



EMSLIBS PORTO,
PORTUGAL
2023

12TH

**EURO-MEDITERRANEAN SYMPOSIUM
ON LASER-INDUCED
BREAKDOWN SPECTROSCOPY**

**EVENT
BOOKLET**



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WELCOME

Dear Colleagues,

Welcome to the 12th EMSLIBS meeting!

We are delighted to welcome you to Porto, to attend the 12th edition of the European Conference on Laser-Induced Breakdown Spectroscopy (EMSLIBS), between the 4th and the 7th of September 2023.

Following a long period of social restrictions, we are committed to offer you a fully “in person” event with lots of high-quality science and technology, but also opportunities for social engagement and networking, framed in our vibrant city of Porto, with lots of culture, history and delicious gastronomy.

Thanks to your contribution, this year's conference will feature a diverse and exciting scientific program, with keynote presentations by leading experts in the field of LIBS, and a diversity of innovative contributions, both from industry and fundamental science. EMSLIBS community is keeping its vibrancy, as we received contributions from more than 35 countries across the globe.

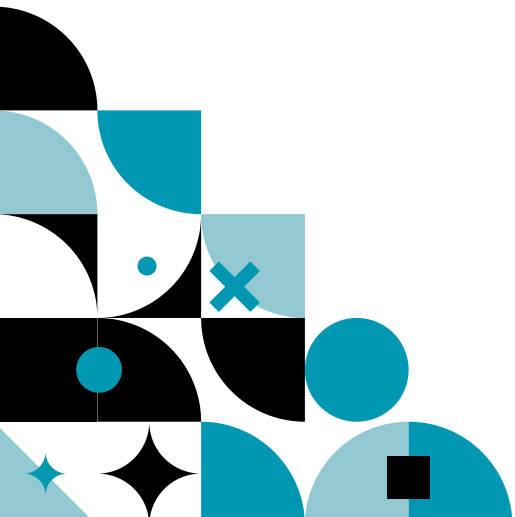
Also, showing the growing importance of LIBS in industry, we will have a full house of Industrial Partners, in the technical exhibition. These companies have contributed with their sponsorship to the viability of this event. Only thanks to our sponsors we were able to offer a low-cost registration for students, contributing to a truly intergenerational event.

We hope our event in Porto contributes to the growth of LIBS community, in the broad sense of the word. Passionate people exchanging ideas, towards better science and technology, for a better tomorrow.

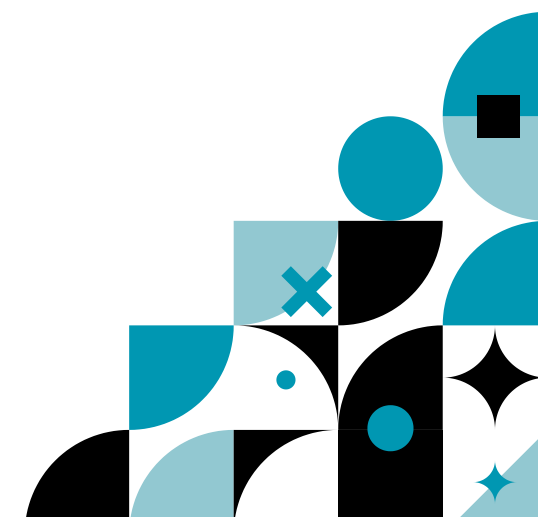
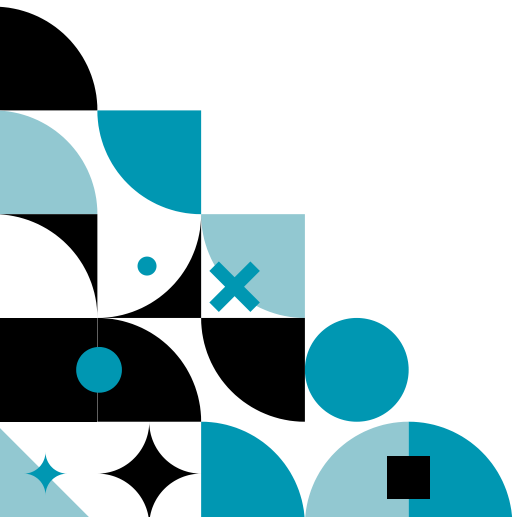
Thank you for joining us!
We hope you will enjoy this exciting event!

