

# **2006 Winter Conference on Plasma Spectrochemistry**

**Tucson, Arizona, January 8-14, 2006**

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

The 2006 Winter Conference on Plasma Spectrochemistry, fourteenth 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. The meeting will be held Monday, January 9 through Saturday, January 14, 2006, in Tucson, Arizona ([www.visitTucson.org](http://www.visitTucson.org)) at the Hilton Tucson El Conquistador Golf and Tennis Resort ([www.hiltonelconquistador.com](http://www.hiltonelconquistador.com)). Continuing education short courses at introductory and advanced levels and manufacturers' seminars will be offered Friday through Sunday, January 6-8. Spectroscopic instrumentation and accessories will be shown during a three-day exhibition from January 10 to 12, and a Workshop on New Plasma Instrumentation will be presented on Tuesday, Wednesday, and Thursday afternoons. A golf tournament will be held on Sunday, January 8.

### **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 600 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; 2) Micronebulization and flow processing spectrochemical analysis; 3) Elemental speciation and sample preparation for speciation; 4) Plasma instrumentation, including 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, and 11) Laser-assisted plasma spectrometry. Six plenary and 24 invited lectures will highlight advances in these areas. Four afternoon poster sessions will feature applications, automation, and new instrumentation. Six panel discussions will address critical development areas in sample introduction, instrumentation, elemental speciation, plasma source mass spectrometry, and novel software and hardware. Plenary, invited, and submitted papers will be published in Fall 2006 after peer review as the official Conference proceedings.

### **Schedule of Activities**

Call for Papers, Abstracts Due, Early Bird Registration	Friday, July 15, 2005
Exhibitor Booth Reservation and Pre-Registration Due	Friday, September 16, 2005
Final Abstracts for All Paper Due	Friday, October 14, 2005
Exhibitor Reservation Deadline	Friday, October 14, 2005
Conference Pre-Registration Deadline	Friday, October 14, 2005
Hotel Reservation Deadline	Monday, December 5, 2005
Late Pre-Registration Deadline	Friday, December 9, 2005
2006 Winter Conference Short Courses	Friday - Sunday, January 6 - 8, 2006
2006 Manufacturers' Seminars	Friday - Sunday, January 6 - 8, 2006
2006 Winter Conference on Plasma Spectrochemistry	Monday, - Saturday, January 9 - 14, 2006
2006 Workshop on New Plasma Instrumentation	Tuesday - Thursday, January 10 - 12, 2006
2006 Instrument Exhibition	Tuesday - Thursday, January 10 - 12, 2006
Conference Manuscripts Submission Deadline	February 17, 2006

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# 2006 Winter Conference on Plasma Spectrochemistry Tucson, Arizona, January 8 – 14, 2006

## Conference Background

### THE MEETING

The **Winter Conference on Plasma Spectrochemistry** is sponsored biennially by the ICP Information Newsletter, Inc., a nonprofit, philanthropic research organization located in Hadley, Massachusetts, and organized by Dr. Ramon Barnes of the University Research Institute for Analytical Chemistry. Previous meetings were held in San Juan, Puerto Rico (1980); Orlando, Florida (1982); San Diego, California (1984, 1988, 1992, 1994); Kailua-Kona, Hawaii (1986), St. Petersburg, Florida (1990), Fort Lauderdale, Florida (1996, 2000, 2004), and Scottsdale, Arizona (1998, 2002). Attendance has grown from 170 in 1980 to more than 600 with world-wide 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 325 technical papers are presented, and selected papers have been published together as the Conference proceedings in *Spectrochimica Acta, Part B* (1981, 1983, 1985, and 1987), *Journal of Analytical Atomic Spectrometry* (1988, 1990, 1992, 1994, 1996, 1998, 2000, 2002, 2004), and *Journal of Analytical Bioanalytical Chemistry* (1998, 2000, 2002, 2004). The proceedings of the 2006 Winter Conference will appear in these major spectroscopy journals during Fall 2006.

Some in the field consider the Winter Conference one of the technically most significant meetings convened on these topics. Eleven European Winter Conferences have been held as well in Leysin, Switzerland (1985), Lyon, France (1987), Reutte, Austria (1989), Dortmund, Germany (1991), Granada, Spain (1993), Cambridge, England (1995), Gent, Belgium (1997), Pau, France (1999), Lillehammer, Norway (2001), Garmisch-Partenkirchen, Germany (2003), and Budapest, Hungary (2005). The 2007 meeting is planned for Taormina, Italy in February 2007. The first Asia-Pacific Winter Conference was held in Chiang Mai, Thailand during April 2005.

### THE PEOPLE

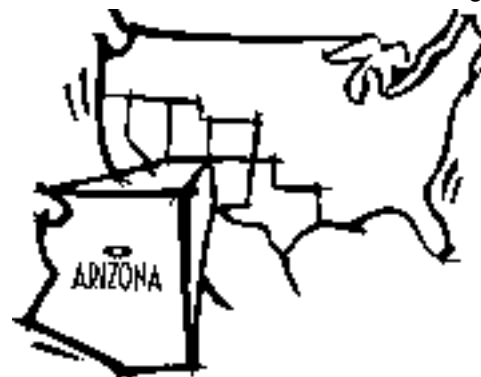
The Winter Conference attempts to bring together the major figures in the field of plasma spectrochemistry in a comfortable and informal setting to promote maximum information exchange and conversations. We accomplish this by inviting keynote speakers, employing principals to organize and chair sessions and panel 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. Panel discussions, 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 2006 Winter Conference will be held at the Hilton Tucson El Conquistador Golf and Tennis Resort located in Tucson, Arizona, only 20 minutes north of the Tucson International Airport ([www.tucsonairport.org](http://www.tucsonairport.org)) and conveniently served by major interstate highways. Tucson is 115 miles (184 km) south of Phoenix.

