2024 Winter Conference on Plasma Spectrochemistry
Call for Abstracts and Titles

Preliminary titles and abstracts (50 words) are solicited on original plasma spectrochemical research, methods and applications. A submission form is available on page 19. The title and abstract submission deadline is July 21, 2023. Accepted titles will be acknowledged in August and assigned program times, and final abstracts will be due October 20, 2023. An abstract processing fee ($50) will be waived for on-time submissions, and a post-deadline processing fee penalty will be added for late submissions. Symposium topics include the following, and papers covering other plasma-related topics are encouraged:

Symposia on Trace Elements, Stable Isotope, and Elemental Speciation Analyses

- Biological Imaging and Speciation Analyses
- Certified Reference Materials, Quality Control, Metrology
- Chemicals, Pure Reagents, Ultrapure Water
- Clinical Biomonitoring, Imaging, and Mass Cytometry
- Earth, Marine, and Geological Sciences
- Environmental, Agricultural, and Food Sciences
- Fundamental Processes, Basic Studies
- Petroleum Materials, Products, and Organic Solvents
- Pharmaceutical, Supplements, Nutraceutical Analysis
- Plasma Instrumentation, Sample Presentation
- Provenance, Authentication, Source Origin, Forensics
- Radioisotopes and Nuclear Materials Analyses
- Semiconductor Materials Analyses
- Solids, Surfaces, Interfaces, and Nanomaterials

Symposium Topics

- *Elemental speciation and speciation sample preparation*
- *Excitation mechanisms and plasma phenomena*
- *Flow injection and fractionation spectrochemical analysis*
- *Glow discharge atomic and mass spectrometry*
- *Inductively coupled plasma atomic and mass spectrometry*
- *Laser ablation and induced breakdown spectrometry*
- *Microwave atomic and mass spectrometry*
- *Micronebulization systems, microplasma systems*
- *Plasma chromatographic detectors, combined systems*
- *Plasma instrumentation, automation, detectors, spectrometers, and software innovations*
- *Sample introduction, transport phenomena, and modeling*
- *Sample preparation, treatment, and automation; high-purity materials, and quality assurance*
- *Spectrochemical chemometrics, AI, and expert systems*
- *Spectroscopic standards, reference materials, and data bases*
- *Stable isotope analyses and applications*

Abstracts and titles for the Workshop on New Plasma Instrumentation (Tuesday, January 16) from manufactures and vendors also will be accepted with the same guidelines as conference presentations. A $00 registration fee is required for Workshop speakers.

Program Outline Example

Monday, January 15, 2024

8:00 Opening and Welcome

1. Sample Introduction and Transport Phenomena

8:05 (PL1) *Plenary Lecture*
9:00 (IL1) *Invited Lecture*
9:30 (IL2) *Invited Lecture*

2. Nanomaterial Analysis and Characterization

1:00 (IL3) *Invited Lecture*
1:30 (IL4) *Invited Lecture*
5:30 (HL1) *Heritage Lecture*
6:30 *Exhibition Opening and Social Mixer*

Tuesday, January 16, 2024

3. Laser Assisted Plasma Spectrochemistry

8:00 (PL2) *Plenary Lecture*
9:00 (IL5) *Invited Lecture*
9:30 (IL6) *Invited Lecture*

4. Laser-Induced Breakdown Spectroscopy

1:00 (IL7) *Invited Lecture*
1:30 (IL8) *Invited Lecture*
3 - 6:30 *Poster Session*
3:15 - 5:15 (WS1) *Workshop* New Plasma Instrumentation
5:30 (HL2) *Heritage Lecture*
6:30 *Social Mixer*

Wednesday, January 17, 2024

5. Fundamentals, Instrumentation, and Mechanisms

8:00 (PL3) *Plenary Lecture*
9:00 (IL9) *Invited Lecture*
9:30 (IL10) *Invited Lecture*

6. Novel Plasma Instrumentation, Advanced Plasma Detectors, and Microplasma Systems

1:00 (IL11) *Invited Lecture*
1:30 (IL12) *Invited Lecture*
3 - 6:30 *Poster Session*
3:15 - 5:15 (WS2) *Workshop* Speciation Methodology
5:30 (HL3) *Heritage Lecture*
6:30 *Social Mixer*

Thursday, January 18, 2024

7. Elemental Speciation, Metallomics

8:00 (PL4) *Plenary Lecture*
9:00 (IL13) *Invited Lecture*
9:30 (IL14) *Invited Lecture*

