Scientific Programme

Monday, 12th June

Welcome to the EMSLIBS/CSI Participants: Stefano Legnaoli, Alessandro D’Ulivo, Vincenzo Palleschi

PLENARY LECTURE: Javier Laserna - The sources, progress and frontiers of an exciting technology: laser-induced breakdown spectroscopy

Nanotech
Heidi Goenaga (IL) - QQQ-ICP-MS hyphenations for the characterisation of manufactured nanomaterials in complex matrices: from size-based speciation to counting
Anna Czaderna - The feasibility of analysis of water structure in electric field using molecular spectroscopies
Akif G. Bozkurt - Alkaline phosphatase labeled SERS active sandwich immunoassay for the detection of E. coli
Anna Tugarova (IL) - Vibrational Spectroscopy in Studying Microbially Synthesised Selenium Nanoparticles
Martin Resano (KL) - Characterization of metallic nanoparticles via high-resolution continuum source atomic absorption spectrometry
Paulina Filipczak - Surface Enhanced Raman Scattering of Water in Dispersions of Silver Nanoparticles
Magdalena Nieto (IL) - Control of spectral interference in must and wine analysis via high-resolution continuum source atomic absorption spectrometry
Nicoleta Ditantino - Spectroscopic characterization of second-generation nanostructured antimicrobials

Food Analysis I
Banu Sezer - Laser Induced Breakdown Spectroscopy Based Protein Assay for Cereal Samples
William Boschetti - Control of spectral interference in muss and wine analysis via high-resolution continuum source flame atomic absorption spectrometry
Sonia Fernandez-Menendez – Elemental mass spectrometric evaluation of iron nanoparticles as an enhanced iron supplement for formula milk
Beatriz Gomez-Nieto - Evaluation of internal standardization to improve the determination of trace elements in beverages by high-resolution continuum source flame atomic absorption spectrometry
Havaa Tumay Temiz - Laser Induced Breakdown Spectroscopy for Determination of Buster Adulteration
Cheryl McCrindle - Identification of the Region of Cultivation of Ethiopian Coffee Using Spectrometric Data
Elif Ercioglu - Barcoding Approach for Determination of Vegetable Oil by Raman Spectroscopy

Food Analysis II
Marta Gonzalez-Cabreiro - Study of olive fruit ripening process by means of principal component analysis of hyperspectral FTIR images
Koichi Chiba - Arsenic Speciation and Cadmium Determination in Tobacco Leaves and Smoke

Archeology and Cultural Heritage I
Roberta Fantoni (IL) - In situ and remote spectroscopic characterization of Cultural Heritage surfaces
Claudia Pelosi - Multi-analytical approach for the evaluation of the stability of painting materials for conservation purposes
Ahmed Abd Rabbo - Scientific investigation by multispectral imaging. OM, ESEM, P- XRFT, XRD and FTIR of an ancient Egyptian polychrome wooden coffin
Laura Cartechini - Chemical changes in oil paints containing copper-based green pigments: a systematic investigation by ATR-FTIR spectroscopy
Gianni Galletto - Rare Earth Elements analysis to identify anthropogenic signatures at the Valle del Serpis (Spain) Neolithic settlements
Marco Gamello – Cai-oxalate and alteration films on the stones of the medieval Romanesque Sardinian monuments (Italy)
Francesca Rossi - MOLAB transnational access at the Estorick Collection: non invasive study of the Italian Futurist paintings
Rezida Khramenkova - Research of gesso and paint layers of the fresco painting of St. Christopher with a horse head from the Assumption Cathedral on the Sviyazhsk Island (Russia)
Barbara Wagner - Screening of inorganic species using LA-ICP-MS imaging data and Raman spectroscopy for historic pigments identification

Environment I
Patricia Smistowskich (KL) - Oxygenated and nitrated PAHs in the atmosphere of Buenos Aires. Determination by UHPLC(+)-APCI-MS/MS
Beatrice Canzanello - Thallium speciation in acid mine drainages: method development, influence of environmental parameters and application

Biotech
Ricardo Urrutia-Goyes - Compound Methodology for the Characterization of Lead Contamination in Soil: The Case of a Former Battery Factory in Monterrey, Mexico
Yoko Nurnome - Detection of Volatile Organic Compounds in direct current pulse glow discharge plasma by Soft Plasma Ionization Mass Spectrometry
Emilia Vassileva - Determination of selected trace elements in the open ocean
Agnieszka Krata - Ion Chromatography Coupled Multicollector/ICP MS in the Determination of Inorganic Cations
Asli Baykal - Impact of soil and root type on the behavior of ZnO and Al2O3 by microbial and antioxidant activity
Li Wu - Chemical compositional bulk analysis of size-segregated aerosol particles using ATR-FTIR
Xue Li - Real-Time Investigation of Chemical Compositions and Hygroscopic Properties of Aerosols Generated from NaCl and Oxalic Acid Mixture Solutions Using in Situ Raman Microspectrometry