Sincerely,


(Pedro Jorge)
Conference Chair
On behalf of the Organising Committee



FULL PROGRAM



DAY 1

Monday | 4th September

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**

DAY 1

Monday | 4th September

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 Viljanen, FIN **cancelled**

Isotope Detection by Microwave-Assisted Laser-Induced Breakdown Spectroscopy

17:35 **Poster S1 Sunset & Wine Tasting**

DAY 2

Tuesday | 5th September

08:30 **Session 5 - Instrumental & Industry**

CHAIRS: Jozef Kaiser & Hana Koprivová

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**

DAY 2

Tuesday | 5th September

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, EKSPLA

Florian Trichard, Ablatom

18:00 **Poster S2 Sunset & Beer Tasting**

DAY 3

Wednesday | 6th September

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 Almaviva, 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*

DAY 3

Wednesday | 6th September

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 Boyacı, 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*

DAY 4

Thursday | 7th September

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*

POSTERS

- P1 **Salvatore Almaviva** A design proposal for an unmanned LIBS system for the detection of bioagents in aerosols
- P2 **Sami Ul Haq** Compositional analysis and classification of rocks with calibration-free standoff laser-induced breakdown spectroscopy (LIBS) and Principal component analysis (PCA)
- P3 **Adel Tekili** AIN Plasma Emission Behavior in Nitrogen and Argon Atmospheres
- P4 **C. Derrick Quarles Jr** Expanding the Elemental Coverage by Combining LIBS with ICP-TOF-MS for High-Speed Imaging
- P5 **Cristina Méndez-López** Study of intensity enhancement by a ns-laser focused on slow or fast component of a fs-LIP
- P6 **Alessandro De Giacomo** Self-calibrated LIBS approach for space exploration and volcanic hazards assessment
- P7 **Georg Ankerhold** Correlation of Surface Hardness and Plasma Temperature in LIBS Measurements of Low-Alloy Carbon Steel
- P8 **Alena Zavadilová** LIBS of uranium in eye-safe area **cancelled**
- P9 **Ismail Elhmdaoui** Validation of Laser-Induced Breakdown Spectroscopy assisted by Laser-Induced Fluorescence (LIBS-LIF) for the measurements of platinum and palladium in solid ore
- P10 **Marion Henkel** Double-pulse LIBS in water with up to 600 bar hydrostatic pressure and up to 400 millijoule each pulse
- P11 **Lev Nagli** Laser-Induced Plasma Lasers: Polarization properties
- P12 **Hudson Kalambuka Angeyo** Diagnostic Insights into Cancer and Malaria Utilizing Machine Learning Peak-Free LIBS
- P13 **Dacheng Zhang** Improving the sensitivity and resolution of LIBS by laser technology
- P14 **Jafet Cárdenas-Escudero** Quantification of solid metallic nanoparticles on glass functionalized surfaces by Laser-Induced Breakdown Spectroscopy
- P15 **Shauna Ryan** Clever data treatment procedure for spectrochemical analysis with laser-induced breakdown spectroscopy spectral data
- P16 **Jan Viljanen** Total Soil Phosphorus Detection Using Laser-Induced Fluorescence-Assisted Laser-Induced Breakdown Spectroscopy **cancelled**
- P17 **Tomás Delgado** LIBS detection of organic biosignatures in carbonate and sulphate substrates under a Mars simulated atmosphere
- P18 **R. Cruz-Alcázar** Use of the LIBS technique in archaeological context for the re-association of human remains
- P19 **Vivek K. Singh** Investigation of Nail Samples Using Laser-Induced Breakdown Spectroscopy and Energy Dispersive X-ray Spectroscopy
- P20 **Stefan Grünberger** Investigations of matrix effects on steel samples with LIBS and LA SD OES (Laser Ablation Spark Discharge Optical Emission Spectroscopy)
- P21 **Monica Dinu** Go-on-target in art
- P22 **Jordan Fernandes** High - resolution imaging of Li-ion electrodes by micro-LIBS
- P23 **James Campbell** An Experimental Study of Colliding (Ultrafast) Laser Plasma Plumes Using Time Resolved Imaging and Spectroscopy
- P24 **Minchao Cui** Long-short double pulse laser-induced breakdown spectroscopy for carbon detection in steel samples
- P25 **Soojin Choi** Deep learning-based laser induced breakdown spectroscopy for inline process monitoring