#### **Tucson — The Beginning of a Rich Western Culture ([www.ci.tucson.az.us](http://www.ci.tucson.az.us), [www.visitTucson.org](http://www.visitTucson.org))**

With its mixed cultural heritage and international population, and with the world's most amazing saguaro cactus forest and the most luxurious man-made spas, Tucson is a celebration for the senses and a visitor's dream. Spanish, Mexican, and Native American influences are resplendent throughout the City. Though Tucson is known for its colorful and creative culture, it's loved for its beautiful resorts and guest ranches. Tucson is located in south-central Arizona along the banks of the Santa Cruz River where Interstates 10 and 19 meet. It is situated in a high desert valley surrounded by four mountain ranges: the Santa Catalinas to the north, the Rincons to the east, the Santa Ritas to the south and the Tucsons to the west. Tucson has more sunshine than any other city in the United States, about 350 days each year, and low year-round humidity makes high temperatures comfortable. Winter (November-March) temperatures average highs of 65°F (18°C) and an average low of 38°F (4°C) (<http://www.wunderground.com/US/AZ/Tucson.html>).





	FAHRENHEIT		CELSIUS		HUMIDITY AT MAX TEMP	RAINFALL IN INCHES
	MAX	MIN	MAX	MIN		
JANUARY	65	37	18	4	33%	.89
FEBRUARY	69	40	20	5	27	.84
MARCH	74	43	23	7	23	.76
APRIL	82	50	27	10	16	.39
MAY	90	57	32	14	13	.18
JUNE	100	67	38	20	13	.27
JULY	101	74	37	23	27	2.04
AUGUST	98	72	36	22	33	2.13
SEPTEMBER	95	67	34	20	26	1.16
OCTOBER	86	55	29	14	25	.75
NOVEMBER	74	44	23	8	28	.77
DECEMBER	66	38	18	4	35	.98
AVERAGE	83	54	28	13	25%	11.16 YEARLY



**Hilton Tucson El Conquistador Golf & Tennis Resort ([www.HiltonElConquistador.com](http://www.HiltonElConquistador.com))**

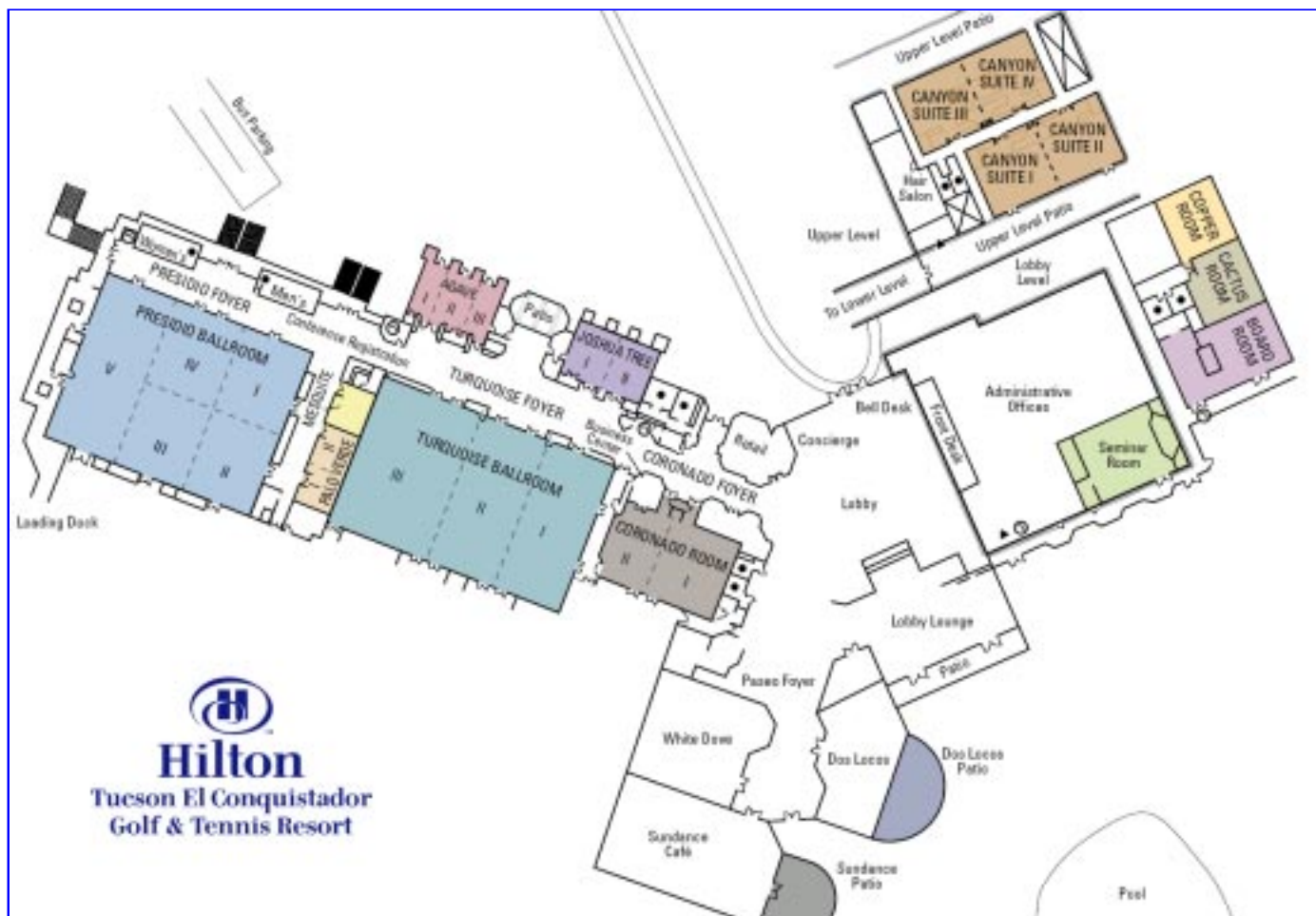
A luxury destination resort just northwest of Tucson, the **Hilton Tucson El Conquistador Golf & Tennis Resort** is set amidst 500 acres in the foothills of the Santa Catalina Mountains. This beautiful 428-room resort is ideal for conferences or anyone seeking a recreational paradise. The granite cliffs of the Pusch Ridge rise approximately 2,000 feet above the resort, providing breathtaking views. Recreationally, the resort offers 45 holes of championship golf, 31 lighted tennis courts, four sparkling pools, spa therapy, and horseback riding.



