



***2024 Winter Conference on
Plasma Spectrochemistry***
Tucson, Arizona
January 15 - 20, 2024
El Conquistador Tucson
A Hilton Resort



2024 Winter Conference on Plasma Spectrochemistry
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Dr. Ramon M. Barnes, Conference Chairman



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Plasma Spectrochemistry for Trace Element, Stable Isotope, Elemental Imaging and Speciation Analyses

The 2024 Winter Conference on Plasma Spectrochemistry, 23rd in a series of biennial meetings sponsored by the *ICP Information Newsletter*, features developments in plasma spectrochemical analysis by inductively coupled plasma (ICP), dc plasma (DCP), microwave plasma (MIP), glow discharge (GDL, HCL), and laser sources (LA, LIBS, LAMIS). The meeting will be held Monday, January 15 through Saturday, January 20, 2024, in Tucson, Arizona, (www.visitTucson.org) at the El Conquistador Tucson Resort (www.hiltonelconquistador.com). Professional development short courses at introductory and advanced levels and manufacturers' seminars will be offered Friday through Monday, January 12 - 15. Spectroscopic instrumentation and accessories will be shown during a three-day exhibition from January 16 to 18, and workshops on New Plasma Instrumentation, Clinical ICP-MS, Isotope Analysis, Elemental Imaging and Mass Cytometry, and Elemental Speciation methodology will be presented Tuesday through Friday afternoons.

Objectives and Program

The continued growth in popularity of plasma sources for atomization and excitation in atomic spectroscopy and ionization in mass spectrometry and the need to discuss recent developments of these discharges in spectrochemical analysis stimulated the organization of this meeting. The Conference will bring together international scientists experienced in applications, instrumentation, and theory in an informal setting to examine recent progress in the field. Approximately 400 participants from 20 countries are expected to attend.

Over 200 papers describing applications, fundamentals, and instrumental developments with plasma sources will be presented in lecture and poster sessions by more than 200 authors. Symposia organized and chaired by recognized experts will include the following topics: 1) Sample introduction and transport phenomena; Micronebulization and flow processing spectrochemical analysis; 2) Nanomaterial analysis and characterization; 3) Elemental speciation, metallomics and sample preparation for speciation; 4) Plasma instrumentation, including advanced detectors, chemometrics, expert/smart systems, on-line analysis, microplasmas, software, and remote-system automation; 5) Sample preparation, treatment and automation; 6) Excitation mechanisms, plasma phenomena and modeling; 7) Spectroscopic standards and reference materials, and high-purity materials; 8) Plasma source mass spectrometry; 9) Glow discharge atomic and mass spectrometry; 10) Stable isotope analyses; 11) Laser-assisted plasma spectrometry; 12) Advanced materials bulk and surface characterization, 13) Elemental imaging and mass cytometry, and 14) Novel plasma spectrochemical applications. Six plenary and 34 invited lectures will highlight advances in these areas. Four afternoon poster sessions will feature applications, automation, and new instrumentation. 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. Awards for outstanding young investigators and senior researchers also will be presented. Plenary, invited, and submitted papers will be published in September 2024 after peer review as the official Conference proceedings.

Schedule of Activities

Call for Papers, Preliminary Abstracts Due, Early Bird Registration	Friday, July 21, 2023
Exhibitor Booth Reservation and Pre-Registration Due	Friday, September 22, 2023
Final Abstracts for All Papers Due	Friday, October 20, 2023
Exhibitor Reservation Deadline	Friday, October 20, 2023
Conference Pre-Registration Deadline	Friday, October 20, 2023
Late Pre-Registration Deadline	Friday, December 15, 2023
Hotel Reservation Deadline	Friday, December 22, 2023
2024 Winter Conference Professional Development Courses	Friday - Tuesday, January 12 - 16, 2024
2024 Manufacturers' Seminars	Friday - Monday, January 12 - 15, 2024
2024 Winter Conference on Plasma Spectrochemistry	Monday - Saturday, January 15 - 20, 2024
2024 Instrument Exhibition	Tuesday - Thursday, January 16 - 18, 2024
2024 Special Topic Workshops	Tuesday - Friday, January 16 - 19, 2024
Conference Manuscripts Submission Deadline	February 21, 2024

