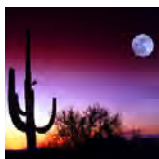




***2020 Winter Conference on  
Plasma Spectrochemistry***  
**Tucson, Arizona**  
**January 13 - 18, 2020**  
**El Conquistador Tucson**  
**A Hilton Resort**



***2020 Winter Conference on Plasma Spectrochemistry***  
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**Dr. Ramon M. Barnes, Conference Chairman**



# **2020 Winter Conference on Plasma Spectrochemistry**

## **Tucson, Arizona, January 13 – 18, 2020**

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

The 2020 Winter Conference on Plasma Spectrochemistry, 21st 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). The meeting will be held Monday, January 13 through Saturday, January 18, 2020, in Tucson, Arizona, ([www.visitTucson.org](http://www.visitTucson.org)) at the El Conquistador Tucson Resort ([www.hiltonelconquistador.com](http://www.hiltonelconquistador.com)). Professional development short courses at introductory and advanced levels and manufacturers' seminars will be offered Friday through Monday, January 10 - 13. Spectroscopic instrumentation and accessories will be shown during a three-day exhibition from January 14 to 16, 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 500 participants from 30 countries are expected to attend.

Over 300 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 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 2020 after peer review as the official Conference proceedings.

## **Schedule of Activities**

Call for Papers, Abstracts Due, Early Bird Registration	Friday, July 12, 2019
Exhibitor Booth Reservation and Pre-Registration Due	Friday, September 20, 2019
Final Abstracts for All Papers Due	Friday, October 25, 2019
Exhibitor Reservation Deadline	Friday, October 25, 2019
Conference Pre-Registration Deadline	Friday, October 25, 2019
Hotel Reservation Deadline	Friday, December 6, 2019
Late Pre-Registration Deadline	Friday, December 13, 2019
2020 Winter Conference Professional Development Courses	Friday - Monday, January 10 - 13, 2020
2020 Manufacturers' Seminars	Friday - Monday, January 10 - 13, 2020
2020 Winter Conference on Plasma Spectrochemistry	Monday - Saturday, January 13 - 18, 2020
2020 Special Topic Workshops	Tuesday - Friday January 14 - 17, 2020
2020 Instrument Exhibition	Tuesday - Thursday, January 14 - 16, 2020
Conference Manuscripts Submission Deadline	February 21, 2020

