EMSLIBS PARIS

EMSLIBS

EVENT BOOKLET

13TH EURO-MEDITERRANEAN SYMPOSIUM

LASER-INDUCED BREAKDOWN SPECTROSCOPY

MINISTÈRE DE LA CULTURE

CENTRE DE RECHERCHE ET DE RESTAURATION DES MUSÉES DE FRANCE

Fondation des Sciences du Patrimoine

CETIM

LIBS FRANCE

EMSLIBS PARIS

EMSLIBS

TABLE OF CONTENTS

	26 January 2026 Monday	27 January 2026 Tuesday	28 January 2026 Wednesday	29 January 2026 Thursday	30 January 2026 Friday
8:00-9:00	Registration				
9:00-9:15		Keynote 2 -Dimitrios Anglos	Keynote 3 - Roberta Fantoni	Keynote 4 - Mohamad Sabsabi	
9:15-9:30					
9:30-9:45					Invited 10 - Pavel Pořízka Multimodal & Instrumentation
9:45-10:00		Oral 13 - Diana Guimaraes	Invited 5 - Arnaud Bultel Fundamental	Invited 9 - Christoph Gerhard Fundamental	
10:00-10:15	Welcome	Oral 14 - Nicolas Herreyre			Oral 43 - Maxime Legallais
10:15-10:30		Sponsor 1 - LTB	Oral 25 - Ivan Urbina	Ora l 42 - Anandhu Mohan	Oral 44 - Gyula Kajner
10:30-10:45		Oral 15 - Xueshi Bai	Sponsor 3 - OPTON LASER	Sponsor 5 - Photonics Industries	Oral 45 - Laura García-Gómez
10:45-11:00	Keynote 1 - Reinard Noll	Oral 16 -Olivier Musset	Oral 26 - Veis Pavel	Tribute Vincent	Coffee Break
11:00-11:15		Coffee Break	Coffee Break		
11:15-11:30				Lunch	Invited 11 - Cristina Méndez-López Instrumentation
11:30-11:45	Oral 1 - Jens Riedel	Invited 3 - Marcella dell'Aglio Biology	Invited 6 - Cécile Fabre Environement/Geology		
11:45-12:00	Oral 2 - Derrick Quarles				Oral 46 - David Douglas
12:00-12:15	Oral 3 - Alexandre Cherrier	Oral 17 - Zeinab Abboud	Oral 27 - Jorge Caceres		Oral 47 - Aïssa Harhira
12:15-12:30	Oral 4 - Michael Gaft	Sponsor 2 - ABLATOM	Oral 28 - Pedro Jorge		Oral 48 - Marcos López Ochoa
12:30-12:45		Oral 18 - Edith Böhmer	Oral 29 - Ruixue Wang	Bus	Oral 49 - Mehdi Maghsoudi Sarteshnizi
12:45-13:00	Lunch	Oral 19 -Erwan Dupont	Oral 30 - Ben Van Der Hoek	City tours in PARIS	Lunch
13:00-13:15			Oral 31 - Nilvan Silva		
13:15-13:30		Lunch	Lunch		
13:30-13:45					
13:45-14:00	Data challenge				
14:00-14:15					Cloture
14:15-14:30	Invited 1 - Vincent Motto-Ros Instrumentation				
14:30-14:45		Invited 4 - Tian Ye Extreme	Invited 7 - Ludovic Duponchel Processing / Industry		
14:45-15:00	Oral 5 - Yannick Conin				
15:00-15:15	Oral 6 - Clara Burgos Palop	Oral 20 - Agnès Cousin	Oral 32 - Yuanzhi Cai		Bus
15:15-15:30	Oral 7 - Alessandro De Giacomo	Oral 21 - Florian Mourlin	Oral 33 - Kristin Rammelkamp		
15:30-15:45	Coffee Break	Oral 22 - Olivier Forni	Sponsor 4 - AVANTES		
15:45-16:00		Oral 23 - Arthur Gublin	Oral 34 - Lukas Retterath		
16:00-16:15	Invited 2 - Alfred Vogel Insdustry	Oral 24 - Léo Gosse	Oral 35 - Kristjan Leosson		
16:15-16:30		Poster session	Oral 36 - Lina Jolivet		
16:30-16:45	Oral 8- Daniel L'hermite		Coffee Break		
16:45-17:00	Oral 9- Jordan Fernandes				
17:00-17:15	Oral 10 - Chris Prüfert		Invited 8 - Janhis Gonzalez Instrumentation		
17:15-17:30	Oral 11 - Johannes Pedarnig				
17:30-17:45	Oral 12 - Frédéric Pelascini		Oral 37 - Erik Wüst		
17:45-18:00	Bus		Oral 38 - Rongxing Yi		
18:00-18:15			Oral 39 - Dávid Jenő Palásti		
18:15-18:30			Oral 40 - César Alvarez		
18:30-18:45			Oral 41 -Simon Blume		
18:45-19:00		Bus	Bus		
19:00 -20:30	Social event				
20:30-23:00				Gala dinner	

WELCOME

Dear Colleagues,

Welcome to the 13th EMSLIBS meeting!

We are delighted to welcome you to Paris to attend the 13th edition of the European Conference on Laser-Induced Breakdown Spectroscopy (EMSLIBS), taking place from the 26th to the 30th of January 2026.

Following the tradition of previous successful editions, we have designed a program that combines high-quality science with the opportunity to network in one of the world's most beautiful cities. This year's conference features a diverse scientific program with keynote presentations by leading experts, innovative contributions from both industry and fundamental science, and a special focus on multimodal applications and heritage science.