Fundamentals of LIBS I
Christian Parigger (IL) - Measurement of electron temperature and density in laser-induced hydrogen and laboratory air plasma
Paweł Gasior - Inter-pulse delay influence on the plasma expansion dynamics in DP-LIBS investigation of a graphite sample in vacuum
Cesar Alvarez-Llamosas - Use of CaF molecular emission to improve the analytical capabilities for fluorine detection by LIBS
Jorg Hermann (KL) - Characterization of laser-produced plasmas
Alexey Balunov - Features of LIBS under the action of ultrasound
Giampiero Colonna - Modeling plasma heating by fs laser pulse
IBSEN: Thomas P. Rasmussen - Ultra compact high-resolution OEM spectrometers for LIBS
Vigachslav Lebedev - LIBS system on the basis of Nd:YAG laser with multiloop cavity self-Q-switched by external plasma mirror

PLENARY LECTURE: Marco Zezzi Arruda - Unraveling genetically modified organisms through mass spectrometry
Andreas Karydas (IL) - Interdisciplinary synchrotron radiation based X-ray spectrometry applications using the IAEA multi-technique instrument operated at the XRF beamline of Elettra Sincrotrone Trieste. Denga Ramutshatsha - Application of response surface methodology for simultaneous removal of Na, K, Ca and Mg ion from seawater using metal oxide nanostructures Beata Godlewksa-Zylikiewicz - Development of HPLC-ICP MS Method for Separation and Determination of Nano and Ionic Forms of Gold and Silver Diego Pereira Leite - Characterization of SiO2 Nanoparticles by Single Particle - Inductively Coupled Plasma - Tandem Mass Spectroscopy

Food Analysis I


Archaeology and Cultural Heritage I

Ilaria Bonaduce (KL) - Organic mass spectrometry to investigate molecular degradation phenomena of modern oil paintings Nick Schiavon - Assessing the efficacy of the EDXRF/Monte Carlo Simulations approach in the analysis of ancient metal artifacts: an experimental study on artificial corroded alloy samples Giuseppe Spoto - Atmospheric pressure MALDI for the non-invasive characterization of carbonaceous ink from Renaissance documents Ioana Cortea - In situ characterization of the pictorial layers of an original 1771 Pascal Taskin harpsichord Annalisa Chieli - Why does Geranium lake fade? Photochemical study of eosin-based pigments in oil paints Stefano Columbu - Secondary mineral phases and ancient treatments on limestone from Monte de Prama nuragic statues (Sardinia, Italy)

Geological Applications I

Russel Harmon (IL) - LIBS in the Earth Sciences – Recent Applications and Current Perspectives David Day - Lithium Brine Analysis to PPM Levels using Hand Held LIBS Rim Al-Rifai - Non-Invasive Elemental Analysis of Gemstones by Nano Particle Enhanced Laser Induced Breakdown Spectroscopy Timur Akhmetzhanov - Quantification of Fe/Mn ratio in iron-manganese nodules by CF-LIBS Stefano Pagnotta - Accuracy and precision improvement of Laser-Induced Breakdown Spectroscopy by geostandards

Fundamentals of LIBS I

Carlos Aragon - Analysis of aluminum alloys by CSigma laser-induced breakdown spectroscopy Houssyen Youssf - A Comparative Study of Carbon Plasma Emission in Methane and Argon Atmosphere

PLENARY LECTURE: Ove Axner - NICE-OHMS and NICE-AAS

Industrial Applications

Mohamad Sabsabi (IL) - New Horizons in LIBS and Challenges for its Implementation in the Mining Industry
Sergey Pershin - Three Decades of Double-pulse LIBS: from the first steps in 1987 to modern industry applications
Maurice Bringly - FTIR PM-IRRAS Spectroscopy and AFM Investigations of Polymer and Copolymer Thin Films Adsorbed on Metal Substrates
Sven Connemann - Automated LIBS sorting system for spent refractories from the steel industry for high-value recycling
Shuzo Eto - Rapid measurement system for concrete sample by using laser-induced breakdown spectroscopy
Elise François - Non-ferrous slag analysis using Laser-Induced Breakdown Spectroscopy (LIBS)
Stanislaw Piorek - Performance Comparison of Handheld LIBS Analyzer with that of Handheld XRF Analyzer
Ahmed Irfan - Quantitative analysis of Al-Si alloy using calibration free laser induced breakdown spectroscopy (CF-LIBS)
Syedah Safad Zehra - Time resolved VUV LIBS for thin film depth profiling
Hector Morillas - Evaluation of deterioration processes on bricks exposed to industrial-marine environments using field and laboratory analytical methods
Sebastian Breithaupt - Surface vs. Core analysis of synthetic rubber samples and the influence on the ablation efficiency using LIBS