8. Imaging Plasma Mass Spectrometry and Biodistribution Analysis

1:00 (IL15) *Invited Lecture*

1:30 (IL16) *Invited Lecture*
3 - 6:30 *Poster Session*
3:15 - 5:15 (WS3) *Workshop* Biological, Clinical Analysis
5:30 (HL4) *Heritage Lecture*
7:00 *Conference Dinner*

Friday, January 19, 2024

9. Atmospheric, Environmental, Bioecological Sciences

8:00 (PL5) *Plenary Lecture*
9:00 (IL17) *Invited Lecture*
9:30 (IL18) *Invited Lecture*

10. Stable Isotope and Forensics Analyses

1:00 (IL19) *Invited Lecture*
1:30 (IL20) *Invited Lecture*
3 - 6:30 *Poster Session*
3:15 - 5:15 (WS4) *Workshop* Stable Isotope Methodology
5:30 (HL5) *Heritage Lecture*
6:30 *Social Mixer*

Saturday, January 20, 2024

11. Earth, Marine, and Geological Sciences

8:00 (PL6) *Plenary Lecture*
9:00 (IL21) *Invited Lecture*
9:30 (IL22) *Invited Lecture*

12. Advanced Materials, Surfaces, and Interfaces
Petroleum and Semiconductor Materials

1:00 (HL6) *Heritage Lecture*
2:00 (IL23) *Invited Lecture*
2:30 (IL24) *Invited Lecture*
6:30 *Conference Closing*

Conference Travel and Registration Grants

The Winter Conference sponsor, the ICP Information Newsletter Inc., is a tax-exempt philanthropic organization that will offer Conference Travel and Registration Grants to students and international scientists, who wish to present recent research results at the 2024 Winter Conference. This grant program is supported by fund raising and donations from individuals and corporate sponsors, and no Conference registration fees are used. Tax-deductible gifts for these grants are solicited, and donations can be made with registration (see Registration form) or directly at any time. Travel and Registration Grant rules and application forms can be obtained from the Conference chairman.

Book Travel and Hotel Early

Tucson is a very popular Winter holiday destination, and airline flights, hotels and other reservations often are booked well in advance. We recommend that you make your hotel, travel, and conference arrangements as early as possible to take advantage of early bird rates. For assistance with hotel arrangements at El Conquistador Tucson, contact Mr. Steve Lepow at memeetingplanners@gmail.com. He also has obtained conference discounts for airport shuttles.

Heritage Lectures

Six Heritage Lectures will be presented by distinguished scientists and investigators, who have contributed significantly to the development of plasma spectrochemistry and will address critical development areas in sample introduction, instrumentation, elemental speciation, plasma source mass spectrometry, and novel software and hardware.

The Heritage Lecture series was initiated at the 2010 Winter Conference, and the following Heritage lectures have been presented:

2022 Winter Conference

Rambling Through Plasma Spectrometry for Fundamental, Environmental and Societal Challenges: A Fascinating Journey, Olivier Donard, LCABIE-IPREM, France

The Arsenic Enigma Probed Through Plasma Spectrochemistry, Kevin Francesconi, University of Graz

From ICP Emission to Mass Spectrometry and Isotope Ratio Measurements, Naoki Furuta, Chuo University

Navigating the Twists and Turns of the Evolving Field of Plasma Spectrochemical Analysis as an Academic Scientist, Paul B. Farnsworth, Brigham Young University

An Exploration Geologist's Foray into Plasma Spectrochemistry, Simon Jackson, Geological Survey of Canada

2020 Winter Conference

Being Lucky, Gary M. Hieftje, Indiana University

***Mirabile Dietu*: Isotope Measurements as a Truth Serum**, Michael Ketterer, Northern Arizona University

From Pyramids to Plasma - The Heritage of Analytical Chemistry in Africa, Rob McCrindle, Tshwane University, South Africa

Open Box Before Eating Pizza - A Relevant Perspective, Richard E. Russo, Lawrence Berkeley National Laboratory

From There to Here to Another (There and Back Again), Scott D. Tanner, Canada

2018 Winter Conference

Reflections on Decisions Made: Ultratrace Elemental Analysis, Ralph Sturgeon, National Research Council of Canada

Lifelong Learning, Norbert Jakubowski, BAM - Federal Institute for Materials Research, and Testing Division

Science According to Calvin & Hobbes, David Koppenaal, Pacific Northwest National Laboratory

An Academic Life Exploring the Increasing Complexity of Matter with Atomic Spectrometry, Alfredo Sanz-Medel, University of Oviedo