We would like to thank our sponsors for their support, which is essential to the success of this event. We hope you enjoy the scientific exchanges and the social events we have planned for you in the City of Light.

Sincerely,

Conference Chair

On behalf of the Organising Committee

FULL PROGRAM

DAY 1

MONDAY | 26TH JANUARY

08:00 | REGISTRATION

10:00 | Welcome

Fabien Lefebvre, Scientific Advisor, Research and Programs Department, CETIM

Isabelle Pallot-Frossad, President, Foundation for Heritage Science

Victor Etgens, head of the Research department, C2RMF (Cultural Ministry of France)

10:45 | SESSION 1: INDUSTRY 1 *CHAIRS: JEAN-BAPTISTE SIRVEN / CLARA BURGOS PALOP*

- **KEYNOTE 1: Reinard Noll** *Implementation of LIBS in industry – challenges, obstacles, and success stories*
- **11:30 | Oral 1 - Jens Riedel** *Introducing a Unified Formal Ontology for LIBS*
- **11:45 | Oral 2 - Derrick Quarles** *High-Speed Elemental Imaging via Kilohertz LIBS Imaging*
- **12:00 | Oral 3 - Alexandre Cherrier** *LIBS signal enhancement of analytes in liquids using microstructured substrates*
- **12:15 | Oral 4 - Michael Gaft** *LIBS and LIBS-MLIF for Isotopic Analysis of Mg, Ge, and Sn*

12:30 | *LUNCH*

13:45 | **Ludovic Duponchel : Data Challenge**

14:15 | SESSION 2: INSTRUMENTATION 1 *CHAIRS: OLIVIER MUSSET / LAURA GARCÍA-GÓMEZ*

- **14:15 | INVITED 1: Vincent Motto-Ros** *Element-specific challenges as a driving force for μ-LIBS imaging*
- **14:45 | Oral 5 - Yannick Conin** *Real-time Predictive LIBS Target Selection for Heterogeneous Materials via HSI-3D Sensor Fusion*
- **15:00 | Oral 6 - Clara Burgos Palop** *Laser Ablation Microsampling Enables Chemical Characterization of Meteorites by Single-Particle LIBS*
- **15:15 | Oral 7 - Alessandro De Giacomo** *Laser-Induced Breakdown Spectroscopy for In-Flight Elemental Analysis of Volcan Ash*

15:30 | COFFEE BREAK

16:00 | SESSION 3: INDUSTRY 2 *CHAIRS: PEDRO JORGE / LUISA LEMERLE*

- **16:00 | INVITED 2: Alfred Vogel** *Interplay between luminescence and thermomechanical events relevant for LIBS in air and water*
- **16:30 | Oral 8 - Daniel L'hermite** *LIBS development for stratigraphic oxygen analysis on metals*
- **16:45 | Oral 9 - Jordan Fernandes** *Revealing Microstructural Secrets of Alloys with High-Resolution LIBS Imaging*
- **17:00 | Oral 10 - Chris Prüfert** *LIBS in Ore Flotation, a Multi-Phase Case Study*
- **17:15 | Oral 11 - Johannes Pedarnig** *Surface cleaning monitored by LIBS and Optical emission spectroscopy*
- **17:30 | Oral 12 - Frédéric Pelascini** *LIBS activities at CETIM: from the laboratory to industry*

18:00 | VISIT / SOCIAL EVENT

DAY 2

TUESDAY | 27TH JANUARY

09:00 | SESSION 4: CULTURAL HERITAGE *CHAIRS: CRISTINA MÉNDEZ-LÓPEZ / ARTHUR GUBLIN*

- **09:00** | **KEYNOTE 2: Dimitrios Anglos** *LIBS on demand. Addressing niche and broader challenges in Heritage Science*
- **09:45** | **Oral 13 - Diana Guimaraes** *Augmented Spectral Reality for Cultural Heritage Interpretation*
- **10:00** | **Oral 14 - Nicolas Herreyre** *μ-LIBS imaging for archaeological ceramic characterization*
- **10:15** | **Sponsor 1: LTB (Steffen Mittelmann)** *Overview of LIBS applications and projects governed by LTB*
- **10:30** | **Oral 15 - Xueshi Bai** *LIBS technique for the conservation of aluminum aircrafts*
- **10:45** | **Oral 16 - Olivier Musset** *Fusion of LIBS Imaging and C&O Isotopic Optical Spectroscopy in Carbonates*

11:00 | COFFEE BREAK

11:30 | SESSION 5: BIOLOGY, HEALTH AND AGRONOMY *CHAIRS: JORGE CACERES / ORSOLYA URBÁN*

- **11:30** | **INVITED 3: Marcella dell'Aglio** *Laser-induced plasma and biosensing: coupling LIBS with Lateral Flow Immunoassay*
- **12:00** | **Oral 17 - Zeinab Abboud** *Methodology for using portable LIBS in the field of occupational health*
- **12:15** | **Sponsor 2: ABLATOM (Florian Trichard)** *From laboratory to industrial processes, advanced elemental analysis*
- **12:30** | **Oral 18 - Edith Böhmer** *CF-LIBS: Screening of Human Lifestyle Using Fingernails*
- **12:45** | **Oral 19 – Erwan Dupont** *Development of matrix-matched standards for LIBS Imaging*