# Daily Schedule of Activities

<b>Friday, January 10, 2020</b>	7:00 am - 9:00 pm 8:00 am - 11:00 pm	Short Course Registration (Conference Registration) Short Courses (Breakout rooms) Session 1 1 pm - 5 pm Session 2 7 pm - 11 pm
<b>Saturday, January 11</b>	7 am - 4:30, 6:30 pm 8:00 am - 11:00 pm	Short Course Registration (Conference Registration) Short Courses (Breakout rooms) Session 3 8 am - noon Session 4 1 pm - 5 pm Session 5 7 pm - 11 pm
<b>Sunday, January 12</b>	7:30 am - 10 pm 8:00 am - 11:00 pm	Registration (Conference Registration) Short Courses (Breakout rooms) Session 6 8 am - noon Session 7 1 pm - 5 pm Session 8 7 pm - 11 pm
<b>Monday, January 13</b>	6:00 pm - 8:00 pm 7:00 am - 9:00 pm 8:00 am - 5:30 pm 5:30 pm - 6:30 pm 6:30 pm - 8:30 pm	Welcome Social Mixer (Presidio Ballroom Foyer) Registration (Conference Registration) Conference Session (Presidio Ballroom) Heritage Lecture (Presidio Ballroom) Exhibition Opening and Social Mixer (Turquoise Ballroom)
<b>Tuesday, January 14</b>	7:00 pm - 11:00 pm 7:30 am - 8:00 pm 8:00 am - 6:30 pm 9:00 am - 6:30 pm 3:00 pm - 6:30 pm 3:10 pm - 5:30 pm 5:30 pm - 6:30 pm 6:30 pm - 8:00 pm	Session 9 Short Courses (Breakout rooms) Registration (Conference Registration) Conference Session (Presidio Ballroom) Exhibition (Turquoise Ballroom, Foyer) Poster Session (Turquoise Ballroom) Workshop on Plasma Instrumentation (Presidio Ballroom) Heritage Lecture (Presidio Ballroom) Social Mixer (Turquoise Ballroom)
<b>Wednesday, January 15</b>	7:30 am - noon 8:00 am - 6:30 pm 9:00 am - 6:30 pm 3:00 pm - 6:30 pm 3:10 pm - 5:30 pm 5:30 pm - 6:30 pm 6:30 pm - 8:00 pm	Registration (Conference Registration) Conference Session (Presidio Ballroom) Exhibition (Turquoise Ballroom) Poster Session (Turquoise Ballroom) Workshop on Clinical ICP-MS (Presidio Ballroom) Heritage Lecture (Presidio Ballroom) Social Mixer (Turquoise Ballroom)
<b>Thursday, January 16</b>	7:30 am - noon 8:00 am - 6:30 pm 9:00 am - 6:30 pm 3:00 pm - 6:30 pm 3:10 pm - 5:30 pm 5:30 pm - 6:30 pm 6:30 pm - 10:00 pm	Registration (Conference Registration) Conference Session (Presidio Ballroom) Exhibition (Turquoise Ballroom) Poster Session (Turquoise Ballroom) Workshop on Elemental Speciation (Presidio Ballroom) Heritage Lecture (Presidio Ballroom) Conference Dinner (Last Territory Steakhouse)
<b>Friday, January 17</b>	7:30 am - noon 8:00 am - 6:30 pm 3:00 pm - 6:30 pm 3:10 pm - 5:30 pm 5:30 pm - 6:30 pm 6:30 pm - 8:00 pm	Registration (Conference Registration) Conference Session (Presidio Ballroom) Poster Session (Presidio Ballroom Foyer) Workshop on Isotope Analysis (Presidio Ballroom) Heritage Lecture (Presidio Ballroom) Social Mixer (Presidio Ballroom Foyer)
<b>Saturday, January 18</b>	7:30 am - noon 8:00 am - 6:30 pm 8:00 - 9:00 am 8:00 am - noon 1:00 pm - 5:00 pm 3:50 pm - 6:00 pm 6:00 pm	Registration (Conference Registration) Conference Session (Presidio Ballroom) Heritage Lecture (Presidio Ballroom) Session 10 Short Courses (Breakout rooms) Session 11 Short Courses (Breakout rooms) Workshop on Novel Instrumentation (Presidio Ballroom) Conference Closing (Presidio Ballroom)

# 2020 Winter Conference on Plasma Spectrochemistry Tucson, Arizona, January 13 – 18, 2020

## 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, spectroscopic standards, quality assurance, new diagnostic characteristics, 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* (1988-2018), and *Journal of Analytical Bioanalytical Chemistry* (1998-2006). The proceedings of the 2020 Winter Conference will appear in these major spectroscopy journals during Fall 2020.

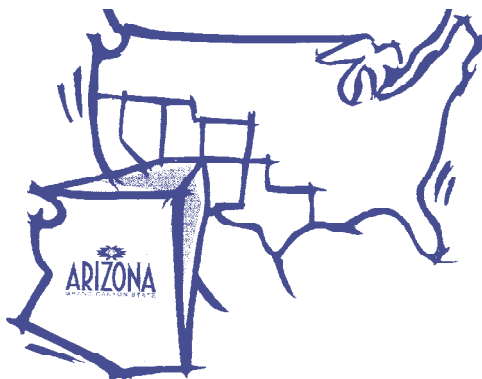
Some in the field consider the Winter Conference one of the technically most significant meetings convened on these topics. Eighteen European Winter Conferences have been held as well (Table). The next European Winter Conference will be in Ljubljana, Slovenia (February 2021). Seven Asia-Pacific Winter 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 2020 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](http://www.flytucson.com)) and conveniently served by major interstate highways. Tucson is 115 miles (184 km) south of Phoenix.



<b>Winter Conference on Plasma Spectrochemistry</b>		
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
<b>European Winter Conference on Plasma Spectrochemistry</b>		
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	Taormina	Italy
2009	Graz	Austria
2011	Zaragoza	Spain
2013	Krakow	Poland
2015	Münster	Germany
2017	St Anton	Austria
2019	Pau	France
2021	Ljubljana	Slovenia
<b>Asia-Pacific Winter Conference on Plasma Spectrochemistry</b>		
Year	City	Country
2005	Chiang Mai	Thailand
2006	Bangkok	Thailand
2008	Tsukuba	Japan
2010	Chengdu	China
2012	Jeju	Korea
2015	Xiamen	China
2017	Mastue	Japan