The venue, atmosphere and service bring out the best in any event. The El Conquistador offers the most resort meeting space in Southern Arizona - 28 event spaces, plus outdoor venues totaling over 100,000 ft<sup>2</sup>. Tucson's fabulous weather combine for a perfect event. The Presidio Ballroom will accommodate 780 schoolroom style, and the adjacent Turquoise Ballroom exhibition area (11,280 ft<sup>2</sup> = 120 ft by 94 ft) and Foyer will house up to 50 exhibition booths and 70 poster boards. In total this provides uncrowded space for the meeting and exhibition, posters, receptions, and conversations.

The Hilton Tucson El Conquistador is minutes away from the airport, downtown, the University of Arizona, and almost every place in Tucson. **From Tucson International Airport** ([www.tucsonairport.org](http://www.tucsonairport.org)) follow I-10 West to Ina Road (Exit 248). Turn right on Ina Rd. and travel east for about 5.3 miles to Oracle Road. Turn left onto Oracle and continue 2.5 miles to El Conquistador Way. Turn right and the Resort will be on the right. **From Phoenix** follow I-10 East to Ina Road (Exit 248). Turn left on Ina Rd. and travel east for about 5.3 miles to Oracle Road. Turn left onto Oracle and continue 2.5 miles to El Conquistador Way. Turn right and the Resort will be on the right.





## **THE SCHEDULE**

The 2006 Winter Conference will include activities beginning on Sunday, January 8, and continuing through Saturday, January 14. The Conference will be preceded on Friday, January 6, through Sunday, January 8, by 60 fee-based, professional short-courses, each lasting four hours and presented by experts on specific topics. Simultaneously, exhibitors and other providers of plasma spectrochemical instruments, supplies, and related products will offer free seminars, training programs, or user's meetings. The Conference begins with a social mixer Sunday evening, January 8, and convenes daily at 8:00 am until 6:30 pm. Lectures, posters, and panel discussions will be presented. A social gathering is planned for each evening beginning at 5 (to 6:30 pm), and a Conference dinner is scheduled for Thursday evening, January 12 at the Hilton Tucson El Conquistador.

### **INSTRUMENT EXHIBITION**

The three-day exhibition will open on Monday evening, January 9, with a reception in the Turquoise Ballroom exhibition area. Spectroscopic instrumentation and chemicals, glassware, publications, and software supporting plasma spectroscopy will be displayed by approximately 40 companies and organizations. Typically, new plasma spectrochemical instrumentation is previewed here.

### **MANUFACTURER'S SEMINAR PROGRAM FOR PLASMA INSTRUMENTATION**

During the weekend Short Course program, Friday through Sunday, January 6-8, exhibitors and/or producers or distributors of plasma spectrochemical instrument, supplies, and related products will present four-hour seminars, training/education programs, or user's meetings. This program is free, although registration will be required. New or advanced customer training, product introduction and/or demonstrations, product line descriptions, or user's group meetings and discussions are included. These seminars will be presented in parallel with the fee-based short courses.

### **WORKSHOP ON NEW PLASMA INSTRUMENTATION**

A three-day Workshop on New Plasma Instrumentation will be held Tuesday through Thursday afternoons, January 10-12, from 3:15 to 5:15 pm, with 18 vendor presentations on plasma instrumentation, accessories, and sample preparation. Instrument manufacturers will describe new plasma source developments, and exhibitors will discuss sample introduction, alternative sources, and sample preparation. The afternoon program will parallel the exhibition and poster sessions. The Workshop program will be divided into three main sections: plasma source (ICP) atomic emission spectroscopy (Tuesday), plasma source (ICP) mass spectrometry (Wednesday), and plasma accessories (e.g.,

chromatograph interface, electrothermal vaporizer, laser and spark ablation, special nebulizers, preconcentration and sample introduction equipment, special adapter kits), standards and sample preparation (Thursday). Representatives from companies and/or exhibitors will present brief technical descriptions and discussions of their new products and design philosophy.

## ACTIVITIES AND ATTRACTIONS

### Golf

Tucson has long been a favorite golfing getaway for celebrities and others drawn to the city's fair weather, casual lifestyle and secluded setting. No longer a well-kept secret retreat, Tucson is quickly gaining a reputation as a premier golf destination among enthusiasts worldwide and gaining steam with meeting planners. In fact, *Conde Nast Traveler Magazine* and *Golf Digest* have both recognized Tucson courses among the best in the world. The city is home to dozens of resorts, clubs and public courses that challenge every level of play. Of these, players can choose from a range of traditional courses to desert target layouts. The majority of courses are accessible to visitors. With more than 40 courses to choose from, golf is Tucson's number-one sports attraction. Winter's fair skies make January through April the prime season. The Conference golf tournament is planned for Sunday morning, January 8. Contact Ken Fredeen (kjfredeen@yahoo.com) for details and sign-up.



### Arizona — The Grand Canyon State ([www.arizonaguide.com/Tucson.asp](http://www.arizonaguide.com/Tucson.asp); [www.arizonascenicroads.com](http://www.arizonascenicroads.com))

Arizona is a wondrous place, both geographically and culturally diverse, rich with tradition and yet young. The state will not be 100 years old until Valentine's Day of 2012. Few travel destinations offer so great a change of scenery in so little time. Begin your visit with a flight into Phoenix, the capital city of Arizona and one of the most easily accessible cities in the nation with direct flights from some 84 cities. Within a four hour drive any direction, you'll find yourself in completely different surroundings. Certain times of the year you could actually ski twice in one day – on both snow and water.



Don't be in a rush to leave Phoenix however, as you will find more to see and experience than you can imagine. What is your pleasure? Numerous tour operators offer a wide variety of desert sight-seeing adventures, including beautiful sunsets and moonlight magic. While enjoying the desert, add extra excitement with river rafting, paintball games, target shooting, hot air balloon rides, soaring lessons or sky diving. If you like speed, try driving lessons at a world class driving school or enjoy a NASCAR or drag race.

Arizona boasts vast open spaces and scenic beauty from the high lush desert area south of Tucson to the magnificent Grand Canyon area. Ranges of mountains rise from the desert floor throughout the Sonoran desert region. As you travel northward, pine covered mountain slopes lead upward to snow capped peaks in Flagstaff and in the White Mountain area which extends along the eastern state line. In areas like Sedona and Monument Valley, reddish rock formations composed of layers of volcanic rock, sandstone, limestone and shale, give the landscape striking colors and unique formations. Rock hounds find the state rich with gems and minerals created by millions of years of geological activity.