13 :00 | LUNCH

14:30 | SESSION 9: PROCESSING AND CHEMOMETRICS *CHAIRS: BRUNO BOUSQUET/MEHDI MAGHSOUDI SARTESHNIZI*

- **14:30** | **INVITED 4: Tian Ye** *Underwater LIBS towards deep-sea applications*
- **15:00** | **Oral 20 - Agnès Cousin** *Overview of the Mars2020 mission and main results from SuperCam*
- **15:15** | **Oral 21 - Florian Mourlin** *LIBS in airless environments: from the lab to the Moon and beyond*
- **15:30** | **Oral 22 - Olivier Forni** *Elemental sulphur deposit and its related enrichments as viewed by Chemcam*
- **15:45** | **Oral 23 - Arthur Gublin** *Investigation of Uranium Emission Lines for Isotopic Analysis*
- **16:00** | **Oral 24 – Léo Gosse** *LIBS for fusion: tungsten and boron spectral characterization*

16:15 | POSTER SESSION

DAY 3

WEDNESDAY | 28TH JANUARY

09:00 | SESSION 7: FUNDAMENTAL 1 *CHAIRS: ALESSANDRO DE GIACOMO / MARCOS LÓPEZ*

- **09:00** | **KEYNOTE 3: Roberta Fantoni** *LIBS applications in local and remote characterization of cultural heritage materials*
- **09:45** | **INVITED 5: Arnaud Bultel** *How the modelling can contribute to a better understanding of the underlying physics of LIBS*
- **10:15** | **Oral 25 - Ivan Urbina** *Laser induced plasma evolution process recorded by shadowgraph in levitated droplets*
- **10:30** | **Sponsor 3: OPTON LASER (Alex Delhomme)** *High energy diode-pumped lasers for LIBS*
- **10:45** | **Oral 26 - Veis Pavel** *Impact of Spectral Averaging on Precision and Depth Resolution in CF LIBS for JET Divertor Tiles*

11:00 | COFFEE BREAK

11:30 | SESSION 8: ENVIRONMENTAL AND GEOLOGICAL SCIENCES *CHAIRS: ALFRED VOGEL / ALEXANDRE CHERRIER*

- **11:30** | **INVITED 6: Cécile Fabre** *From Handheld LIBS Analysis to µLIBS High-Resolution Imaging*
- **12:00** | **Oral 27 - Jorge Caceres** *Hybrid Pollution in the Air – Polymeric and Metallic Signatures of Microplastics*
- **12:15** | **Oral 28 - Pedro Jorge** *Automated Detection of Contaminated Wood Waste Using Computer Vision and LIBS*
- **12:30** | **Oral 29 - Ruixue Wang** *Rapid and Scalable LIBS–ML Workflow for Quantitative Mineral Mapping*
- **12:45** | **Oral 30 - Ben Van Der Hoek** *Downhole LIBS sensor: in-situ analysis of mining drill holes*
- **13:00** | **Oral 31 - Nilvan Silva** *Nanostructured substrate produced by CO2 laser photothermal treatment*

13:15 | LUNCH

14:30 | PROCESSING / INDUSTRY (CONT.) *CHARIS: TIAN YE/EDITH BÖHMER*

- **14:30** | **INVITED 7: Ludovic Duponchel** *Exploring LIBS imaging at scale: how chemometrics changes what we can see*
- **15:00** | **Oral 32 - Yuanzhi Cai** *Spatially Aware Refinement of LIBS Mineral Maps with Conditional Random Fields*
- **15:15** | **Oral 33 - Kristin Rammelkamp** *Investigating Depth Trends in ChemCam LIBS Data with Tensor Component Analysis*
- **15:30** | **Sponsor 4: AVANTES (Martijn van de Goor)** *New Possibilities in LIBS Enabled by Avantes Spectrometer Technology*
- **15:45** | **Oral 34 - Lukas Retterath** *Rapid Hardness Characterization of Steel via Femtosecond Laser-Induced Plasma Spectroscopy*
- **16:00** | **Oral 35 - Kristjan Leosson** *Application of molten-metal LIBS in the aluminum industry*
- **16:15** | **Oral 36 - Lina Jolivet** *Feasibility of Hydrogen Quantification in Metals by Laser-Induced Breakdown Spectroscopy*

16:30 | COFFEE BREAK

17:00 | SESSION 10: INSTRUMENTATION 2 *CHAIRS: MARCELLA DELL'AGLIO / NICOLAS HERREYRE*

- **17:00** | **INVITED 8: Jhanis Gonzalez** *Innovative Advances in LIBS: Enhancing Sensitivity, Precision, and Applications*
- **17:30** | **Oral 37 - Erik Wüst** *Depth-resolved picosecond LIBS of deuterium retention in self-damaged tungsten*
- **17:45** | **Oral 38 - Rongxing Yi** *In-situ Residual Hydrogen Isotope Analysis*
- **18:00** | **Oral 39 - Dávid Jenő Palásti** *Utilizing modern fiber lasers for LIBS*
- **18:15** | **Oral 40 - César Alvarez** *Multimodal hyperspectral imaging for interpretation of optically active centers*
- **18:30** | **Oral 41 - Simon Blume** *Femtosecond vs. Nanosecond Laser-Induced XUV Spectroscopy (LIXS)*

DAY 4

THURSDAY | 29TH JANUARY

09:00 | SESSION 11: FUNDAMENTAL *CHAIRS: JÖRG HERMANN / LUKAS RETTERATH*

- **09:00** | **KEYNOTE 4: Mohamad Sabsabi** *Expanding Horizons of LIBS for On-Line and In-Situ Analysis*
- **09:30** | **INVITED 9: Christoph Gerhard** *Modelling contributions to understanding physics of LIBS*
- **10:15** | **Sponsor 5: Photonics Industries (Hans Taylor)** *New Options for DPSS LIBS Laser Sources*