POSTERS

- P26 **Rongxing Yi** Scanning laser induced breakdown spectroscopy for depth resolved elemental analysis
- P27 **Deniz Kavrar Urk** Analyzing the Catalyst Particles in the Vertically-Aligned Carbon Nanotubes using Laser Induced Breakdown Spectroscopy Method
- P28 **Chen Sun** Femtosecond filament-induced breakdown spectroscopy for quantitative analysis of remote targets
- P29 **Ivo Raimundo Jr.** Comparison of analytical methods for determination of scaling ions in oilfield produced water
- P30 **Arpita Nath** Laser induced breakdown spectroscopy of underwater manganese targets in presence of electrolysis
- P31 **Zhifang Zhao** Diagnosis of melanoma using blood based on laser-induced breakdown spectroscopy with machine learning methods
- P32 **Dávid J. Palásti** Effect of pulse properties of a Q-switched fiber laser source on the laser induced breakdown plasma
- P33 **Ivan Krylov** Combined plasma stationary model and stochastic optimisation for calibration-free analysis of cosmic and ocean samples
- P34 **Filipa Dias** Calibrating a handheld LIBS SciAps Z300 to analyze spodumene and petalite for Li-exploration in the Barroso-Alvão aplite-pegmatite field, Northern Portugal
- P35 **Pravin Kumar Tiwari** Improving LIBS quantification accuracy through multi-pulse laser energy study
- P36 **Christian Burlet** Testing a screening methodology to identify Critical Raw Materials with Laser-Induced Breakdown Spectroscopy
- P37 **Davide Ciniglia** Study of matrix effect in aerosol LIBS measurements: ambient gases and multi-element aerosol
- P38 **Naila Mezoued** Automatic recognition of minerals: contribution of the LIBS portable tool
- P39 **Hamida Zia** Compositional analysis of ZnMgO ternary oxides using the calibration-free laser-induced breakdown spectroscopy (LIBS)
- P40 **Akash Kumar Tarai** Knowing the Unknown: Identifying Post-consumer Plastics with LIBS and Deep Neural Networks
- P41 **Hugo Sobral** Characterization of laser produced plasmas re-excited with high voltage discharges on heated soil samples
- P42 **Rafael Cabanzo-Hernández** Predictive model for cadmium concentration in cocoa beans using laser-induced breakdown spectroscopy
- P43 **Rafael Cabanzo-Hernández** Production Water Analysis by Combining Electro Spray on Paper (EPS) and Laser-Induced Breakdown Spectroscopy (LIBS) techniques
- P44 **Lisa Balke** Multi-Elemental Analysis of the Solid-Electrolyte Interphase in Lithium-Ion Batteries using LIBS: Insights into F, Li, H, C, O, and P Distributions
- P45 **Ivo Krempf** LIBS imaging of selenium ores
- P46 **Alexander Erler** LIBS in Precision Agriculture: Approaching on-site soil analysis
- P47 **Mari Paz Mateo** Characterization by laser-induced breakdown spectroscopy of new functionally graded materials obtained by additive manufacturing
- P48 **Kristbjörg A. Thórarinsdóttir** LIBS Analysis of Volatile Elements in Molten Metal
- P49 **Aleksandr Zakuskin** Machine Learning Prediction of Stark Broadening Parameters for Accurate Plasma Modeling
- P50 **Martin Zühlke** Process analysis in industrial lithium enrichment by LIBS