Bio-medical Applications

Boris Mizaikoff (IL) - Towards IR-on-a-Chip: Is Smaller Better?
Paddy Hayden (KL) - Applications of Vacuum Ultraviolet Laser Induced Breakdown Spectroscopy (VUV-LIBS) in the Analysis of Pharmaceuticals
Samuel Moncayo - LIBS imaging for supporting medical diagnoses
Ahmed Irfan - Elemental analysis of the thyroid by laser induced breakdown spectroscopy
Alexander A. Kamnev (KL) - Microbiological Applications of Vibrational Spectroscopy: Looking inside through the Cell Wall
Mahsa Ghezelbash - The study of human blood serum for Triglyceride (TG) and Low-Density Lipoprotein (LDL) factors diagnosis using Laser Induced Breakdown Spectroscopy (LIBS)
Muhammad Ali - Vacuum Ultraviolet Laser Induced Breakdown Spectroscopy (VUV-LIBS) For Pharmaceutical Analysis
Paolo Armaneti - The Photoacoustic effect in the field of biomedicine: Imaging, multispectral analysis in biomedical applications

Geological Applications II

Saara Kaski - Classification of sulfur minerals in vacuum ultraviolet and near-infrared spectral region
Richard Hark - Analysis of Columbite-Tantalite Using Handheld LIBS
Giorgio Senesi - Three-dimensional compositional mapping of limestone by double-pulse micro-laser-induced breakdown spectroscopy
Susanne Schröder - Improving Sulfur Detection in Martian Targets with time-resolved LIBS
Simona Raneri - Laser Induced Breakdown Spectroscopy (LIBS) for geological testing: the case of corundum gems

LIBS & Raman

Michael Angel (KL) - Miniature Spatial Heterodyne Spectrometers for Remote LIBS and Raman Spectroscopy
Sergey Pavlov - Laser-ablation alteration of iron sulfides studied at different simulated planetary conditions by Raman spectroscopy
Bobby Bhatt - Nuclear Forensics Analysis by Combined LIBS and Raman Spectrometry
Vasily N. Lednev - Combining Raman and Laser Induced Breakdown Spectroscopy by Double Pulse Lasing

Archeology and Cultural Heritage II

Marta Manso (KL) - X-ray fluorescence and Raman analytical techniques in written and artistic documents characterization
Alessia Artesani - Time resolved photoluminescence spectroscopy for investigation of semiconductor modern pigments
Jeanette Jacqueline - Protective effect of linseed oil varnish on archaeological wood treated with alum.
Emilio Catelli - Total Reflection Near and Mid-Infrared Spectroscopic Studies on Outdoor and Archaeological Bronze Patinas
Maria Luisa DeCarvalho (KL) - X-ray micro beam: Cultural and archaeological heritage applications overview
Sibilla Orsini - Spectroscopic investigation of the interactions between commercial stains and protein matrices used in paintings
Mohammadmahdi Hassanimatin - Reducing Ablation and Improving Signal in Laser Induced Breakdown Spectroscopy by Using Spark Discharge in Sensitive and Valuables Samples
Lynda Idjouadiene - The first study of non-destructive technical to some manuscripts of Algerian heritage
Eugenia Shakhutdinova - A unique 10th century silver coin of the Banjirud dynasty (Bolgar settlement, Russia)
Gioacchino Tempesta - micro-LIBS vs. XRF analysis of surface-enriched silver coins. Is a micro-destructive approach really unavoidable?

Fundamentals of LIBS II

Igor Gornushkin - Model of Stimulated Emission in Aluminum Laser-Induced Plasma Produced by Resonance Pumping
Irene Maria Carrasco-Garcia - Wavelength Dependence of Surface Transformations in Femtosecond Laser Ablation of Metallic Thin-Films
Muhammad Hanif - Laser Induced Breakdown Spectroscopic Studies of Silicon Plasma
Thomas Dietz - Reactive molecular dynamic simulations to investigate molecular formation in laser-induced plasmas
Ben Delaney - Determination of Detection Limits of Trace Elements in Aluminium Using Stagnation Layers
Zhe Wang (IL) - A set of quantification method for coal analysis using laser-induced breakdown spectroscopy
Johannes Pedarnig - Analysis of metallurgical slags in steel production by calibration-free laser-induced breakdown spectroscopy
Guy Monfort - Strategies for the LIBS on-line analysis of transition billets in continuous casting machines
Minhchoi Cui - Dynamics and Parameters of Plasma Generated by Long and Short Dual Pulses Laser Interacting with Steel Sample
Volker Sturm - Fast Identification of Steel Bloom Composition at a Rolling Mill by LIBS Elemental Analysis
SCAP
Nomvano Mketo - Trace-metal Mobility in Coal Samples using Multivariate Optimised Microwave Based Sequential Extraction Method prior to Spectrometric Determination

PLENARY LECTURE: Montserrat Filella - When Anthropocene means exploiting all the elements of the periodic table: a new challenge for environmental analytical chemistry

Industrial Applications

Card Fricke-Begemann - LIBS for identification and localization of valuable materials in electronic waste

Lukáš Průcha - Depth Profile Analysis of Thin Films Using Laser-Induced Breakdown Spectroscopy