10:45 | TRIBUTE VINCENT DETALLE : ALEXANDRE SEMEROK

11:15 | *LUNCH*

12:30 | BUS TO PARIS

14:30 | CITY TOUR / FREE TIME

20:30 | GALA DINNER

DAY 5

FRIDAY | 30TH JANUARY

09:30 | SESSION 12: MULTIMODAL & INSTRUMENTATION *CHAIRS: CHRISTOPH GERHARD / FLORIAN MOURLIN*

- **09:30** | **INVITED 10: Pavel Pořízka** *Beyond LIBS, merging modalities to gain more comprehensive information*
- **10:00** | **Oral 43 - Maxime Legallais** *Ultimate detection of lithium by LIBS in LiF atomic layers*
- **10:15** | **Oral 44 - Gyula Kajner** *Nanoporous glass: A versatile substrate for calibration and liquid sample analysis*
- **10:30** | **Oral 45 - Laura García-Gómez** *Improved Detection Capabilities of Molecular Emission in Microwave-Assisted Laser-Induced Plasma*

10:45 | COFFEE BREAK

11:15 | SESSION 13: INSTRUMENTATION 3 *CHAIRS: CÉCILE FABRE / GEORGE COOK*

- **11:15** | **INVITED 11: Cristina Méndez-López** *Determination of total fluorine in organic liquid matrices: on the road to gasoline screenings*
- **11:45** | **Oral 46 - David Douglas** *Integrating LIBS and LA-ICP-MS for High-Resolution Fluorine Mapping*
- **12:00** | **Oral 47 - Aïssa Harhira** *Innovative Real-time LIBS Applications for Efficient Midstream Mineral Processing*
- **12:15** | **Oral 48 - Marcos López Ochoa** *LIBS imaging for the identification of microplastics in the environment*
- **12:30** | **Oral 49 - Mehdi Maghsoudi Sarteshnizi** *Quantification and Oxidation Tracking of Lithium in Liquid Aluminum Alloys*

12:45 | *LUNCH*

14:00 | CLOSING CEREMONY

POSTERS

P1 Alexandre Semerok *Analytical Model of Crater Formation at Laser Ablation*

P2 Sanath Shetty *Composition and depth analysis of transition metal boride using vacuum UV LIBS*

P3 Alexandre Cherrier *Effect of the electron density and plasma temperature on the plasma emissivity: a pathway to LIBS signal enhancement*

P4 Yiqin Wang *Efficiency evaluation of fuel retention diagnostic in first wall by LID-QMS: Based on LIBS*

P5 Christoph Egerland *Fitting LIBS plasma using gradient descent*

P6 Paul Andrieu *Influence of experimental conditions on LIBS measurement sensitivity*

P7 Anandhu Mohan *Isotopic Fractionation in Laser Induced Plasma (LIP) Plumes*

P8 Jean-Baptiste Sirven *Quantification of matrix effects observed in LIBS analysis of metal alloys*

P9 Pavel Veis *Elemental analysis of liquids using LIBS acoustic levitation in different stages of CW laser drying*

P10 Nan Zhao *Wavelength Drift Correction Method for Laser-Induced Breakdown Spectroscopy Based on Phase Correlation*

P11 Sid Ahmed Beldjilali *Calibration-free LIBS analysis of Diatomite for High Purity Silicon Extraction*

P12 Olivier Musset *Can LIBS explain the color of a sample?*

P13 Luisa Lemerle *Multielemental quantification by CF-LIBS assisted by a deep learning model trained on simulated spectra*

P14 Anton Radomtseu *Multiparametric processing of LIBS spectra of low-alloy steels*

P15 Clara Burgos Palop *Unveiling mineral phase distribution in the Chelyabinsk LL chondrite using LIBS mapping and cluster analysis*

P16 Olivier Musset *Use of Rank Transformation to Correct Flatness Defects in High-Resolution LIBS Imaging*

P17 Olivier Musset *A Python application for processing LIBS spectra*

P18 Marketa Stranikova *Advancements in Polymer Type Determination in the Plastic Industry using Sci-Trace/M-Trace LIBS Technology*

P19 Yuge Liu *Cross-Instrument Data Utilization Based on Laser-Induced Breakdown Spectroscopy (LIBS) for The Identification of Akebia Species*

P20 Claudio Sandoval-Muñoz *Determination of sulfides by HSI coupled with μ-LIBS and their use as a pathfinder to gold mineralization*

P21 Rania Guendouz *Effect of Particle Size on LIBS Emission and Structural Characteristics of Iron-Based Soils*

P22 Jordan Fernandes *Accurate Laser Spot Characterization for Enhanced Micro-LIBS Imaging via Knife-Edge Profiling*

P23 Samy Guellour *High-Resolution Laser-Induced Breakdown Spectroscopy for Micron-Scale Geomaterial*

P24 Luisa M. Cabalin *High-Resolution Laser-Induced Breakdown Spectroscopy (HR-LIBS) Applied to the Analysis of Isotopically Labelled Organic Molecules*

P25 Jiaming Li *Laser-induced breakdown spectroscopy based on fiber laser ablation (FL-LIBS) with high repetition rate and low pulse energy*

P26 Jose Miguel Vadillo *Laser-Induced Plasma Acoustics and Laser-Induced Breakdown Spectroscopy: A Happy Marriage*

P27 Kristjan Leosson *LIBS Analysis of Amorphous LLZO Films*

P28 Clothilde Comby-Zerbino *Multimodal Analysis of MALDI-MS and LIBS: Comparative Study of UV-355nm and IR-1064 nm Desorption*

P29 Elise Clavé *Plasma-atmosphere interactions in Martian LIBS and implications for carbonate characterization*