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Conference Background

THE MEETING

The biennial **Winter Conference on Plasma Spectrochemistry** is sponsored by the ICP Information Newsletter, Inc., a nonprofit, philanthropic research organization located in Hadley, Massachusetts and Lehigh Acres, Florida, and organized by Dr. Ramon Barnes of the University Research Institute for Analytical Chemistry. Previous meetings were held in Arizona, California, Florida, Hawaii, and Puerto Rico (Table). Attendance has grown from 170 in 1980 to more than 600 with worldwide scientific participation representing 30 countries. Technical sessions comprise lectures and posters describing application, fundamental, and instrumentation developments with popular electrical plasma sources. The inductively coupled plasma (ICP), glow discharge sources, microwave induced plasma, direct current plasma, and laser-assisted plasma spectrochemistry are featured. New spectrometric instrumentation, novel sample introduction systems, plasma system automation, sample preparation approaches, elemental speciation and metallomics, spectroscopic standards, quality assurance, new diagnostic methods, and theoretical treatments are highlighted. More than 300 technical papers are presented, and selected papers have been published together as the Conference proceedings in *Spectrochimica Acta, Part B* (1981-1987), *Journal of Analytical Atomic Spectrometry* (1988-2020), and *Journal of Analytical Bioanalytical Chemistry* (1998-2006). The proceedings of the 2024 Winter Conference will appear in these major spectroscopy journals during Fall 2024.

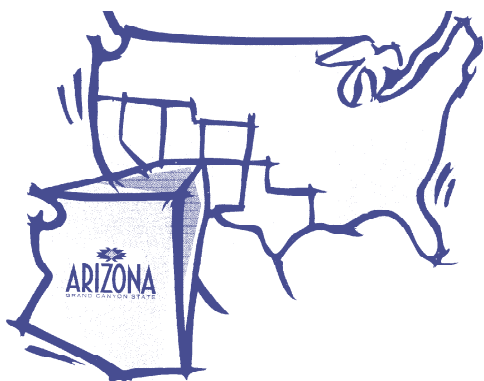
Some in the field consider the Winter Conference one of the technically most significant meetings convened on these topics. Nineteen European Winter Conferences have been held as well (Table). The next European Winter Conference will be in Berlin, Germany (March 2025). Seven Asia-Pacific Winter Conferences have been held in China, Japan, Korea, and Thailand (Table).

THE PEOPLE

The Winter Conference attempts to bring together the major figures in the field of plasma spectrochemistry in a comfortable and informal setting to promote maximum information exchange and conversations. We accomplish this by inviting keynote speakers, employing principals to organize and chair sessions and discussions, and by offering technical short courses taught by experts. Furthermore, experienced and novice analytical chemists seeking to share and expand their experiences in plasma spectrochemistry participate actively. Invited speakers include distinguished international experts and award recipients. Heritage lecturers, workshops, and symposia will be arranged and chaired by many of the leaders in the field.

THE LOCATION

Warm-weather sites are selected for the Winter Conference to promote the



relaxed atmosphere conducive to effective scientific information exchanges. The 2024 Winter Conference will be held at the El Conquistador Tucson, a Hilton Resort, located in Tucson, Arizona, only 20 minutes north of the Tucson International Airport (www.flytucson.com) and conveniently served by major interstate highways. Tucson is 115 miles (184 km) south of Phoenix.

Winter Conference on Plasma Spectrochemistry

Year	City	State
1980	San Juan	Puerto Rico
1982	Orlando	Florida
1984	San Diego	California
1986	Kailua-Kona	Hawaii
1988	San Diego	California
1990	St. Petersburg	Florida
1992	San Diego	California
1994	San Diego	California
1996	Fort Lauderdale	Florida
1998	Scottsdale	Arizona
2000	Fort Lauderdale	Florida
2002	Scottsdale	Arizona
2004	Fort Lauderdale	Florida
2006	Tucson	Arizona
2008	Temecula	California
2010	Fort Myers	Florida
2012	Tucson	Arizona
2014	Amelia Island	Florida
2016	Tucson	Arizona
2018	Amelia Island	Florida
2020	Tucson	Arizona
2022	Tucson	Arizona

European Winter Conference on Plasma Spectrochemistry

Year	City	Country
1985	Leysin	Switzerland
1987	Lyon	France
1989	Reutte	Austria
1991	Dortmund	Germany
1993	Granada	Spain
1995	Cambridge	England
1997	Gent	Belgium
1999	Pau	France
2001	Harjell	Norway
2003	Garmisch-Partenkirchen	Germany
2005	Budapest	Hungary
2007	Taomina	Italy
2009	Graz	Austria
2011	Zaragoza	Spain
2013	Krakow	Poland
2015	Münster	Germany
2017	St Anton	Austria
2019	Pau	France
2023	Ljubljana	Slovenia
2025	Berlin	Germany

Asia-Pacific Winter Conference on Plasma Spectrochemistry

2005	Chiang Mai	Thailand
2006	Bangkok	Thailand
2008	Tsukuba	Japan
2010	Chengdu	China
2012	Jeju	Korea
2015	Xiamen	China
2017	Mastue	Japan