POSTERS

- P51 **Aleš Hrdlička** Material aspects in laser-induced breakdown spectroscopy analysis of algae on filters
- P52 **Pawel Gasior** ANN-based features conversion of dimensionally reduced LIBS data for calibration on synthetic spectra
- P53 **Adrian Tercier** kHz micro-LIBS imaging: a new way to see the future of LIBS
- P54 **Jonnathan Álvarez** Characterization of molybdenite and other hosted species in drill-cores by laser-induced breakdown spectroscopy (LIBS)
- P55 **Ana Flávia L.M. Nascimento** Synthesis of Gold Nanoparticles by Ring-Oven Technique for NELIBS Applications
- P56 **Arun Prakash Gummadi** Design of compact low-cost Standoff Laser Induced Breakdown Spectroscopy Instrument
- P57 **Lana Neoričić** μ LIBS imaging of archaeological material from Gallo-Roman Lugdunum
- P58 **N. Lellouche** Determination of the self-absorption coefficients of a Zn-based alloy using laser induced breakdown spectroscopy (LIBS)
- P59 **Juan C. Londono Alfaro** LIBS and light-scattering imaging of automotive brake-wear particle emissions
- P60 **Birgit Achleitner** Determination of chlorine migration in polymers using LIBS
- P61 **Babken Beglaryan** Implementation of atomic and molecular laser-induced fluorescence for spatially resolved plasma diagnostics
- P62 **Shweta Soni** Trace detection of heavy metals in water by surface assisted LIBS-LIF
- P63 **Sanath Shetty** Composition and depth analysis of zirconium diboride using vacuum UV LIBS
- P64 **Pavitra G. Bhat** Application of Spatial Heterodyne Spectrometer for LIBS and Raman Spectroscopy
- P65 **Daniel Holub** Detection and estimation of a Microplastic particle size by laser-based spectroscopy techniques
- P66 **Eva Zikmundová** Laser-induced breakdown spectroscopy readout of magnetic microbeads-based immunoassay
- P67 **Ludmila Čechová** Utilizing Laser-Induced Breakdown Spectroscopy for Heavy Metal Bioimaging in Cannabis sativa L.
- P68 **Hana Kopřivová** Advanced correlative imaging of malignant melanomas using LIBS, LA-ICP-MS and immunohistochemistry
- P69 **Şeyma Melike** Chemical Analysis of Spent Coffee Ground filled Polypropylene (SCG/PP) by Laser Induced Breakdown Spectroscopy (LIBS)
- P70 **Zuzana Gajarska** Python library for the retrieval of valuable information from LIBS spectra
- P71 **Fengye Chen** Precise determination of organic and inorganic carbons in a Martian soil simulant under the Martian CO₂ atmosphere
- P72 **Aleksandr Rylov** Multidimensional Regularization: Quick Fix for Abel Inversion of Noisy Data
- P73 **Meenatchi Arumugam** Analysis of oscillatory ION signal via Langmuir probe of laser ablated ruby plasma cancelled
- P74 **Xiangjun Xu** Analysis and application of laser-induced plasma polarization effects
- P75 **Fernando A. Casian Plaza** Food safety-related qualitative discrimination analysis of herbs by LIBS and Raman spectroscopy

POSTERS

- P76 **Seamus Cummins** A Preliminary Investigation Into Standoff LIBS and Multi-spectral Imaging for use in Wind Turbine Contaminant Detection
- P77 **Joris Coron** Investigating critical metals Ge and Ga in complex sulphide mineral assemblages using LIBS mapping
- P78 **A. Bebon** Molten salt setup analysis
- P79 **Şerife Yalçın** Novel Non-metallic Substrate Surfaces for Laser-Induced Breakdown Spectroscopic Analysis of Liquids
- P80 **İlayda Yaman** Laser-Induced Breakdown Spectroscopy studies of metalloproteins at reduced pressures
- P81 **Francisco J. Fortes** Analysis and discrimination of single meteorite particles in an optical trap (OCOT-LIBS)
- P82 **Beiyi Zhang** Sensitive and accurate determination of nitrogen in simulated Martian soil and environment with LIBS spectrum fusion and regression based on neural network
- P83 **M. Velásquez** Development of μ -LIBS system for the mapping of inclusion-rich drill cores
- P84 **Diana Capela** Interpretable Mineral Identification using Laser-induced breakdown spectroscopy
- P85 **Diana Capela** Elemental Mapping of 3D structures using Laser-induced breakdown spectroscopy
- P86 **Tomás Lopes** Opportunities in collaborative LIBS and Hyperspectral imaging: from sensor fusion to knowledge distillation
- P87 **Tomás Lopes** Interactive three dimensional chemical element maps with Spectral Imaging and photogrammetry
- P88 **Miguel Ferreira** Industrial LIBS system for quality assessment of functional coatings in cork stoppers
- P89 **Tomás Lopes** Novel Solutions for Finding Relevant Maps in LIBS imaging datasets
- P90 **Clara Miranda** Cellulose Nanocrystal-ZnO hybrid systems: Design, Characterization and ZnO Quantification with LIBS technology