Here the night skies are some of the darkest in the country, and amateur and professional and stargazers enjoy hundreds of cloudless nights. The far reaches of the galaxy can be explored in the state's numerous observatories, planetariums and through telescopes on patios and balconies of the resorts.

Perhaps no better location in the state illustrates the extreme variety of geography in Arizona than a roadway on the northeast side of Tucson, the Sky Island Parkway or the Catalina Highway. A drive on this road takes travelers through five "life zones," beginning in the desert and ending above 9,000 feet in a conifer forest at the top of Mount Lemmon. This single, 27-mile drive passes through as many life zones as a drive from the Mexican to the Canadian border.

For those who wish to experience the Old West beyond cowboy cookouts and camp fires, visit the Territorial Prison in Yuma or take a trip to the OK Corral in Tombstone followed by a stop in Bisbee. Prescott, the original territorial capital, is built around the traditional courthouse town square and buildings in the area are carefully preserved. Several of the "Whiskey Row" bars still use the old hand-carved, ornamented back bars of the late 1800's.

Arizona is home to 22 different Native American tribes with the most reservation land in the United States. Various cultural centers and museums display beautiful hand-crafted pottery, baskets, jewelry, blankets and crafts from our numerous tribes. From ancient cliff dwellings and ruins to thriving casinos, Native American culture plays a leading role in Arizona. Over the years, Arizona has developed a worldwide reputation as a destination that showcases a rich history and a variety of cultural heritages. The state's 22 Indian nations provide visitors with a glimpse of Native American cultures and an opportunity to explore one-of-a-kind monuments and ancient dwellings.

Hopi is the only puebloan tribe of Arizona. Located in Northeastern Arizona, Hopi offers tours of the majestic mesas, where families continue to reside within ancient family dwellings. The visitor is introduced to the vast beauty of the land, its people, culture and commerce. Highly skilled as artists, the Hopi offer quality, hand crafted pottery, katsina doll carvings, hand painted pictures, silver overlay jewelry and basketry. For a complete listing of tour guides and



artists, visit [hopibiz.com](http://hopibiz.com). This website offers a range of information for the visitor.

The ancient lands of the Hualapai Tribe include incredible panoramic vistas unequalled in all of Arizona with pristine wilderness untouched by the 21st century world. With the tribe's Grand Canyon West Tour, experience first-hand the beauty of the Grand Canyon from sunrise to sunset on a journey of a lifetime. Inaccessible to outsiders, this tour gives the opportunity to discover and survey the ancient lands of the Hualapai Tribe by hiking the trails of long ago, viewing the canyon walls from a helicopter, taking a ride on the Colorado River, whitewater rafting or just taking some time to soak in the natural beauty. The Gila Indian Center, a nonprofit tribal corporation of the Gila River Indian Community, features authentic American Indian crafts, a free historical museum and full-service restaurant with some of the best Indian fry bread around. At Nohwike' Bagowa, the White Mountain Apache Tribe's Cultural Center and Museum, visitors may explore four miles of trails, visit exhibits in an 1871 log cabin, walk down Officers' Row, and take a short drive to Kinishba Ruins National Historic Landmark. With the Yavapai-Apache Nation's Native Visions, you'll journey into history with those who know best. You'll view early Native American dwellings including Montezuma Castle and the majestic red cliffs indigenous to their land. Fort McDowell Yavapai Nation is presenting Native Trails at Scottsdale's Culture Quest beginning January 6, 2005. The program will debut its third season of free noontime festivals dedicated to exploring the rich and varied cultures of Native America.

The Mexican cultural influence can be seen throughout the state, evidenced by missions and presidios established by Franciscan monks in the early 1700's. Hispanic names abound for shopping centers, residential developments, streets, schools and parks. The language, food, music, art, architecture, entertainment and traditions of Latin peoples are deeply infused in the culture of the state.

The grandeur of Arizona is beyond description in words, it must be experienced first hand – from magnificent sunrise to breathtaking sunset and into star studded night skies. Come see for yourself. We know you will return bringing with you a host of your colleagues, friends and family as there is no place like Arizona.



#### **Tucson ([www.ci.tucson.az.us](http://www.ci.tucson.az.us), [www.visitTucson.org](http://www.visitTucson.org))**

"Tucson" is derived from the Tohono O'Odham Native American word *Stjukshon* (pronounced Chuk-son) for "spring at the foot of black mountain". The "black mountain" is just southwest of downtown, which is known as "A" Mountain, named for its white-rock letter "A" painted by University of Arizona students since 1915. UA was founded in 1885, and today it serves over 35,000 students. The "spring" was the Santa Cruz River, the remains of which is a sweeping sand "wash" where water still flows beneath the sand and rocks of the riverbed. Present day Tucson was founded by an Irishman (Hugh O'Connor), who served in the Spanish Army. In 1775 he established the Presidio of San Augustin de Tucson in what is now the heart of downtown Tucson in the historic El Presidio neighborhood. Tucson is the oldest continually inhabited settlement in the United States, and evidence of a settlement dated back to the Cienega phase (800 B.C. to 150 A.D. was uncovered in 1997. Five flags have flown over Tucson (*i.e.*, Spain, Mexico, U.S. Confederacy, the Union, and the USA). Tucson joined the United States with the Gadsden Purchase in June 1854. Tucson's population has grown from 3,200 in 1869 to 800,000 today.

Encompassing a 500-square-mile valley, Tucson is Arizona's second-largest city and offers every amenity imaginable. Surrounded by five mountain ranges, Tucson is a perfect hub for nature lovers who are set on exploring Arizona's varied terrain. Easily accessible by the Tucson International Airport, the city is served by major airlines with connections to U.S. and international cities. Nonstop air service is available to 17 major destinations throughout the nation and to Mexico. Shuttle service is available to and from Phoenix Sky Harbor International Airport (a 90-minute drive). **Tucson International Airport** ([www.tucsonairport.org](http://www.tucsonairport.org)) is quickly adding service throughout the world. The airport is served by 11 major airlines with connections to 86 major U.S. cities and 36 international destinations (including 18 cities in Mexico), with a connecting time of 90 minutes or less. The airport is conveniently located, and is close to both the foothill resorts and downtown. Ground transportation is equally convenient to Tucson, with Phoenix a mere two-hour road trip away.