P30 Jose Miguel Vadillo *Sampling approaches based on spot aerosol generation, Catapulting and Trapping combined to LIBS*

P31 Nils Oberndorfer *Spatially Resolved LIBS Analysis of Nanoparticle Clouds Formed during Single Particle Iron Combustion*

P32 Patricia Lucena *Stand-off Spectroscopies Under Controlled Atmospheric and Temperature Planetary Conditions Using a Multipurpose Thermal Vacuum Chamber*

P33 Pravin Kumar Tiwari *Unveiling LIBS Analysis Insights: Exploring Plasma Confinement Induced by Variable Electric Fields in Both Ambient and Vacuum Environmental Conditions*

P34 Florian Mourlin *Perseverance/SuperCam LIBS technique: how to decide if a spectrum is of good quality?*

P35 Elena Santamarina *LIBS-Based Classification of End-of-Life Membrane Electrode Assemblies for Automated Sorting*

P36 Amy Bauer *Molecular Features in LIBS of Refractory Materials*

P37 Ivo M. Raimundo Jr. *Indirect determination of scaling anions in synthetic saline waters based on barium salt precipitation*

P38 Johannes Pedarnig *LIBS of aqueous solutions: Quantification of ZnSO4 transferred to paper matrix*

P39 Thuy Dung Nguyen *Laser-Induced Breakdown Spectroscopy for Elemental Mapping and Tumor Detection in Oral-Jaw Tissue*

P40 Anannya Banerjee *Modeling of Laser-Induced Heat Conduction Dynamics in Aluminum under Nanosecond Pulse Excitation*

P41 Alena Zavadilová *Application of Eye-Safe LIBS for Uranium Identification and Spatial Distribution Studies in Geological and Engineering Materials*

P42 Javier Urraca *Application of Laser-Induced Breakdown Spectroscopy (LIBS) for Rapid Detection and Determination of Mycotoxins in Food Matrices*

P43 Alena Zavadilová *Assessing Metal Contamination in Horticultural Substrates: A Dual-Pulse LIBS Approach*

P44 George Cook *Development of a miniaturised Laser induced Breakdown Spectroscopy apparatus for in-situ analysis of effluents for Nuclear Decommissioning*

P45 Jakob Von Grünberg *Laser-Based Phytomining: Real-Time Monitoring of Trace-Element Enrichment in Sweet Lupines Using LIBS*

P46 Susilo Hadi *Deuterium limit of detection estimation in 316L by picosecond LIBS and MERLIN calculation*

P47 Orsolya Urbán *Hydrogen isotope analysis in polymers by ns LIBS, fs LA-MS and μ-Raman spectroscopy*

P48 Laura García-Gómez *2D Mapping of Peridotite Analogs as Target Minerals for Martian Missions using Planetary Exploration Technologies*

P49 Luisa Cabalin *Detection of Amorphous Carbon Enclosed in Hydrothermal Gypsum Deposits by Combined LIBS and Raman Spectroscopy: Implications for Biosignature Detection in Planetary Exploration*

P50 Alejandro Ramírez *Effect of Laser Spot Size and Granulometry on LIBS Plasma Parameters in Geological Samples*

P51 Faringuisse Ehrari *Fluorine Quantification in PFAS Compounds Using a Dual Experimental and Numerical LIBS Approach*

P52 Jorge Caceres *Laser-Induced Breakdown Spectroscopy as a Cutting-Edge Tool for Identifying Plastic Composition and Verifying its Sustainable Use in the Design Field*

P53 Patricia Lucena *LIBS Implications in Planetary Exploration: The Search for Organic Biosignatures*

P54 Peter Kohns *LIBS-Detection of Harmful Metals in Plant Material*

P55 Felix Albertin *Process analysis in lithium extraction by LIBS*

P56 Camilo Prieto *Tracer-assisted polymer identification using Laser Induced Breakdown Spectroscopy*

P57 Capela Diana *Multi-Instrument LIBS Harmonization for Rare-Earth Element Imaging*

P58 Monica Dinu *Spectroscopic Pathways to Provenance: Insights into Metal Craftsmanship and Trade in Ancient Eastern Europe*

P59 Carl Basler *LIBS for quantitative Li monitoring in fluids for Li extraction and recycling*

P60 Carl Basler *Sensor for USP-Laser ablation control based on real-time plasma decay for up to 1 MHz repetition rate*

SOCIAL PROGRAM

MONDAY | 26TH JANUARY

WELCOME

LE CHÂTEAU DE PONTARMÉ
ANNO 1524

Located on the edge of the Chantilly forest, the Château de Pontarmé embodies the timeless elegance of medieval and Renaissance architecture.

Built in the 13th century by the powerful Bouteiller family of Senlis, it initially served as a fortress to guard the crossing of the Thève, a marsh that was difficult to cross at the time. Over the centuries, the castle has had several illustrious owners, including Constable Anne de Montmorency, who acquired it in 1545. Transformed into a hunting lodge, the estate was then used as a farm before regaining its residential status at the beginning of the 20th century thanks to restorations that respected its heritage.

Today, the Château de Pontarmé stands out for its medieval fortified gate, moat, and Renaissance residence. Listed as a historic monument since 1986, it offers an authentic and refined setting for

EMSLIBS PARIS EMSLIBS

receptions, seminars, and private stays. The modular lounges, bathed in natural light, and the themed rooms inspired by literary and historical figures, immerse guests in an atmosphere that is both intimate and evocative. The château thus combines the charm of yesteryear with contemporary comfort, for a unique experience where every detail tells a story.