SOCIAL PROGRAM

Sunset & Wine Tasting

Monday, 4th September | 17:35

Location:

OCC - Ordem dos Contabilistas Certificados

[roof top]

Largo 1º de dezembro, 62

4000-404 Porto

Poster session 1 will be held on the Venue Roof top, with an excellent view of Porto skyline.

This technical session will be blended into a social occasion where some local wines and appetizers will be served.

SOCIAL PROGRAM

Sunset & Beer Tasting

Tuesday, 5th September | 18:00

Location:

OCC - *Ordem dos Contabilistas Certificados*

[roof top]

Largo 1º de dezembro, 62

4000-404 Porto

Poster session 2 will be held on the Venue Roof top, with an excellent view of Porto skyline.

This technical session will be blended into a social occasion where some local craft beers and appetizers will be served.

SOCIAL PROGRAM

Port Wine Caves Taylor's visit

Wednesday, 6th September | 19:00

Location:

Taylor's Port

Rua do Choupelo, 250

4400-088 Vila Nova de Gaia

Established over three centuries ago in 1692, Taylor's is one of the oldest of the founding Port houses. It is dedicated entirely to the production of Port Wine, and in particular to its finest styles.

In this experience, we invite you to visit the Caves Taylor's in Vila Nova de Gaia, for a guided tour of the Port Cellars.

After the visit, you will enjoy a taste of Porto Wine, with a magnificent view of Porto.



Credits: Taylor.pt

SOCIAL PROGRAM

Gala Dinner

Wednesday, 6th September | 20:30

Location:

Taylor's Port
Rua do Choupelo, 250
4400-088 Vila Nova de Gaia

The conference dinner will be held at Barão Fladgate Restaurant at Caves Taylor's estate.

You will enjoy stunning views over Porto and the River Douro from the terrace and beautiful gardens or from within the restaurant whilst savoring traditional Portuguese dishes accompanied by the best of Portuguese wines.

COMMITTEES

Pedro Jorge

Conference Chair
INESC TEC
Portugal



Javier Laserna

Co-Chair
Universidad de Málaga
Spain



Nerea Bordel

Co-Chair
Universidad de Oviedo
Spain



COMMITTEES

International Scientific Committee:

Demetrios Anglos Greece
Roberta Fantoni Italy
Yoshihiro Deguchi Japan
Alessandro De Giacomo Italy
Russell Harmon USA
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Yu Jin China
Andrzej W. Miziolek USA
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Vincenzo Palleschi Italy
Nicoló Omenetto Italy
Ulrich Panne Germany
Johannes David Pedarnig Austria
Rick Russo USA
Mohamad Sabsabi Canada
Alexandre Semerok France
Israel Schechter Israel
Jean-Baptiste Sirven France
Şerife Yalçın Turkey
Javier Laserna Spain

COMMITTEES

Local Organising Committee:

Pedro Jorge
Nuno Silva
Diana Guimarães
Lídia Vilas Boas
Catarina Carvalho

SPEAKERS

Ludovic Duponchel

LASIRE Lab, University of Lille (France)

Ludovic Duponchel earned his Ph.D. in Physical Chemistry back in 1997. His research at that time centered around creating a portable near infrared spectrometer that could be used for chemical analysis in the agrofood industry. Following that, he spent two years conducting instrumental and chemometrics research at the Horiba Jobin-Yvon Company in Paris. By 2000, he had become an Assistant Professor, working out of the LASIR lab at the University of Lille. Since 2008, he has held the position of Full Professor at the same university. In addition, he was the Chairman of the French Chemometrics Society from 2013 until 2022. Duponchel's academic pursuits mainly involve the development of new chemometric methodologies, which help to delve deeper into various spectral data sets.