#### **Activities and Attractions (see <http://www.tucsonattractions.com>)**

Tucson is also a haven for hikers and cyclists. Surrounded by five mountain ranges with hundreds of trails, travelers can hike year round – the mild winters allow hiking in the lower elevations and in summer the trails of the high mountains are perfect getaways. Tucson is the gateway to Saguaro National Park, which is located on both sides of the city. **Saguaro National Park** offers numerous trails for pedestrians and peddlers that wind between large saguaros. The Sonoran Desert is the only place in the world where the giant saguaro cactus grows. Home to the world's most recognizable cactus, Saguaro National Park showcases the majesty of the saguaro. Forests of huge saguaro cactuses populate the park, and visitors can choose from more than 150 miles of hiking trails. Hiking is possible even in summer in the early mornings and late afternoons, or, for a change of pace, Mt. Lemmon offers cool summer hiking through pine-tree forests. One of Tucson's most unique features is nearby Mt. Lemmon, which boasts, of all things, a ski resort. Located in the Santa Catalina Mountains, it is the southernmost ski resort in the nation. In summer, Mt. Lemmon attracts

hikers to its cool elevations. Spreading out from the Santa Cruz River Valley, Tucson's landscape spans cactus-studded deserts, subterranean habitat and, at times, snow-capped mountains. Most of the bike shops in town rent mountain bikes, including for groups. If sightseeing is a favorite activity, then hot air balloons are a favored mode of transportation. Companies offer a 60 to 90 minute journey, combining low-level views of the beautiful desert landscape, javelina, deer, and red-tailed hawks with spectacular panoramas from higher elevations. For those preferring to stay on the ground, horses and Jeeps carry passengers throughout the desert and foothills.

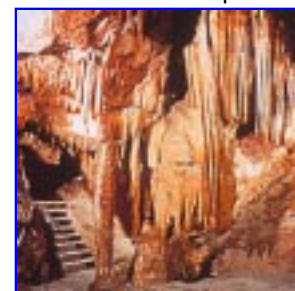


Visited by well over a million tourists a year, lush **Sabino Canyon**, the largest of the canyons that drain the Catalina Mountains on the north side of Tucson, offers an excellent combination tour and hike. Starting from the parking area, trams carry passengers uphill on a winding 4.5-mile road that crisscrosses Sabino Creek, narrating the trip on the way. Many people disembark at the top and hike back, wading through the seasonally running creek and examining the vegetation and wildlife close up. Closed to private vehicles, the recreation area provides a glimpse of desert beauty.

For an even closer look at the native flora and fauna, visit the **Arizona-Sonora Desert Museum** on the west side of town. Museum workers have built natural-looking enclosures for housing, trying to emulate the native conditions these animals might find in the desert. Mountain lions, bighorn sheep, bears and prairie dogs are some of the desert denizens found here. **Tucson Botanical Gardens** is another excellent display of desert habitat. To the north, **Tohono Chul Park** is a 48-acre oasis featuring many indigenous plants, as well as a selection of plants that were farmed by the prehistoric residents or that were introduced by the Spanish and American settlers.

Established in 1937, the **Amerind Foundation and Art Gallery** is a non-profit research institution devoted to the study, preservation, and interpretation of prehistoric and historic Native American cultures. Housed in beautiful Spanish Colonial Revival style buildings, the Amerind Museum contains one of the finest collections of Indian artifacts in the world.

Located on the east side of Tucson is **Colossal Cave Mountain Park**. This interesting, crystal-filled cave has been used for over a thousand years by Native Americans. Walk and scramble through the cave by electric light or candlelight, or take horseback rides around the 2,000-acre park, visiting the historic La Posta Quemada Ranch. At least 11 species of bats call the cave home.



Tucson is a hotbed of astronomical activity, with **Kitt Peak National Observatory**, just over an hour's drive southwest of Tucson, is the showpiece. An 18-story-high observatory and the world's largest solar telescope are just some of the toys maintained here. Tours are given both night and day, but the nighttime viewing is restricted and only by reservation. The **Whipple Observatory** on Mt. Hopkins, south of Tucson, is operated by the Smithsonian Institution. The world's fourth largest multiple-mirror telescope, located on the summit, is a joint project with the University of Arizona. The U of A's on-campus **Flandrau Science Center and Planetarium** houses another 16-inch telescope in an outdoor observatory, as well as hands-on exhibits.

Space exploration is also the theme of several museums in and around Tucson. The **Pima Air & Space Museum**, with its abundant meeting space and huge collection of aircraft both indoors and out, offers self-guided and group tours, both to the Museum and to **Davis-Monthan Air Force Base**. The **Titan Missile Museum** south of town preserves the only Titan II missile left intact, still in its silo and relegated to history. Combination tickets are available for all three tours.

Other historic buildings and museums abound in Tucson. The most visited is the "White Dove of the Desert," the **Mission San Xavier del Bac**. Built by Tohono O'odham Indians under the direction of Spanish priests, the mission was started in 1700. A \$2 million restoration was completed in 1997 resulting in an unbelievably beautiful and ornate edifice, a must-see on any Tucson visit. The chapel is still used for Mass, and votive candles still flicker in silent vigil.

Downtown Tucson boasts many historic buildings, from the old houses of the **Presidio District** to the colorful Barrio houses, some of which have been converted into office buildings. Archaeologists have uncovered artifacts in the downtown area dating back 4,000 years, and current renovations are underway. The Fox Theater, an art deco movie house, underwent extensive renovations in 2004.

Even further back in time, before the Spanish explorers, prehistoric residents left their art on rock canvases. The petroglyphs they chiseled can be seen today in places like Signal Hill at **Saguaro National Park**. Today's Tucson carries on these artistic traditions. Hundreds of outdoor murals grace buildings throughout the city, one of them on the entrance wall at the **Tucson Museum of Art**.