SOCIAL PROGRAM

TUESDAY | 27TH JANUARY

Poster Session & Networking

Join us for an engaging Poster Session held directly at the conference venue. This is a privileged moment to discover the latest research and exchange ideas with the authors in a relaxed atmosphere.

We invite you to share a **friendly drink and appetizers** while browsing the posters. The session will conclude at **19:30**.

SOCIAL PROGRAM

THURSDAY | 29TH JANUARY

VISITS

ORSAY MUSEUM: 3 GROUPS (25 PERSONS)

Orsay Museum is one of the most important museums in Paris and a major cultural landmark.

It is located in a former railway station built at the end of the 19th century, which gives the museum its unique architectural style.

The Musée d'Orsay is especially famous for its rich collection of Impressionist and Post-Impressionist artworks.

Visitors can admire masterpieces by artists such as Claude Monet, Vincent van Gogh, Edgar Degas, and Pierre-Auguste Renoir.

Through its paintings, sculptures, and decorative arts, the museum offers a fascinating insight into artistic life in Europe between 1848 and 1914.

OR

THE PETIT PALAIS (SMALL PALACE) IS AN ART MUSEUM IN THE 8TH ARRONDISSEMENT OF PARIS, FRANCE.: 2 GROUPS (30 PERSONS)

Built for the 1900 Exposition Universelle ("universal exhibition"), it now houses the City of Paris Museum of Fine Arts (Musée des beaux-arts de la ville de Paris). The Petit Palais is located across from the Grand Palais on the former Avenue Nicolas II, today Avenue Winston-Churchill.The other façades of the building face the Seine and Avenue des Champs-Élysées.

The Petit Palais is one of fourteen museums of the City of Paris that have been incorporated since 1 January 2013 in the public corporation Paris Musées. It has been listed since 1975 as a monument historique by the Ministry of Culture.

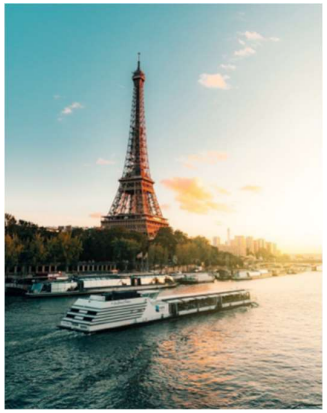
Following our visit, the rest of the afternoon is yours to enjoy at your own pace. You are currently standing in one of the most culturally rich districts of the capital. We highly recommend a scenic stroll along the banks of the Seine; it is a beautiful walk that will lead you from the Louvre directly to the historic **Île de la Cité** and the majestic **Notre Dame Cathedral**.

Feel free to wander and immerse yourself in the Parisian atmosphere. Why not pause for a *café crème* or a glass of wine at one of our celebrated brasseries? It is the perfect way to watch the city go by and experience the true "art de vivre."

SOCIAL PROGRAM

GALA DINER / THURSDAY | 29TH JANUARY

DINNER ON THE BOATS OFFERS A REAL SPECTACLE WITH VIEWS OF THE CITY'S MONUMENTS AND LIGHTS.



Join us for a memorable evening on the Seine.

Location & Boarding: Promenade Édouard Glissant (Located at the foot of the Musée d'Orsay) 75007 Paris

Schedule: 2nd Service: Boarding at 20:45 (Duration: 2h)

The Eiffel Tower, Pont Alexandre III, Louvre, Musée d'Orsay

A tour on the water of the most beautiful historic monuments in Paris that line the Seine and are adorned with their most beautiful lights when night falls.

Kindly note that as space on the boat is limited, only attendees who reserved their spot during registration can be accommodated.

COMMITTEES

Xueshi Bai, C2RMF

Conference Chair

Pelascini Frédéric, CETIM

Co-Chair

LIBS France

Co-Chair

LOCAL ORGANIZING COMMITTEE

XUESHI BAI

EMMANUEL POIRAULT

LÉA ORLANDI

VINCENT MOTTO-ROS

FRÉDÉRIC PELASCINI

HUGO PLUMEL

VANESSA FOURNIER

MARIE-ASTRID LEROY

LOCAL SCIENTIFIC COMMITTEE / LIBS FRANCE

XUESHI BAI, C2RMF, PARIS

BRUNO BOUSQUET, ICMCB, UNIV. BORDEAUX

ARNAUD BULTEL, CORIA, UNIV. ROUEN

LUDOVIC DUPONCHEL, LASIRE, LILLE

CECILE FABRE, GEORESSOURCES, UNIV. LORRAINE

JÖRG HERMANN, LP3, UNIV. MARSEILLE

VINCENT MOTTO-ROS, ILM, UNIV. LYON

OLIVIER MUSSET, ICB, UNIV. BOURGOGNE

FRÉDÉRIC PELASCINI, CETIM, STRASBOURG

JEAN-BAPTISTE SIRVEN, CEA, PARIS

INTERNATIONAL SCIENTIFIC COMMITTEE

DEMETRIOS ANGLOS GREECE

ROBERTA FANTONI ITALY

YOSHIHIRO DEGUCHI JAPAN

ALESSANDRO DE GIACOMO ITALY

RUSSELL HARMON USA

MOHAMED ABDEL HARITH EGYPT

YU JIN CHINA

ANDRZEJ W. MIZIOLEK USA

REINHARD NOLL GERMANY

JOZEF KAISER CZECH REPUBLIC

VINCENT MOTTO-ROS FRANCE

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 YALÇIN TURKEY

JAVIER LASERNA SPAIN

KEYNOTE

Demetrios Anglos is a Professor at the Department of Chemistry, University of Crete (UoC) and Associated Researcher at the Institute of Electronic Structure and Laser, Foundation for Research and Technology-Hellas (IESL-FORTH), where he leads the Applied Spectroscopy Laboratory (since 2001). He holds a B.Sc. in Chemistry (1986) from the University of Athens, Greece and a Ph.D. in Physical Chemistry (1994) from Cornell University, U.S.A. The activities of his research group focus on a) the study of photophysics in molecules and novel nanomaterials with potential sensing applications, and b) the applications of laser spectroscopic techniques (LIF, LIBS, Raman spectroscopy) in the analysis of materials, with particular emphasis on the development of mobile, field-deployable instrumentation for the study of archaeological objects and works of art, supporting analytical campaigns in museums and archaeological sites.