Vincent Motto-Ros

Institut Lumière Matière,
Université de Lyon (France)

Vincent Motto-Ros obtained in 2008 an associate professor position at the University Claude Bernard Lyon 1. He is working since in the development of the LIBS technique in the Light and Matter Institute (ILM). He has an excellent international visibility for his expertise in LIBS instrumental development, quantification, experimental training, and elemental imaging of biological tissues. He is author of more than 100 papers on peer reviewed journals, 2 patents, about 70 presentations at national and international conferences. He has more than 4100 total citations and a H-index=40 (Google Scholar).



SPEAKERS

Sebastijan Brezinsek

Institut für Energie und Klimaforschung –
Plasmaphysik (Germany)

Leading expert in plasma-material interactions and plasma-edge physics in devices relevant for nuclear fusion research. Scientific focus on steady-state compatibility of power- and particle-exhaust solutions with fusion-relevant plasmas. Vast expertise in passive spectroscopy, laser-aided plasma and surface diagnostics for fusion and low-temperature plasma applications. Experienced project manager of large-scale research projects within the German, European, and international research bodies. Definition, steering, and control of several European multiyear programs. Fully qualified in the leadership of larger scientific and administrative teams. Experienced JET task force leader responsible for the main scientific objectives of the ITER-like Wall project. Former European permanent member of the ITPA DivSOL group.



Mohamad Sabsabi

National Research Council of Canada

Mohamad Sabsabi obtained his PhD in plasmas physics from the University of Paris XI in 1988. He spent more than 3 decades developing laser-based spectroscopic techniques. He holds 22 patents and published over 600 papers and conference papers covering fundamental aspects and industrial applications of laser-induced plasmas in mining, agricultural, metallurgical, pharmaceutical, aerospace and manufacturing sectors. In 2019 he received the LIBS Award on fundamental and in 2021 he received the International LIBS Summit Award in Beijing for quantitative LIBS. He is currently a Principal Research Officer at NRC leading an advanced sensor technology platform.



SPEAKERS

Pavel Pořízka

CEITEC Brno University of Technology
(Czech Republic)

Associated Professor, actively involved in the world-wide LIBS community from his master's degree (2010). During his PhD internship at BAM in Berlin, Germany, he gained considerable knowledge in advanced data processing and chemometrics. Right after reaching PhD (2014), he was appointed to lead the laboratory of Laser Spectroscopy at CEITEC Brno University of Technology. From the very beginning he has fostered the Laser spectroscopy group with a long-term vision to have an impact on current research trends (including biology and clinical research), to systematically build-up the know-how in selected applications and to transfer LIBS technology to daily routine. Future perspective of the laboratory focuses on the development of LIBS instrumentation and methodology for prospecting of celestial bodies.



Vincenzo Palleschi

Institute of Chemistry of Organometallic
Compounds (Italy)

Vincenzo Palleschi is a Physicist, Research Director of the Laser and Applied Spectroscopy Laboratory of the Institute of Chemistry of Organometallic Compounds at the Research Area of the CNR in Pisa (Italy). Works mainly in the field of Laser-Induced Breakdown Spectroscopy, but he also has experience in X-ray fluorescence techniques, micro-Raman spectroscopy, multispectral imaging, 3D photogrammetry and chemometrics. He has published more than 280 articles in international journals. He currently teaches Analytical Chemistry V, Archaeometry and Physics Applied to Cultural Heritage at the University of Pisa. In 2019 he received the LIBS Award and in 2021 he received the International LIBS Summit Grand Award.



ORGANISER



INESC TEC is a private non-profit research association, with Public Interest status, dedicated to scientific research and technological development, technology transfer, advanced consulting and training, and pre-incubation of new technology-based companies.

Present in six sites in the cities of Porto (headquarters), Braga and Vila Real, and with more than 800 researchers, INESC TEC acts from knowledge generation to science-based innovation, and performs collaboratively in search for a more sustainable, responsible, and improved world.

The primary goal of INESC TEC is to exceed performance in research, while considering its social, environmental, and economic impact, with a commitment to the scientific and technological contribution to foster pervasive intelligence. As so, INESC TEC endeavours to be a relevant international player in Science and Technology in eight scientific domains, Artificial Intelligence, Bioengineering, Communications, Computer Science and Engineering, Photonics, Power and Energy Systems, Robotics and Systems Engineering and Management.