Shyama Prasad Banerjee - Laser Induced Breakdown Spectroscopy for monitoring laser scribing on organic photovoltaic devices

Gerd Walsh - Laser-induced breakdown spectroscopy for the chemical investigation of concrete infrastructure

Bio-medical applications

Alessandra Gianoncelli - Recent achievements in Life Sciences of the TwinMic soft spectromicroscopy beamline at Elettra

Neureddine Cheriet - Discrimination of lithiasic components in kidney stones using laser induced breakdown spectroscopy

Thomas Signour - Air Bio-Monitoring: a new protocol for cultureless bacteria identification by combining genomic analysis and Raman spectroscopy

Fiorella Iaquinta - Determination of As, Hg, Mn and Pb in hair using atomic absorption spectrometry as biomarkers of exposure for health risk assessment

Viktor Kanicky - Laser ablation inductively coupled plasma mass spectrometry in elemental imaging of selected mineral and biological samples

Hudson Angayo Kalambuka - Rapid Malaria Diagnostics via Peak-Free LIBS of Blood

Alessandra Flori - Magnetic Resonance Chemical Shift Imaging by hyperpolarized probes: cardiac 13C-spectroscopic imaging of enzymatic fluxes

Materials

Aneta Ciupa - Synthesis, structure, vibrational properties and phase transition mechanism

Ali Reza Barenji - Structure, Vibrational Analysis and Intramolecular Hydrogen Bond Strength of Some 4-Amino-3-Penten-2-One Derivatives

Zuzana Moravkova - Model of the interaction of polypyrrole with organic dyes and its influence on polypyrrole morphology – vibrational spectroscopy study

Eraldo Luiz Lehmann - Mass-charge shift ratio to increase accuracy through oxide formation of Mn, Ni and Fe focusing on their determination by ICP-MS

Ana Guilherme Buzanich - S2KAXFS: Time-resolved X-ray absorption spectroscopy in a 'single-shot' - First in situ applications

Tiina Virtanen - Application of principal component analysis model for real-time monitoring membrane fouling

Xin Zhang - Fingerprint Identification of Inorganic Compounds Using Terahertz Time-Domain Spectroscopy

Speciation

Joanna Szpunar (IL) - Spectrometric tools for selenium speciation: oxidation states, metabolites, proteins and nanoparticles

Ryszard Lobinski (KL) - Probing for metal-ligand interactions and analysis for non-covalent metal complexes in bacteria and plants using chromatography with dual ICP MS and electrospray FT MS detection

Tomas Matsusek - Direct Speciation Analysis of Arsenic in Whole Blood and Blood Plasma at Low Exposure Levels by Hydride Generation-Cryotrapping-ICP-MS: A New Trick of an Old Dog

Luthando Nyaba - Speciation of inorganic selenium in environmental samples after suspended dispersive solid phase microextraction combined with inductively coupled plasma spectrometric determination

Agnieszka Nawrocka - Speciation Analysis of Arsenic Compounds in Marin Samples

LIBS Imaging

Vincent Motto-Ros (KL) - Elemental imaging by LIBS: recent advances and remaining challenges

CLEMISSION

Cassian Gottlieb - Influence of grain sizes on the quantification of LIBS measurements in concrete

Violeta Lazic - Integrated Laser Sensor (ILS) for characterization and extended mapping of remote targets

Morris Weimerskirch - LIBS-Stratigraphy of protective coatings: Investigations on the wavelength dependence of the ablation rate in metals

Pavel Pofzik - Advances in direct utilization of echellograms in LIBS analysis
Wednesday, 14th June

PLENARY LECTURE: X. Chris Le - Arsenic Speciation and Arsenic Binding to Proteins

Materials I

Yun-Bao Jiang - Innovations in Spectral Sensing Exploring Ag+ Coordination Polymers Facilitated by Ag+ Ag+ Interactions
Belgin Genc Ozturak - Analysis of Laser Treated CFRP Surfaces by Laser-Induced Breakdown Spectroscopy
Walter Giurlani - An innovative spectroscopic technique for the study of palladium behavoir in Alkaline Fuel Cells
Carlos Ararat - Laser Induced Breakdown Spectroscopy Application in Diffusion Studies in Zr Based Alloys
Roman Jędrzejczyk - New sonochemically assisted synthesis of structured non-noble catalyst for methane and VOCs combustion
Tomasz Runka - Raman spectroscopy characterization of cyclic/acyclic molecular rotors

Atomic Spectroscopy

Margaretha de Loos-Vollebregt (KL) - The role of charge transfer in matrix-induced non-spectral interferences in inductively coupled plasma atomic emission and mass spectrometry
Daniel L. G. Borges - New Findings on the Direct Analysis of Solid Samples Using Atomic and Inorganic Mass Spectrometry
Zhenli Zhu - Development of a Battery-Operated, Portable Atomic Emission Analyzer for Elemental Analysis Based on Atmospheric Pressure Glow Discharge Excitation Source