Prof. Dr. Reinhard Noll studied physics at the Technical University of Darmstadt, where he completed his doctorate in 1984. He co-founded the Fraunhofer Institute for Laser Technology (ILT) in Aachen in 1985. There he headed the department of laser measurement technology and was later head of the division for measurement technology and EUV radiation sources as well as member of the institute's management. He is a co-founder of ILT spin-off companies.

In 2012, he habilitated at RWTH Aachen University in the field of LIBS and received the venia legendi for “Laser Metrology for Inline Process Diagnostics.” Since 2022, he has been head of the R&D department at Laser Analytical Systems & Automation GmbH in Aachen. With 196 scientific publications, 5 books, and 40 patents, he has made a significant contribution to the development of laser measurement methods and their industrial application.

Dr. Roberta Fantoni She holds a degree in Chemistry from Rome University La Sapienza. She spent all her career at ENEA, research center Frascati, where she covered the roles of head of the Laboratory Laser Applications, head of the Technical Unit Applications of Radiations, head of the Division Physical Technologies for Security and Heath Division. She retired July 1, 2022. She has been involved in multidisciplinary research activities focused on laser-matter interaction and projects implying knowledge relevant to both chemistry and physics such as laser spectroscopy: LIF, LIBS, Raman, material processing and nanotechnology, industrial and environmental laser diagnostics, including local and remote characterization of Cultural Heritage. ENEA member in E-RIHS.it and in the Centre of Excellence of the District of Technologies for Culture of Latium Region until December 2022, leading projects addressed to technology transfer from research institutes to conservators and restores. Author of 188 papers on international journals and 31 book chapters.

Mohamad Sabsabi earned his Ph.D. in Physics from the Université de Paris XI in 1988. Following his postdoctoral research on thermal plasmas, he joined the National Research Council of Canada (NRC) in 1992, where he pioneered activities in laser plasma spectroscopy and laser-induced breakdown spectroscopy (LIBS) in Canada. Dr. Sabsabi holds 25 patents and has a record of more than 600 publications (articles and conferences) covering both the fundamental science and industrial applications of laser-induced plasmas. Working with his team, he successfully implemented LIBS technology for a wide range of applications. His innovations have led to the creation of three spin-off companies and enabled ten technology transfers, applying LIBS in industries including mining, agriculture, metallurgy, pharmaceuticals, and manufacturing. He initiated and led the High Efficiency Mining (HEM) program for five years, aiming to enhance the mining value chain through the development of advanced sensors, process technologies, and new materials. Dr. Sabsabi has served on the editorial advisory boards and as guest editor for Spectrochimica Acta B, Analytical and Bioanalytical Chemistry (ABC), Applied Optics (AO), and Applied Spectroscopy. He chaired the LIBS2006 conference in Montreal, and has been vice-chair and co-organizer of several international LIBS conferences. His contributions have been recognized with several awards, including the LIBS Award at the LIBS Summit in Beijing (2019) for fundamental research, and the LIBS 2021 nomination for quantitative applications. Over his more than 33 years at NRC, he has held numerous leadership roles and is currently serving as a Principal Research Officer, leading the development of a new sensor technology platform.

INVITED SPEAKER

ARNAUD BULTEL, UNIVERSITÉ DE ROUEN, FRANCE : *HOW THE MODELLING CAN CONTRIBUTE TO A BETTER UNDERSTANDING OF THE UNDERLYING PHYSICS OF LIBS*

CHRISTOPH GERHARD, UNIVERSITY OF APPLIED SCIENCES AND ART HILDESHEIM / HOLZMINDEN / GÖTTINGEN, HILDESHEIM, GERMANY : *QUANTIFYING MANUFACTURING-INDUCED NEAR-SURFACE DEVIATIONS IN CHEMICAL COMPOSITION OF GLASSES VIA CALIBRATION-FREE LIBS*

ALFRED VOGEL, UNIVERSITY OF LÜBECK, GERMANY : *INTERPLAY OF LASER-INDUCED PLASMA FORMATION AND HYDRODYNAMIC EFFECTS IN BULK LIQUID AND AT A TARGET SURFACE IN AIR*

JHANIS GONZALEZ, LAWRENCE BERKELEY, USA : *INNOVATIVE ADVANCES IN LASER-INDUCED BREAKDOWN SPECTROSCOPY: ENHANCING SENSITIVITY, PRECISION, AND APPLICATIONS*

PAVEL PORIZKA, BRNO UNIVERSITY OF TECHNOLOGY, CZECH REPUBLIC : *BEYOND LIBS, MERGING MODALITIES TO GAIN MORE COMPREHENSIVE INFORMATION*

LUDOVIC DUPONCHEL, UNIVERSITÉ DE LILLE, FRANCE : *EXPLORING LIBS IMAGING AT SCALE: HOW CHEMOMETRICS CHANGES WHAT WE CAN SEE*