Being an institution that operates at the interface between the academic and business worlds, bringing academia, companies, public administration, and society closer together, INESC TEC generates new knowledge as part of its research, and leverages that knowledge in technology transfer projects, seeking impact through both value creation and social relevance.

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LUMIBIRD is one of the world's leading specialists in lasers. With over 50 years of experience and expertise in 3 key technologies - solid-state lasers, laser diodes and fiber lasers - the group (formerly Quantel-Keopsys) designs and manufactures high performance lasers for the industrial, scientific, space, defense and medical markets. Listed on the stock exchange, the group is headquartered in France and is present on several continents through its 11 production and R&D sites and its sales and support offices.



LTB Lasertechnik Berlin GmbH

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LTB Lasertechnik Berlin GmbH is an innovative developer and manufacturer of nitrogen lasers, high resolution echelle spectrometers and laser-based analyzers using LIBS and Raman spectroscopy. The systems are used in a wide range of applications, for example geology and mineralogy, metallurgy, battery research and particle analysis. Thanks to the in-house development and production of our systems, we can focus on individual customer requirements and thus also enable customized solutions.



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Ablatom SAS is an innovative company providing integrated solutions for the elemental analysis of all sorts of materials using LIBS technique. Thanks to our partnership with the Institute of Light and Matter (ILM, Lyon) and backed by more than 15 years of R&D, we design and integrated robust and reliable LIBS analysers, tailored to meet your specific requirements. Our systems have qualitative, quantitative, and imaging capacity, allowing you to identify, quantify, and visualize the elemental distribution of your sample.



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EKSPLA

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EKSPLA focuses on the design and manufacturing of advanced lasers & systems and employs more than 30 years' experience as well as a close partnership with the scientific community. The ability to effectively tailor products for specific applications and requirements is one of the main competences of EKSPLA. 80 out of the 100 top universities use EKSPLA lasers. The company is leading in the global market for scientific picosecond lasers. The main products are femtosecond, picosecond and nanosecond lasers, tunable wavelength systems, spectroscopy systems - various modifications of SFG spectrometers, high energy laser systems, ultrafast fiber lasers and high power industrial picosecond lasers.



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MONTFORT Laser develops and manufactures extremely compact pulsed DPSSL lasers with a performance unique for their small form factor. The M-NANO compact Nd:YAG nanosecond laser generates up to >120mJ pulse energy from a palm-sized nanosecond laser head product for applications including LIBS, PIV, LIF, PHOTOACOUSTICS, LIDT testing, etc. MONTFORT Laser offers specialty ultrafast DPSSL modelocked oscillators with sub-100-fs pulse to picosecond durations and 0.1W to 100W average output power.



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Sistem Teknik Industrial Furnace LTD

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www.sistemteknik.com

Sistem Teknik was founded as a start-up company by two college friends from the Middle East Technical University, Orhan Obalı and Mehmet Özdeşlik in 1979. In 2009, Sistem Teknik Industrial Furnaces Ltd. has begun specializing in the design and production of heat treatment technology for light metals and composite materials. Sistem Teknik R&D Centre has become a partner of the Horizon platform in 2020 to strengthen its focus on making the aluminium industry eco-friendlier. As of today, the Sistem Teknik team of 250 engineers, technicians, and experts has commissioned more than 1,500 cast houses and heat treatment plants in 36 countries around the world in accordance with ISO 9001 quality standards.



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Litron Lasers is a manufacturer of high energy solid-state pulsed and CW Nd:YAG and Nd:YLF lasers with nanosecond pulse widths. All lasers are designed and manufactured in Rugby, England. Litron was formed in 1997 and developed a technology base for manufacturing high energy nanosecond solid state lasers. With many thousands of lasers installed worldwide, the design and manufacturing integrity of our products is truly field proven. Litron's philosophy is to keep all design and a significant proportion of manufacturing in-house. As a result all electronics, mechanics, software and all optics for the lasers are designed at Litron.