Around 150 art galleries make their home in Tucson, many near the downtown **Arts District**. Established in 1986, the District includes artists' studios and cafés, some of which sell paintings along with a steaming cup of coffee. The Tucson Arts District Partnership sponsors Thursday night ArtWalks from September through May that include a number of these showrooms and the historic **Temple of Music and Art**. Venues for the performing arts also abound. A number of dance and theater groups offer performances year-round, both indoors and out. Some of the more notable are the **Tucson Pops and Symphony Orchestras, Arizona Opera Company, Ballet Folklorico Arizona** and **Arizona Theater Company**. The Tucson Gem, Mineral and Fossil Showcase is the world's largest gathering of gem show exhibitors and buyers, and the shows are held annually in January and February. The 52nd Annual Tucson Gem &

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Mineral Show is scheduled for February 7 - 12, 2006.

## Shopping

Finding a memento of the trip to Tucson is also an exciting adventure for travelers. Serious shoppers will delight in the broad inventory of practical and whimsical gift items to be found at many homegrown specialty shops and major national retailers. Numerous smaller shopping opportunities are scattered in and around town, offering an inventory of things Southwestern from museum-quality Native American textiles and jewelry to Mexican folk crafts and cowboy memorabilia. On a larger scale, explore five major malls featuring hundreds of well-known stores and restaurants.

## Southern Arizona

Replete with natural wonders, history and culture, Southern Arizona has been romancing visitors with its Old West charm for decades. The region's most populous city is Tucson, thriving with plush golf courses and resorts, flourishing art scenes and historical heritage. With Old West towns and guest ranches, the region is a perfect Arizona getaway for visitors who want to relive the past. Or, for those with an eye to the future, the region is also host to astronomy centers and the futuristic experiment of Biosphere 2. A number of Southern Arizona's rich riparian areas and rugged mountain ranges are also ranked as some of the world's best birding sites.

Venturing south of Tucson, visitors can go back in time, underground or into another country—all within a two-hour drive from "the Old Pueblo". Comprising Cochise and Santa Cruz counties, southern Arizona offers artist colonies, golf resorts, authentic 19th-century mining and Old West towns including Tubac, Nogales, Patagonia, Sonoita, Elgin, Benson, Safford, Willcox, Sierra Vista, Douglas, Tombstone, and Bisbee, and prime birding spots that draw more hummingbirds, cranes and other species than just about anywhere in North America. All this plus stunning geologic formations at Chiricahua National Monument and Kartchner Caverns State Park make the region renowned for a wealth of sightseeing options and entertaining experiences.

Spain and Mexico's cultural influences in southern Arizona are abundantly evident in places like Tubac, which was established in 1752 as a Spanish presidio, or fort. Today, artists are a more likely sight in this town than a military garrison would be. Some 80 unique shops and galleries populate the village, many offering handmade crafts, original works of art and exquisite imports. The annual festival in February brings artists from across the country. Its historic roots remain, though, preserved at the Tubac Presidio State Historic Park, where the award-winning volunteers, "Los Tubaqueños," demonstrate life as it was in 18th-century Arizona.

Visitors to Tucson are only a few hours away from the fascinating history of Southern Arizona in which lies in the mystique of the Wild West. Much of the story was written in the mining towns and ranches of the Arizona frontier. Of the rough-and-tumble towns that sprang up during the rush for mineral wealth after Arizona was proclaimed a territory, **Tombstone** was by far the most notorious. Once considerably larger than Tucson, Tombstone is quiet these days, but visitors can watch replays of the gunfights that used to break out along Allen Street. The best known of them took place at the OK Corral, now a popular tourist attraction, as is Boot Hill, the town's once-busy boneyard. **Bisbee**, another Old West town, has traded the rough-and-tumble of Brewery Gulch for the elegance of the arts. Though they still take underground tours of the Queen Mine, most visitors come to browse the galleries and collections that are housed in the historic buildings. **Sierra Vista**, a growing meeting destination in its own right, has an Old West past, also, being located next to historic Ft. Huachuca. Built in 1877 to aid in the Indian Wars, Ft. Huachuca's original Victorian-style officer's quarters are still in use. A museum showcases military paraphernalia, and the Buffalo Soldier's Memorial – a tribute to African-American soldiers who fought on the frontier – was established here also. Sierra Vista is better known these days as "The Hummingbird Capital of the U.S." owing to its location near the Huachuca Mountains. Ramsey Canyon Preserve, owned and operated by The Nature Conservancy, attracts birders from all over the world. To the east, the San Pedro Riparian National Conservation Area protects over 36 miles of the San Pedro River and is home to more than 350 species of birds.

**Kartchner Caverns State Park** in Benson is the new star of the Southwest, an hour's drive from Tucson. This limestone cave opened as a state park in November 1999 and is the only living cave in the world open to visitors. New for 2004, the "Big Room" is now open, adding 225 additional tours each day.

Just to the northwest, **Patagonia** and **Elgin** are the center of a burgeoning wine-making region. The limestone terrain is ideal for growing grapes, and many compare it to France. Now a thriving artists' community, the unique community of **Tubac** offers over 100 shops, studios and galleries. It is known for "Where Art and History Meet." The **Tubac Center of the Arts** is a place for showcasing and encouraging the arts. The center includes an exhibit space, a performance stage, gift shop, art library and Members' Gallery. As for history, **Tubac Presidio State Historic Park** is the site of the remains of a Spanish fort, and exhibits displays of early frontier life. **Tumacacori National Historic Park** preserves a mission established by Spanish priests.

Interstate 19 from Tucson to Nogales, Mexico is the only one of its kind in the United States – it is signed in metric owing to a failed attempt of the government to convert U.S. roads to the metric system. The short drive to the border town of Nogales offers an exciting day of shopping and sightseeing. Something is always going on in the bustling bazaars in Old Mexico, and veteran shoppers relish the challenge of negotiating bargains. Southern Arizona is a journey into the past, with several surprises for the present.

Reprinted in part from [http://www.azmeetings.com/tucson\\_meetings.html](http://www.azmeetings.com/tucson_meetings.html); [www.arizonaguide.com/Tucson.asp](http://www.arizonaguide.com/Tucson.asp); [www.arizonascenicroads.com](http://www.arizonascenicroads.com); [http://www.desertusa.com/Cities/az/az\\_tucson.html](http://www.desertusa.com/Cities/az/az_tucson.html).