AGILENT

Rocío Manía - Quantitative depth profile analysis of rare earth elements in corroded steel by glow discharge - time of flight mass spectrometry
Ilknur Durukan Temuge - Ligandless Extraction of Trace Amount of Lead Ion by Solidified Floating Organic Drop Microextraction and Determination by Atomic Absorption Spectrometer

ATOMICTRACE

Proteomics

Rainer Bischoff (IL) - Electrochemical, site-specific peptide bond cleavage as a novel approach in protein analysis
Qiuchuan Wang (KL) - Metal-Tagging Strategy for Bioanalysis: Quantification of Protein Biomarkers and Counting Cells
Rosario Pereireno - Bioimaging of proteins in biological tissue sections by LA-ICP-MS using bioconjugated gold nanoclusters
Sara Maria Rodríguez-Menéndez - Comprehensive quantitative study of Zn and Metallothioneins in eye tissue sections and cultured cells by mass spectrometry-based methodologies

Forensic Applications

Jun Kawai (KL) - Fabrication and Falsification in XRF, ICP-AES, HG-AAS and GC-MS in Forensic Analyses in Japan
Luigia Sabbatini (KL) - An integrated multi analytical approach for the investigation of modern felt-tip pen inks
Jun-Ho Yang - Separation of Overlapping Latent Fingerprint using Laser-Induced Breakdown Spectroscopy Combined with Multivariate Analysis
Marek Kotrlý - Analysis techniques for multicomponent samples in forensic fields

Israël Schechter - Detection and Mapping of Trace Materials on Surfaces Under Ambient Conditions using Multiphoton Electron Extraction Spectroscopy (MEES) and Comparison to Traditional Spectroscopies

Food Analysis II

Gonca Bilge - Comparison of Laser Induced Breakdown Spectroscopy Analysis Between Milk and Milk Powder
Tiago Varão Silva - Quantitative prediction of coffee adulteration by defective beans using Laser-Induced Breakdown Spectroscopy
Jorge Caceres - Food analysis by Laser Induced Breakdown Spectroscopy (LIBS)
Mariela Piston - Determination of Cu, Fe, Mn and Zn in wheat flour using TXRF: Comparison with FAAS and ETAAS
Josette El Haddad - LIBS combined with chemometrics can improve the quality and safety of natural health products through better differentiation of functional ingredients
Sadia Manzoor - Qualitative and quantitative analysis of milk for the detection of adulteration by Laser Induced Breakdown Spectroscopy
Maria del Carmen Rico Rodríguez - Fast Detection of Adulteration in Honey Using Laser-Induced Breakdown Spectroscopy and Neural Networks
Durgesh Kumar Tripathi - Detection of Silicon bio-availability in different parts of bamboo using LIBS spectroscopy
Devendra Kumar Chauhan - Application of LIBS to compare the mineral profile of two Ashoka species
Anielle Coelho Ranulfi - Nutritional characterization by laser-induced breakdown spectroscopy of healthy and Aphielenhoides sp. Infected soybean leaves
Marco Consumi - High quality analysis of food by multivariate ToF-SIMS approach

Fuels

Enrico Flores Feasible - Sample Preparation Methods for further Rare Earth Elements Determination
Oscar Lombana - Excitation - emission matrix spectroscopy (EEMS) for fuels identification
Przemysław Jodłowski - In situ spectroscopic studies of methane catalytic combustion over Co, Ce and Pd mixed oxides deposited on a steel surface
Carlos Sanchez-Rodriguez - Determination of metals and metalloids in bioethanol samples using a total sample consumption system coupled to ICP techniques
Zofia Kowalewska - Feasibility of high-resolution continuum source flame molecular absorption spectrometry for Si determination in organic solutions via SiO molecule absorption

Vapor generation and Sample Introduction Techniques

Jiri Dedina (KL) - Hydride - Atomizers for Atomic Absorption and Atomic Fluorescence Spectrometry - New Horizons
Enea Pagliano - Recent developments in the determination of inorganic anions by GC-MS
Jan Kratzer - Dielectric Barrier Discharge Atomizers of Volatile Species for Atomic Spectrometry: Applications and Mechanisms
Karel Marschner - Cleavage of As-C Bond during Chemical Hydride Generation
Jurgen Schram - Pulsed Laser Ablation in Liquids as Digestion Method for Inductively Coupled Plasma Optical Emission Spectroscopy
Kazuaki Wagatsuma - Correlation between Gas Temperature and Atomization Behavior of Analyte Elements in Flame Atomic Absorption Spectrometry Estimated with a Multi-Wavelength High-resolution Spectrometer

Liquid Analysis

Montserrat Hidalgo Nunez (KL) - Analysis of liquid samples: a great challenge for LIBS
Mayo Villagrán-Muniz - Study of laser ablation of water droplets with gold nanoparticles
Serife Yalçın - Investigating silicon wafer based substrates for ultra-trace determination of metal solutions: Dry droplet analysis by LIBS.
Francisco Julian Ruiz Espinar - Solid phase microextraction (SPME) using carbon-based screen-printed electrodes combined with LIBS technique detection for sensitive elemental analysis
Laura Ripoll Seguer - Evaluating the use of Thin Film Microextraction (TFME) with laser-induced breakdown spectroscopy (LIBS) for the detection of trace metals in liquid samples