CÉCILE FABRE, UNIVERSITÉ DE LORRAINE, FRANCE : *FROM HANDHELD LIBS ANALYSIS TO µLIBS HIGH-RESOLUTION IMAGING: APPLICATIONS IN SULFOSALT MINERAL CHARACTERIZATION*

MARCELLA DELL'AGLIO, INSTITUTE FOR PHOTONICS AND NANOTECHNOLOGIES (CNR-IFN), ITALY : *LASER-INDUCED PLASMA AND BIOSENSING: COUPLING LASER-INDUCED BREAKDOWN SPECTROSCOPY WITH LATERAL FLOW IMMUNOASSAY*

YE TIAN, CHINA OCEAN UNIVERSITY, CHINA : UNDERWATER LASER-INDUCED BREAKDOWN SPECTROSCOPY (LIBS) TOWARDS DEEP-SEA APPLICATIONS

CRISTINA MÉNDEZ-LÓPEZ, UNIVERSITY OF OVIEDO, SPAIN, DETERMINATION OF TOTAL FLUORINE IN ORGANIC LIQUID MATRICES: ON THE ROAD TO GASOLINE SCREENINGS

VINCENT MOTTO-ROS LYON UNIVERSITY, FRANCE, ELEMENT-SPECIFIC CHALLENGES AS A DRIVING FORCE FOR µ-LIBS IMAGING

ORGANISERS

MINISTÈRE DE LA CULTURE
Liberté
Égalité
Fraternité

CENTRE DE RECHERCHE ET DE RESTAURATION DES MUSÉES DE FRANCE

The Centre for Research and Restoration of French Museums (C2RMF) is a national service of the Ministry of Culture serving 1,220 state-approved museums distinguished by the designation “Musées de France.” The C2RMF's key activities focus on the study of works of art at both a national and regional level. Equipped with world-class experimental facilities that are constantly being improved, like the particle accelerator AGLAE, the C2RMF focuses its research on several key areas: the physical and chemical characteristics of materials, the ageing of materials, database management, image analysis, digitisation and 3D modelling. They also have knowledge and experience of the capture of 3D data from many different types of artefacts. Furthermore, it has launched an open-source database management system that provides multilingual access (17 languages) to specialized vocabularies for the cultural museum sector and a semantic interface to browse the results. C2RMF also carries out scientific studies and data recording for these collections, and is active both nationally and internationally in the field of cultural heritage conservation and analysis. The C2RMF is involved in the development of technologies and scientific procedures employed in the preservation of art works and artefacts, both on its own and in partnership with other museums and research institutions across the globe.

Fondation des Sciences du Patrimoine

The Fondation des Sciences du Patrimoine (Foundation for Heritage Science) is a partnership foundation under the Ministry of Culture and the National Center for Scientific Research (CNRS), initially created to oversee the governance of the LabEx (Laboratory of Excellence) Patrima and the EquipEx (Equipment of Excellence) Patrimex. Starting in 2018, the Foundation manages the Material Cultural Heritage: Knowledge, Heritage Preservation, and Transmission program within the Humanities, Creation, and Heritage University Research School.

Its ambition is to structure and finance research on tangible cultural heritage, with three main areas of focus:

- detailed knowledge of heritage
- improvement of conservation and restoration processes
- improvement of techniques for disseminating knowledge

In just a few years, the FSP has supported dozens of doctoral contracts, postdoctoral contracts, and master's scholarships, and has helped organize numerous scientific events, establishing itself as a leading player in the Paris region in the field of material heritage research. It helps to bridge the gap between the academic world and the sphere of heritage professionals by offering specialists from a variety of institutional backgrounds a framework and the means to carry out jointly defined research projects. The promotion of new synergies and working practices also applies from a disciplinary point of view: the projects supported bring together all disciplines, from history to computer science, including physical and chemical sciences, mathematics, law, and anthropology.

EMSLIBS PARIS EMSLIBS

These projects contribute to a deeper understanding of heritage and an improvement in conservation and restoration processes. They bring to the fore heritage objects that are still little known or poorly understood in terms of their production and dissemination, as well as collections that are poorly defined from a scientific point of view.

Cetim, the French Technical Center for Mechanical Industries, has been created in 1965 to support innovation and competitiveness of companies thanks to its multidisciplinary expertise and unique R&D capacity.

Our 1 100 employees provide a comprehensive array of services and solutions to the worldwide manufacturing industries, especially Aerospace, Automotive, Energy and Oil & Gas, within the field of:

- Testing, control, measurement (NDT, 3D Scanning, metrology, IoT...)
- Innovative product, process engineering and industrialization (composites, additive manufacturing, smart machining, ...)
- Services and consultancy (failure analysis and risk assessment, operational efficiency support, software, Cetim Academy® trainings)
- Outsourced R&D

Together with its international subsidiaries and partners, Cetim has been serving 8 000 customers in more than 50 countries and has become a world leading engineering group able to support your environmental and Industry 4.0 transformation.

SPONSORS PLATINUM

CETIM

LTB LASERTECHNIK BERLIN

AVANTES MEMBER OF THE NYNOMIC GROUP

QLI QUANTUM LIGHT INSTRUMENTS / OPTON LASER INTERNATIONAL

SPONSORS GOLD

Photonics Industries International, Inc.

INNOLAS LASER

ABLATOM ELEMENTAL LASER SOLUTIONS

Montfort™ Laser

LUMIBIRD MORE THAN LASERS

OceanOptics


OXFORD
INSTRUMENTS


Elemental Scientific
ICP | ICPMS


SPECTRAL
INDUSTRIES


OPTOPRIM