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Avantes BV

www.avantes.com

Avantes is a leading manufacturer of fiber-optic spectroscopy instruments and systems. We operate in various industries; from (bio)medical and agriculture to semiconductor and consumer electronics. Our instruments are found in world-class research laboratories, embedded in devices, or play a crucial part in quality control during production. Our compact spectrometer systems are designed to enable research and industrial measurements and analysis involving the metrology of light. Our instruments facilitate ultra-violet, visible and near-infrared measurements (200-2500 nm).



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For applications as diverse as biomedical imaging, geochemical mineralogy or industrial quality control, Elemental Scientific Lasers has the analytical tools needed for higher resolution, faster analyses and greater automation. ESL has been at the forefront of laser ablation sampling for atomic spectroscopy since the very beginnings. ESL laser ablation products are designed and developed with an emphasis on superior performance and benchmark analytical results, application flexibility, operating convenience, and reliability. Our ESLumen LIBS system compliments LA-ICP-MS and expands the elemental coverage, providing the ability to detect elements such as H, N, O, and F which are not possible by ICPMS.



Andor

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andor.oxinst.com

Andor are global leaders in the development and manufacture of high performance scientific digital cameras, microscopy systems and spectrographs for academic, industrial and government applications. Our core purpose is to empower our customers to address some of the world's most pressing challenges, enabling a greener economy, increased connectivity, improved health and leaps in scientific understanding. It matters to us that the products we develop make a real difference to our customers and contribute significantly to their research. We want to deliver differentiated, accessible solutions to the widest possible scientific research and industrial communities.



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InnoLas Laser GmbH was founded in 1995 to manufacture high quality laser sources for scientific and industrial applications. It is one of very few laser manufacturers worldwide with the ability to develop in-house the specialized laser technology applicable to pulsed YAG lasers. The lasers Innolas develops are either diode or flash lamp pumped, with repetition rates from 1Hz up to 1kHz and pulse energies from a few Microjoules to several Joules. Besides YAG lasers, InnoLas has developed other new cutting-edge laser products which have become benchmarks for performance in the market. These state-of-the-art products were made possible because of constant development within the company by well-educated personnel and help from public funding.



Atomtrace

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www.atomtrace.com

AtomTrace is a Czech vendor of products for chemical and quality analysis of materials using LIBS technology. Our goal is to design and deliver solutions based on LIBS technology for a wide range of industries and make the technology more user-friendly and affordable. Our portfolio includes Sci-Trace - modular LIBS solution for laboratories including unique vacuum interaction chamber; M-Trace - mobile LIBS system for industrial applications and tiny LABs; AtomAnalyzer - LIBS SW for spectra processing including our LIBS elemental database; Vacuum Capsule - a compact capsule designed for LIBS experiments in vacuum or inert gas atmosphere; AtomTrace Digital Delay Generator - pulse generator for prices time synchronization (with 10 ns resolution).



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PORTO, THE CITY

Porto is one of Europe's oldest tourist destinations. Its wealth of artistic heritage, Port Wine, open-air leisure spaces and cultural life are just some of the reasons to visit this city.

Porto's Historical Centre was designated World Cultural Heritage in 1996 and its natural setting and its meandering streets give it a unique charm.



VENUE

OCC - Porto

occporto.occ.pt

EMS Libs 2023 will take place at the Order of Certified Accountants (Ordem dos Contabilistas ertificados - OCC) in Porto.

The OCC is a professional public association whose primary mission is to regulate and discipline the exercise of the accounting profession, in addition to developing all actions leading to greater credibility and dignity of the profession.

All sessions of the conference will take place in the main auditorium.

OCC - Ordem dos Contabilistas Certificados
Largo 1º de dezembro, 62
4000-404 Porto



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Internet Access

Wireless internet access is available freely across the whole building.

Log in to **OCCGUEST** wi-fi network and follow the instructions for internet access.



EVENT'S APP

More details and information can be accessed through our web-based app at:

<https://emslibs2023.glideapp.io/>

or here:



Exclusive access and functionalities are available for registered users, using the email provided during the registration.

Note: The app is web-based, meaning that it works as a regular webpage. No information is stored in your device and most information is only available when your device is connected to the internet. To avoid using your mobile data plan, we advise to use the app only when connected to a Wi-Fi network.



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