Chemometrics
Jean-Baptiste Sirven – Experimental design in LIBS
Praveen Devangad - Support vector machines for the classification and quantification of borosilicate glass samples using Laser Induced Breakdown Spectroscopy (LIBS)
Euiseok Hwang - Likelihood based Compressive Spectrum Processing for Classification of Same-base Alloys by Laser-induced Breakdown Spectroscopy
Joshua Nyairo Onkangi - Utility of Machine-Learning Enabled LIBS in Forensic Analysis of High Level Nuclear Waste
Daniel Díaz - Application of Conditional Analysis to the Quantification of Au in Ores by Laser-Induced Breakdown Spectroscopy

Thursday, 15th June
PLENARY LECTURE: Annemie Bogaerts - The plasma characteristics and sample behavior in the ICP revealed through computer modeling

Geological Applications III
Russel Harmon - Handheld LIBS as a Field Tool for Diamond Exploration – Analysis of Kimberlite Minerals
Kristin Rammelkamp - Investigation of Normalization Methods using Plasma Parameters for Laser Induced Breakdown Spectroscopy (LIBS) under simulated Martian Conditions
Jens Frydenvang - Mapping the geochemical stratigraphy of Mt. Sharp in Gale Crater, Mars, using the ChemCam instrument on the NASA Curiosity rover
Mauana Schneider – A new approach for arsenic determination: Direct analysis of solid soil samples by HR-CS GF-AAS
Michael Osstrakh - Characterization of NWA 6286 and NWA 7857 Ordinary Chondrites Using X-Ray Diffraction, Magnetization Measurements and Mossbauer Spectroscopy

Fundamentals of Mass Spectrometry
Maria Careri (IL) - Advances and future trends in desorption electrospray-mass spectrometry
Ewa Bułska (KL) - Certified Reference Materials for Atomic and Molecular Mass Spectrometry
Edward Steers (KL) - A systematic comparison of the effects of small quantities of a molecular gas (H₂, N₂ or O₂) in Glow Discharge Mass Spectrometry using argon or neon as the plasma gas

Environment II
Zoltan Mester (KL) - Arsenic speciation in certified reference materials
Victor G. Mihucz - A Simple Speciation Method for Monitoring Arsenic Removal from Drinking Water
Reham Afifi Rezk - LIBS and XRF analysis of heavy metals adsorbed in fish bones: Adsorption Isotherm and Kinetics Studies
Barbara Lesniewska - Novel Methods for Speciation Analysis of Chromium in Environmental Samples Based on Solid Phase Extraction and Ion-exchange Chromatography Coupled to Atomic Spectrometry
Jan Viljanen - Temporal Elemental Release During Biomass Combustion Using Microwave Assisted Laser-induced Breakdown Spectroscopy
Zheng Wang - Element Determination By Atmospheric-Pressure Solution Cathode Glow Discharge And Atomic Emission Spectrometry
Giuseppe Capobianco - A hierarchical classification approach for the identification of different waste polymers by hyperspectral imaging
Mahmoud Payehghadr - Ultra trace determination of Zn²⁺ in plant samples by FAAS after preconcentration
Juan Camilo Cely Garzon - Development of alternatives, integration and evaluation of a prototype instrument for the identification and quantification of hydrocarbons through excitation - emission matrix spectroscopy (EEMS)
Gerrit Renner - Automated Identification of Environmental Microplastics Based on FT-IR Spectroscopy.

Clinical and Pharma
Rosalba Gaudioso (IL) - Cancer Diagnosis using LIBS and Machine Learning Tools: Progress and Challenges
Yong Liang - ICPMS-Based Quantitative Analysis of Glyco-PTMs via Metabolism-Mediated and Clickable Lanthanide-Tagging Strategy
Francesca Bellagambi - Determination of biomarkers in oral fluid for monitoring heart failure patients
Marcia Mesko - Determination of Cd and Pb in Creamy, Opaque and Shimmering Lipstick by ICP-MS
Nuclear Applications

Marco Fus

Mauro Guerra

Graphene Predicted

Lorenzo Pardini

molecular

Alberto in Ground, Excited and Different Redox States

Stanislav Vincenzo Barone (IL)

Induced Breakdown Spectroscopy and Laser Ablation Inductively Coupled Plasma Analysis

PLENARY LECTURE: Rick Russo

Breakdown Spectroscopy Technique

Tomoko Takahashi - Quantitative elemental analysis of water-submerged solids using PLS with temperature segmented database for LIBS

Nano-LIBS

Alessandro DeGiacomo (KL) – Perspectives of Nanoparticle Enhanced Laser Induced Breakdown: the laser matter interaction under NPs control