A Journey in the Life of a Practical Atomic Spectroscopist, Isaac (Joe) Brenner, Brenner Scientific

2016 Winter Conference

Tools of the Trade — From Flow Injection to Laser Ablation, Alan G. Cox and Cameron McLeod, University of Sheffield

The Boundary Conditions for Scientific Research, Kay Niemax, Federal Institute for Materials Research and Testing

49 Years of Atomic Spectroscopy — From Nebulizers to Detectors — Time Marches On, M. Bonner Denton, University of Arizona

Innovative Research on Plasma Spectrochemical Methods for Solving Analytical Problems, José A.C. Broekaert, University of Hamburg

ICP-MS From the Eye of a Beholder Part II, Robert S. Houk, Iowa State University

2014 Winter Conference:

Back to the Future, Barry L. Sharp, Loughborough University

Lasers at Work in Atomic Spectroscopy: A Long Flaming and Sparking Combination of Diagnostic and Analytical Aspects, Nicoló Omenetto, University of Florida

High Power or Low Power; Reflections on a Plasma Spectrochemical Controversy and Some Professional Lessons Learnt, Les Ebdon, University of Bedfordshire

Make Big Plans - Aim High in Hope and Work, Michael J. Collins, CEM Corporation

Observations on Commercial Analytical Instrumentation Development, Andrew T. Zander, Torrance, California

Spectroscopic Imaging: A Spatial Odyssey, Freddy Adams, University of Antwerp

2012 Winter Conference:

The Paradigm Change of the Instrumental Revolution. Leo de Galan, Schiedam, The Netherlands

Scientific Research: Creativity and Discovery. Chris Enke, University of New Mexico

Paradigm Shifts in Analytical Plasma Spectrometry. Gary Horlick, University of Alberta

Inductively Coupled Plasma Mass Spectrometry: A Personal Odyssey, Trials, Tribulations, Problems, and Successes. Henry Longerich, Memorial University of Newfoundland

Flow Injection Analysis -- From Beaker to Microfluidics. Jaromir (Jarda) Ruzicka, University of Hawaii, Manoa

Spectrochromatography Elemental Speciation, Retrospect, Perspective and Prospects. Peter C. Uden, University of Massachusetts, Amherst

2010 Winter Conference:

From Academic Research to Real World Problems (and *Vice Versa*), Jean-Michel Mermet, Tramoyes, France

Over 50 Years of Atomic Spectroscopy, James D. Winefordner, University of Florida, Gainesville

Some Memories of 20 Years Development and Application of ICP Emission Spectrometry, Knut D. Ohls, Erding, Germany

Isotope Ratio Measurements: Highlights, Pitfalls, Frustrations — 40 Years of Experience in the Field, Klaus G. Heumann, Johannes Gutenberg University Mainz

Thirty-Seven Years of Plasma Spectrochemistry at FDA's Elemental Analysis Research/Forensic Chemistry Center, Fred L. Fricke, US Food and Drug Administration

The Glow Discharge: A Splendidly Versatile Source, Willard W. Harrison, University of Florida, Gainesville

Winter Conference Award in Plasma Spectrochemistry

The 2024 Winter Conference Award in Plasma Spectrochemistry, sponsored by Thermo Fisher Scientific, recognizes achievements in conceptualization and development of novel instrumentation as well as the elucidation of fundamental events or processes involved in plasma spectrochemistry. The Award also acknowledges the authorship of significant research papers or books that have had an influential role in new advancements as well as outstanding applications that open new fields of use for plasma spectrochemistry.

At the 2024 Winter Conference two awards will be presented to scientists who have made noteworthy contributions to the field of plasma spectrochemistry as judged by an international selection committee. One award is for a senior scientist, and the second award will be for a young scientist, who will be no older than 45 years at the time the award is announced. Thermo Fisher Scientific invites scientists worldwide to submit their applications for these awards. For information and details, visit www.thermoscientific.com/wpcaward. Documentation can be submitted to wpc.award@thermofisher.com.

Thermo Fisher Scientific will present the awards at the 2024 Winter Conference. In addition to having his/her contributions to the field recognized by the scientific community and the industry, the selected scientists will also receive a $5000 prize, a certificate, and trophy during the award ceremony.

The first award was presented during the 2010 Winter Conference. Awardees have included Don Douglas and Eduardo Bolea-fFernandez (2022), Scott D. Tanner and Gerado Gamez (2020), R. Sam Houk and Jorge Pisonero (2018), Nicoló Omenetto and Steven Ray (2016), Gary M. Hieftje (2014), J. Sabine Becker (2012), and Ramon M. Barnes (2010).

