

Advances in LIBS Direct Analysis of Particle Flow: From Plasma Characteristics to Practical Applications

10:25

Coffee Break

10:55 Session 6 - Industry

CHAIRS: Mohamad Sabsabi & Lisa Balke

Reinhard Noll, D **invited**

Opening up industrial applications for inline analysis with LIBS

Cord Fricke-Begemann, D

Inline LIBS for the metal recycling industry

Jorge Yañez, RCH

New developments on LIBS technologies for the Cu-industry

Lukas Quackatz, D

LIBS In situ Chemical Analysis in Duplex Stainless Steel Welding

Kristjan Leosson, IS

Deployment of LIBS Analyzers in the Aluminum Industry

Arif Demir, TR

In-situ Chemical Composition Analysis of Molten Aluminum Alloys in Industrial Furnaces by LIBS

12:30

Lunch

14:00 Session 7 - Mining and Geological applications

CHAIRS: Alexandre Lima & Diana Guimarães

Mohamad Sabsabi, CDN **keynote**

The Laser-Induced Breakdown Spectroscopy Assisted with Laser-Induced Fluorescence (LIBS-LIF) advantage and drawbacks for mining and energy applications

Salvatore Siano, I **invited**

Dedicated LIBS tools for characterizing geomaterials

Cécile Fabre, F **invited**

When LIBS can help the geologist

Jean-Marc Baele, B

LIBS profiles of sedimentary sections : a new tool for paleoclimatic and paleoenvironmental reconstructions?

Samira Selmani, CDN

Analysis of palladium in rock ore by Laser-Induced Breakdown Spectroscopy (LIBS) and characterization of the morphology of laser-produced craters

César Álvarez-Llamas, F

High-Throughput micro LIBS imaging on geological applications

16:00

Coffee Break

16:30 Session 8 - Sponsor Sessions

CHAIRS: Pedro Jorge & Nuno Silva

Peter Bartko, ATOM TRACE

Rawad Sade, Lumibird

C Derrick Quarles Jr, Elemental Scientific

Arif Demir, System Technik

Thomas März, INNOLAS

Giedrius Kudaba, EKSPILA

Florian Trichard, Ablatom

18:00

Poster S2 Sunset & Beer Tasting

08:30 Session 9 - Nuclear

CHAIRS: José M. Vadillo & César Lamas

Sebastijan Brezinsek, D **keynote**

Application of laser-based surface analysis techniques in magnetically confined nuclear fusion research

Hennie Van Der Meiden, NL **invited**

Recent advances in developing LIBS as a fuel monitoring tool for nuclear fusion applications in Europe

Salvatore Almagia, IT

LIBS as diagnostics of analytical chemistry for surface mapping of complex mixed samples simulating debris inside the TEPCO's Fukushima Daiichi Nuclear Power Plant (FDNPS) reactor cores

Philip A. Martin, UK

Laser ablation – laser absorption spectroscopy for isotopic analysis

Pavel Veis, SK

Depth Analysis of WTa-D/Mo sample by Resonant-Laser Induced Breakdown Spectroscopy

Derrick Quarles, USA

Utilization of LIBS for rapid elemental mapping of surrogate TRISO particles - an alternative for nuclear fuel

10:25

Coffee Break

10:55 Session 10 - Biomedical applications

CHAIRS: Vincent Motto-Ros & Laura García-Gómez

Jozef Kaiser, CZ **invited**

LIBS for direct and indirect detection of bioindicators in human clinical samples

Vincent Gardette, F

LIBS imaging for medical applications: overview and case studies

Fengye Chen, RC

Screening ovarian cancers using patient plasmas with LIBS and Raman: separated and fused data analysis with machine learning

Anna Konečná, CZ

Comparative study of human teeth decalcification by LIBS

Steven J. Rehse, CDN

Laser-Induced Breakdown Spectroscopy for the Identification of Bacterial Pathogens in Blood and Urine

J. Cárdenas-Escudero, E

Laser-induced breakdown spectroscopy for the in vitro bioequivalence determination of generic drugs with BCS-class II, III and IV active pharmaceutical ingredients

12:30

Lunch

14:00 Session 11 - Extreme Environments

CHAIRS: Alessandro de Giacomo & Samira Selmani

José M. Vadillo, E **invited**

Deep-UV laser-induced breakdown spectrometry and laser-ionization mass spectrometry for astrochemistry studies

Jin Yu, RC

In-situ LIBS measurements in Utopia Planitia Mars by the Zhurong Rover

Laura García-Gómez, ES

Detection of kerogens in sedimentary rocks by LIBS. Implications for the search for biosignatures on Mars

Markéta Bosáková, CZ

Hyphenated acoustic/optical emission spectroscopic data from laser-induced sparks to geological material characterisation

Ye Tian, RC **cancelled**

Impact of high pressure on underwater laser-induced breakdown spectroscopy

15:35

Coffee Break

16:05 Session 12 - Agro-food & Environment

CHAIRS: Pedro Jorge & Ivo Raimundo Jr.

Ismail Boyaci, TR **invited**

LIBS Applications for Food Safety and Quality

Jörg Hermann, F

Limits of detection in LIBS analysis of food

Edilene C. Ferreira, BR

Optimization of Spark Discharge-LIBS parameters to measure soil total organic carbon

Vishal Dwivedi, FIN

Development of a Field-Capable LIBS System for Rapid Soil Elemental Monitoring

Carla P. de Morais, CDN

Scalable solution for the carbon credit market in agricultural soils using laser-induced breakdown spectroscopy

19:00

Porto Wine Cellars Visit

20:30

Gala Dinner

09:00 **Session 13 - Heritage**

CHAIRS: Salvatore Siano & Cristina Méndez-López

Vincenzo Palleschi, I **keynote**

The LIBS Heritage: a brief history of the first 40 years of LIBS, with some considerations on its future perspectives

Nicolas Herreyre, F

μLIBS imaging for the characterization of heterogeneous archaeological materials

Carlos Rinaldi, RA

Laser induced breakdown spectroscopy (LIBS) for identification and classification of archaeological bones

Monica Dinu, RO

LIBS stratigraphy in the aid of revealing the hidden layers of a post-byzantine icon

Xueshi Bai, F

Implementation of a laser-induced breakdown spectroscopy (LIBS) solution for controlling safe analysis of cultural heritage materials under intensive radiation beams

10:35

Coffee Break

11:05 **Session 14 - Molecular and Nanoparticles**

CHAIRS: Vincenzo Palleschi & Vincent Gardette

Dávid J. Palásti, HU

Metallic and alloy nanoparticles: their detection and application to signal enhancement in LIBS

Francisco J. Fortes, E

Ultrafast laser excitation in atmospheric pressure optical traps for studying attogram mass nanoparticles

Layla P. Santos, BR

TiO₂ as a modifier of a Bentonite/Sepiolite Substrate for Signal Intensification in LIBS Molecular Analysis of Organic Liquids

Clayton S. C. Yang, USA

Simultaneous UV/Visible/NIR + LWIR Laser Induced Breakdown Spectroscopy of Organic Isomers

Michael Gaft, IL

Isotopes Detection of GdO in Laser-Induced Plasma by Demon High Spectral Resolution Double Echelle Monochromator

Nikolai Tarasenko, BY **cancelled**

LIBS Analysis of Surface Homogeneity of Deposited Nanocomposite Films for Sensor Applications

Awards and Closing Ceremony

13:00

Light lunch