# 2006 Winter Conference on Plasma Spectrochemistry

Tucson, Arizona, January 8 – 14, 2006

## CONFERENCE PRESENTATION TITLE AND ABSTRACT SUBMISSION FORM

*Submission Deadline: July 15, 2005*

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 15, 2005, to 2006 Winter Conference, Attention: R. Barnes, ICP Information Newsletter, P.O. Box 666, Hadley, MA 01035-0666, or 85 N. Whitney St., Amherst, MA 01002-1869; fax (413) 256-3746, e-mail [wc2006@chem.umass.edu](mailto:wc2006@chem.umass.edu)**

**CLASSIFICATION.** Which of the following best describes your paper?

*A. Symposium:*

Sample introduction/transport phenomenon,  Micronebulizers, flow processing,  Elemental speciation,  Chromatography and plasma detectors,  Automation and plasma instrumentation,  Artificial intelligence, Chemometrics, Software,  On-line and remote analysis,  Sample preparation and treatment,  Spectroscopic standards and reference materials,  Excitation mechanisms and plasma phenomena,  Laser-assisted plasma spectrochemistry,  Glow discharge,  Teaching spectroscopy,  Plasma source mass spectrometry,  Stable isotope analysis,  Quality assurance.

*B. Application:*

Agriculture/Botany,  Biology,  Chemicals,  Energy,  Environment,  Food,  Geology,  High-purity materials,  Industrial products,  Medicine/Clinical/Forensic,  Metals,  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:

*Analytical and Bioanalytical Chemistry* or  *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:**

Received: \_\_\_\_\_ Manuscript No. \_\_\_\_\_ Paper **9** Registration 2006-\_\_\_\_\_-\_\_\_\_\_



# 2006 Winter Conference on Plasma Spectrochemistry

*Tucson, Arizona, January 8 - 14, 2006*

## HOTEL RESERVATION FORM

### **Hilton Tucson El Conquistador Golf & Tennis Resort**

10000 North Oracle Road, Tucson, AZ 85737

**PLEASE RETURN THIS FORM BY MAIL/FAX/EMAIL WITH PAYMENT TO:  
Ray Beam, 2330 W. Belmont Ave. Suite #2, Phoenix, AZ 85021 USA  
Telephone 602-481-9909, FAX 603-441-2878, E-mail rbeamaz@yahoo.com**

**ARRIVAL DATE** \_\_\_\_\_ **CHECKOUT DATE** \_\_\_\_\_

The Hilton Tucson El Conquistador Golf & Tennis Resort conference room rate is \$109.00 per night (single, double, triple, quad occupancy) plus 10.5% tax (\$11.45) for a total of \$120.45. An \$8.00 daily resort fee will be added to your bill. A \$2.00 daily housekeeping gratuity and a \$10.00 (in and out) bellman gratuity are suggested at your discretion. A one night deposit will be charged to your credit card upon receipt of your reservation form, or you may forward a check in U.S. FUNDS DRAWN ON A U.S BANK made payable to M & E Meeting Planners. An added processing fee of \$30.00 will apply if your reservation is received or revised after December 5, 2005. Deposit minus any late fee is refundable if a written cancellation is received on or before 10 days prior to your arrival date.

**CONFERENCE RATE CANNOT BE GUARANTEED FOR RESERVATIONS RECEIVED  
AFTER DECEMBER 10.**

**PLEASE PRINT CLEARLY AND COMPLETE ONE (1) RESERVATION FORM PER ROOM**

**ATTENDEE NAME** \_\_\_\_\_

**COMPANY NAME** \_\_\_\_\_

**ADDRESS** \_\_\_\_\_

**CITY** \_\_\_\_\_ **STATE** \_\_\_\_\_ **ZIP/POSTAL** \_\_\_\_\_ **COUNTRY** \_\_\_\_\_

**PHONE WORK** \_\_\_\_\_ **HOME** \_\_\_\_\_

**FACSIMILE** \_\_\_\_\_ **E-MAIL** \_\_\_\_\_

**SHARING WITH** \_\_\_\_\_

**SPECIAL NEEDS (Handicapped/Other)** \_\_\_\_\_ **SMOKING** \_\_\_ YES \_\_\_ NO

**KING BED** \_\_\_\_\_ **/2 QUEEN BEDS** \_\_\_\_\_

**TOTAL DEPOSIT AMOUNT ENCLOSED** \_\_\_\_\_

**CREDIT CARD: American Express** \_\_\_ **Diners** \_\_\_ **Discover** \_\_\_ **Master Card** \_\_\_ **Visa** \_\_\_

**CREDIT CARD NUMBER** \_\_\_\_\_ **Expiration Date** \_\_\_\_\_

**NAME ON CREDIT CARD** \_\_\_\_\_

**CARDHOLDER'S BILLING ADDRESS** \_\_\_\_\_

**CITY** \_\_\_\_\_ **STATE** \_\_\_\_\_ **ZIP/POSTAL** \_\_\_\_\_ **COUNTRY** \_\_\_\_\_

**SIGNATURE** \_\_\_\_\_ **DATE** \_\_\_\_\_

RESERVATION WILL NOT BE PROCESSED WITHOUT A SIGNATURE

Airline and Car Rental discount rates are available. To view these discounts, visit the Winter Conference website at [www-unix.oit.umass.edu/~wc2006](http://www-unix.oit.umass.edu/~wc2006).



# 2006 Winter Conference on Plasma Spectrochemistry

Tucson, Arizona, January 8 - 14, 2006

## CONFERENCE FEE SUMMARY

Conference Registration Fees	Before	After	After
	October 14, 2005		December 9, 2005
Conference*	\$450	\$720	\$900
Exhibitor**	\$110	\$335	\$600
Student***	\$ 65	\$110	\$240
Postdoctoral***	\$ 90	\$220	\$400
Single Day*** (2 days max) @	\$170	\$300	\$400
Short Course Enrollment (each course)	\$100	\$200	\$300
<i>Conference Dinner (includes taxes and gratuity)</i>			
Conference Dinner (adult)	\$ 62	\$ 66	\$ 70
Conference Dinner (child under 12)	\$ 31	\$ 32	\$ 33
<i>Additional or Duplicate, Proceedings</i>			
Souvenir T Shirt (Size ___)	\$ 15	\$ 17	\$ 20
Conference Abstracts (duplicate)	\$ 20	\$ 30	\$ 50
Conference Proceedings	\$ 55	\$ 60	\$ 65

\* Conference registration includes Conference abstracts, souvenirs and tee shirt, and one-year subscription to *ICP Information Newsletter*. Conference dinner is not included in the registration fee.