Professional Development Courses

Professional development short courses at introductory and advanced levels and manufacturers' seminars will be offered Friday through Wednsday, January 12 - 17, and Saturday, January 20, 2024. Course details, instructors, and times will be announced shortly.

These courses and seminars have been developed to meet the needs of today's plasma spectrochemistry professional and to offer creative solutions for solving industry challenges, generating cost savings, and expanding skillsets needed to advance personal and professional knowledge *via* the latest technology and best practices. Instructors for each course will share their extensive plasma spectrochemistry expertise in a small group setting. Topics include plasma spectrochemistry analyses, instrumentation, techniques and sample introduction and preparation approaches as illustrated below.

Arsenic and Mercury Speciation in Biological Samples
Plasma Spectrochemical Interferences
Clean Microwave Digestions for Ultra-Trace Analysis
Clinical ICP-MS Analyses
Contamination Control for Trace Element Analysis
Direct Analysis with Ambient Mass Spectrometry
Elemental Impurities: USP <232> and <233>
Elemental Speciation Analysis and Metallomics
Elemental Testing in Toxicology
Elemental and Isotopic ICP-MS Analysis
Environmental Monitoring ICP-MS-Based Isotopic Methods
Environmental Sampling Techniques
Field Flow Fractionation – ICP-MS/
Flow Injection Analysis Techniques
Glow Discharge Atomic and Mass Techniques
High-Resolution ICP-MS
Human Body Fluids and Tissues Analyses
ICP-MS Biodistribution Studies of Nanoparticles
ICP-MS Introduction, Advanced Topics
Interferences Identification and Correction in ICP-MS

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Tucson, Arizona, January 15 – 20, 2024

CONFERENCE PRESENTATION TITLE AND ABSTRACT SUBMISSION FORM

Submission Deadline: July 21, 2023

I (we) plan to submit a paper as a ☐ lecture (15 minutes), ☐ poster, ☐ computer poster, ☐ either.

TITLE

AUTHOR NAME(S) [*give full names of all authors, underline presenting author*]:

COMPLETE POSTAL AND E-MAIL ADDRESS(ES) [*give full address of all authors*]:

Please type a 50-word descriptive abstract, sign below, and return this form by July 21, 2023,
to 2024 Winter Conference, Attention: R. Barnes, ICP Information Newsletter, 18241 Beauty Berry Ct, Lehigh Acres, FL 33972-7525 or PO Box 666, Hadley, MA 01035-0666; fax (239) 674-9431, e-mail wc2024@umass.edu

CLASSIFICATION. Which of the following best describes your contribution?
A. Symposium:
☐ Sample introduction/transport phenomenon, ☐ Nanomaterial analysis, ☐ Elemental speciation, ☐ Chromatography and plasma detectors, ☐ Automation, plasma instrumentation, detector systems, ☐ Artificial intelligence, chemometrics, software, ☐ On-line and remote analysis, ☐ Sample preparation, treatment, ☐ Spectroscopic standards and reference materials, ☐ Excitation mechanisms and plasma phenomena, ☐ Laser-assisted plasma spectrochemistry, laser ablation, laser-induced breakdown spectroscopy, ☐ Glow discharge, ☐ Imaging mass spectroscopy, mass cytometry, ☐ Plasma source mass spectrometry, ☐ Stable isotope analysis, forensics, ☐ Quality assurance
B. Application:
☐ Agriculture/Botany, ☐ Biology, ☐ Chemicals, ☐ Energy, ☐ Environment, ☐ Food, ☐ Geology, ☐ High-purity materials, ☐ Industrial products, ☐ Medicine/Clinical/Forensic, ☐ Metals, ☐ Nanomaterials, ☐ Petroleum, ☐ Semi/superconductor, ☐ Stable isotopes, ☐ Water, ☐ Other _____; ☐ *Workshop on New Plasma Instrumentation*

PUBLICATION. Which of the following best describes your intentions for publication of the proposed paper?
☐ submission to Conference proceeding journal:
☐ *Journal of Analytical Atomic Spectrometry*.
☐ submission to *ICP Information Newsletter*. ☐ submission to another journal. ☐ no plan to submit manuscript.

CERTIFICATION.
I (we) certify that the material to be presented represents original research or development, which at the time of the Conference will previously not have been published or presented in public.
SIGNATURE _____ DATE _____
COMPLETE MAILING ADDRESS (if not included above):

TELEPHONE/FAX/EMAIL:

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Received: Manuscript No. Paper Registration 2024-_____-_____