Alexandre Semerok - Nano-sampling of metals with ultra-short laser pulses

Francesco Poggialini - Green Synthesis of Silver Nanoparticles and Their Application in the Laser Induced Breakdown Spectroscopy Technique

Ashraf El Sherbini - On nanoparticle enhanced laser-induced emission spectroscopy

PLENARY LECTURE: Rick Russo - Solid Matrix Transformation as a Sample Preparation Method for Laser Induced Breakdown Spectroscopy and Laser Ablation Inductively Coupled Plasma Analysis

Computational Spectroscopy

Vincenzo Barone (IL) - The Virtual Multifrequency Spectrometer: status and perspectives of an undergoing project

Stanislav Zalizii (IL) - Quantum Chemical Interpretation of Spectral Properties of Organometallic Complexes in Ground, Excited and Different Redox States

Alberto Biaiardi – Accessible accurate simulation of vibrational and electronic spectra of medium-to-large molecular systems: the virtual spectrometer

Lorenzo Pardini - Mapping Atomic Orbitals with the Transmission Electron Microscope: Images of Defective Graphene Predicted from First-Principles Theory

Laura Zanetti-Polli - Modeling amide I infrared spectra of proteins: insights from a perturbative approach

Mauro Guerr - High accuracy simulation of XRF spectra of transition metals

Marco Fus - Computational modelling of chiroptical properties of transition metal complexes

Madhavi Z. Martin (IL) - Evaluation of corrosion on materials at the Y-12 Nuclear Security Complex using Hand-Held Laser-Induced Breakdown Spectroscopy

Roger Martin (IL) – Twenty Years of LIBS at Oak Ridge National Laboratory: Nuclear Applications and Future Promise

Kristian Myhre - Analysis of Separation Processes for the Production of Radioisotopes Using Laser-Induced Breakdown Spectroscopy

Juma Moses Walwinnie - Quantitative Raman Microspectrometry of Uranium in Individual Aerosols over a Model Nuclear Atmosphere

Francesco Colao - Development of a LIBS system for applications in Frascati tokamak upgrade

Pavel Veis - Simultaneous echelle broadband and high-resolution OES study for CF LIBS analysis of W-based materials in thermonuclear fusion

Clinical and Pharma

Fabio Di Francesco (KL) - Flexible and disposable sensors based on graphenic materials for wound monitoring

Sofia Pessanha - Non-destructive spectroscopic techniques applied to dentistry research in Composition Analysis and Grade Identification of Metallic Alloys

Tommaso Lomonaco - Determination of volatile organic compounds in human breath for monitoring heart failure patients

Sungho Jeong - Detection and Mapping of Cutaneous Melanoma Using Laser Induced Breakdown Spectroscopy

Sanja Živković - Application of TEA CO2 LIBS for Elemental Analysis of Powdered Biological Samples

Natalia Miliszkiewicz - Comparison of selected calibration approaches in LA-ICP-MS studies of Mg and Zn distribution in rat brain tissue

Nano-LIBS

Citlali Sanchez-Akè (IL) - Laser-induced nanoparticle formation and its application for LIBS enhancement

Kemal Eseller - Development of a New Method for Structural Analysis of Ge Nanoparticles Embedded ZnO Thin Films By Laser Induced Breakdown Spectroscopy

Pablo Purush Pacheco - Attogram sensitivity through laser-induced breakdown spectroscopy of single optically-trapped nanoparticles

Mini theoretical/practical course on XRF and Raman

Roberto Alberti

Underwater LIBS

Tetsuo Sakka (KL) - Chemical reactions in the plasma for quantitative underwater LIBS

Blair Thornton - Reflections on 5 years of LIBS Deployments for Deep-Sea Research

Soichi Yoshino - Analysis of underwater long-Pulse LIBS signals using Artificial Neural Networks

Marcella Dell’Aglio - Single and Double pulse laser-induced breakdown spectroscopy of solids in water: effect of hydrostatic pressure on laser induced plasma, cavitation bubble and emission spectra

Tomoko Takahashi - Quantitative elemental analysis of water-submerged solids using PLS with temperature segmented database for LIBS

Nano-LIBS

Alessandro DeGiacomo (KL) – Perspectives of Nanoparticle Enhanced Laser Induced Breakdown: the laser matter interaction under NPs control

Alexandre Semerok - Nano-sampling of metals with ultra-short laser pulses

Francesco Poggialini - Green Synthesis of Silver Nanoparticles and Their Application in the Laser Induced Breakdown Spectroscopy Technique

Ashraf El Sherbini - On nanoparticle enhanced laser-induced emission spectroscopy

PLENARY LECTURE: Rick Russo - Solid Matrix Transformation as a Sample Preparation Method for Laser Induced Breakdown Spectroscopy and Laser Ablation Inductively Coupled Plasma Analysis

Computational Spectroscopy

Vincenzo Barone (IL) - The Virtual Multifrequency Spectrometer: status and perspectives of an undergoing project

Stanislav Zalizii (IL) - Quantum Chemical Interpretation of Spectral Properties of Organometallic Complexes in Ground, Excited and Different Redox States

Alberto Biaiardi – Accessible accurate simulation of vibrational and electronic spectra of medium-to-large molecular systems: the virtual spectrometer

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Roger Martin (IL) – Twenty Years of LIBS at Oak Ridge National Laboratory: Nuclear Applications and Future Promise

Kristian Myhre - Analysis of Separation Processes for the Production of Radioisotopes Using Laser-Induced Breakdown Spectroscopy

Juma Moses Walwinnie - Quantitative Raman Microspectrometry of Uranium in Individual Aerosols over a Model Nuclear Atmosphere

Francesco Colao - Development of a LIBS system for applications in Frascati tokamak upgrade

Pavel Veis - Simultaneous echelle broadband and high-resolution OES study for CF LIBS analysis of W-based materials in thermonuclear fusion

Clinical and Pharma

Fabio Di Francesco (KL) - Flexible and disposable sensors based on graphenic materials for wound monitoring

Sofia Pessanha - Non-destructive spectroscopic techniques applied to dentistry research in Composition Analysis and Grade Identification of Metallic Alloys

Tommaso Lomonaco - Determination of volatile organic compounds in human breath for monitoring heart failure patients

Sungho Jeong - Detection and Mapping of Cutaneous Melanoma Using Laser Induced Breakdown Spectroscopy

Sanja Živković - Application of TEA CO2 LIBS for Elemental Analysis of Powdered Biological Samples

Natalia Miliszkiewicz - Comparison of selected calibration approaches in LA-ICP-MS studies of Mg and Zn distribution in rat brain tissue

Nano-LIBS

Citlali Sanchez-Akè (IL) - Laser-induced nanoparticle formation and its application for LIBS enhancement

Kemal Eseller - Development of a New Method for Structural Analysis of Ge Nanoparticles Embedded ZnO Thin Films By Laser Induced Breakdown Spectroscopy

Pablo Purush Pacheco - Attogram sensitivity through laser-induced breakdown spectroscopy of single optically-trapped nanoparticles

Mini theoretical/practical course on XRF and Raman

Roberto Alberti

Underwater LIBS

Tetsuo Sakka (KL) - Chemical reactions in the plasma for quantitative underwater LIBS

Blair Thornton - Reflections on 5 years of LIBS Deployments for Deep-Sea Research

Soichi Yoshino - Analysis of underwater long-Pulse LIBS signals using Artificial Neural Networks

Marcella Dell’Aglio - Single and Double pulse laser-induced breakdown spectroscopy of solids in water: effect of hydrostatic pressure on laser induced plasma, cavitation bubble and emission spectra

Tomoko Takahashi - Quantitative elemental analysis of water-submerged solids using PLS with temperature segmented database for LIBS

Nano-LIBS

Alessandro DeGiacomo (KL) – Perspectives of Nanoparticle Enhanced Laser Induced Breakdown: the laser matter interaction under NPs control

Alexandre Semerok - Nano-sampling of metals with ultra-short laser pulses

Francesco Poggialini - Green Synthesis of Silver Nanoparticles and Their Application in the Laser Induced Breakdown Spectroscopy Technique

Ashraf El Sherbini - On nanoparticle enhanced laser-induced emission spectroscopy

PLENARY LECTURE: Rick Russo - Solid Matrix Transformation as a Sample Preparation Method for Laser Induced Breakdown Spectroscopy and Laser Ablation Inductively Coupled Plasma Analysis

Computational Spectroscopy

Vincenzo Barone (IL) - The Virtual Multifrequency Spectrometer: status and perspectives of an undergoing project

Stanislav Zalizii (IL) - Quantum Chemical Interpretation of Spectral Properties of Organometallic Complexes in Ground, Excited and Different Redox States

Alberto Biaiardi – Accessible accurate simulation of vibrational and electronic spectra of medium-to-large molecular systems: the virtual spectrometer

Lorenzo Pardini - Mapping Atomic Orbitals with the Transmission Electron Microscope: Images of Defective Graphene Predicted from First-Principles Theory

Laura Zanetti-Polli - Modeling amide I infrared spectra of proteins: insights from a perturbative approach

Mauro Guerr - High accuracy simulation of XRF spectra of transition metals

Marco Fus - Computational modelling of chiroptical properties of transition metal complexes

Madhavi Z. Martin (IL) - Evaluation of corrosion on materials at the Y-12 Nuclear Security Complex using Hand-Held Laser-Induced Breakdown Spectroscopy

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Friday, 16th June

PLENARY: Bernhard Welz - High-Resolution Continuum Source Absorption Spectrometry can do it
PLENARY: Nicolò Omenetto - Laser-induced breakdown spectroscopy: personal reminiscences of a long-lasting interaction
PLENARY: Sohail Mushtaq - Latest developments in understanding the plasma processes in analytical glow discharge optical emission and mass spectrometry
PLENARY: Mohamed Abdel Harith - Evolution of EMSLIBS, from regional meeting to an inclusive global event