\*\* Conference registration for personnel of organizations participating in Conference exhibition and includes Conference abstracts and souvenir shirt only. Exhibitors must be registered as employees of a sponsoring firm. Conference dinner is not included in the Exhibitor registration fee.

\*\*\* Conference registration includes Conference abstracts and souvenir shirt only. Only full-time students are eligible for student registration. Enclose a letter signed by the academic advisor.

No registration fees are charged for accompanying persons, family, or children.

**CANCELLATION POLICY:** Full refund if written request postmarked before Dec. 9, 2005; 50% refund if request postmarked no later than Dec. 16, 2005. No refund for request postmarked after Dec. 16.

New subscriptions to the *ICP Information Newsletter* for 2006 and 2007 are available at a special 10% discount [\$60.30 (US, Canada), \$82.80 (Europe, South America), \$91.80 (Asia, Pacific, etc.)].

Tax-deductible contributions are solicited to our Conference Travel and Registration Grant funds for students and overseas visitors. Do not overlook your corporate gift matching programs.

Please send payment with Registration form to **WINTER CONFERENCE**, %Ramon Barnes, ICP Information Newsletter, Inc., P.O. Box 666, Hadley, MA 01035-0666.

Federal Employer Identification Number (EIN) is 04-3361420.

*American Express, MasterCard or Visa* may be employed to pay for your registration. A 5.3% service charge will be added for each credit-card transaction reflecting bank charges to us. Please enclose the following information with your registration form:

Paid by:  Check or money order  American Express  Master Card  VISA

Cardholder's Name (as printed on card) : \_\_\_\_\_

Credit Card Account No. (All digits) \_\_\_\_\_ Expiration date \_\_\_\_\_

Cardholder Signature: \_\_\_\_\_ Date \_\_\_\_\_

**2006 Winter Conference on Plasma Spectrochemistry**  
%ICP Information Newsletter, Inc., P.O. Box 666, Hadley, MA 01035-0666;  
85 N. Whitney St., Amherst, MA 01035-1869

Dr. Ramon Barnes, Conference Chairman, Telephone (413) 256-8942, Fax (413) 256-3746,  
email [wc2006@chem.umass.edu](mailto:wc2006@chem.umass.edu), <http://www-unix.oit.umass.edu/~wc2006>



# 2006 Winter Conference on Plasma Spectrochemistry

## Tucson, Arizona, January 8 - 14, 2006

### CONFERENCE REGISTRATION

#### A. Registration

Please Type or Print Clearly  
FIRST NAME

FAMILY NAME  
COMPANY  
ADDRESS

CITY STATE ZIP/POSTAL CODE  
COUNTRY E-MAIL  
Telephone (Business) (Home) FAX

#### Please indicate:

Author  Co-author  Attending ( Single day  Short Course Only)  Exhibitor  Student\* ( Predoctoral  Postdoctoral)

\*Only full-time students are eligible for student registration. Academic advisor must countersign registration.

**Tea Shirt Size:**  Extra Extra Large  Extra Large  Large  Medium  Small  Very Small (Child).

#### B. Accompanying Person(s), Transportation, Accommodations (Information purposes only)

Give names of accompanying person: Spouse or

Children (Names/Ages)

Arrival Date/Time

Departure Date

Other

Airline

Hotel:  Hilton Tucson El Conquistador  Other

#### C. Conference Registration Fees

	Before	After	After	Enter Amount	Subtotal
	October 14, 2005	December 9, 2005			

<input type="checkbox"/> Conference	\$450	\$720	\$900	\$ _____	
<input type="checkbox"/> Exhibitor	\$110	\$335	\$600	\$ _____	
<input type="checkbox"/> Student	\$ 65	\$110	\$240	\$ _____	
<input type="checkbox"/> Postdoctoral	\$ 90	\$220	\$400	\$ _____	
<input type="checkbox"/> Single Day __ days (2 days max)@	\$170	\$300	\$400	\$ _____	\$ _____
<input type="checkbox"/> Short Course Enrollment (each)	\$100	\$200	\$300 [indicate below]		

#### D. Short Course Enrollment

Mark Date, Time Fill-in Course Number (SX- 00) and Name

<input type="checkbox"/> (1) Jan 6, 8 am S__ -				\$ _____	
<input type="checkbox"/> (2) Jan 6, 1 pm S__ -				\$ _____	
<input type="checkbox"/> (3) Jan 6, 7 pm S__ -				\$ _____	
<input type="checkbox"/> (4) Jan 7, 8 am S__ -				\$ _____	
<input type="checkbox"/> (5) Jan 7, 1 pm S__ -				\$ _____	
<input type="checkbox"/> (6) Jan 7, 7 pm S__ -				\$ _____	
<input type="checkbox"/> (7) Jan 8, 8 am S__ -				\$ _____	
<input type="checkbox"/> (8) Jan 8, 1 pm S__ -				\$ _____	
<input type="checkbox"/> (9) Jan 8, 7 pm S__ -				\$ _____	\$ _____

#### E. Conference Dinner (includes tax and gratuity)

			Number Ordered		
<input type="checkbox"/> Conference Dinner (adult)	\$62	\$66	\$70 (x__)	\$ _____	
<input type="checkbox"/> Conference Dinner (child under 12)	\$31	\$32	\$33 (x__)	\$ _____	\$ _____

#### F. Duplicate/Additional Shirts, Abstracts, Proceedings, Donations

			Number Ordered		
<input type="checkbox"/> Souvenir T Shirt (Size ____)	\$15	\$17	\$20 (x__)	\$ _____	
<input type="checkbox"/> Conference Abstracts (duplicate)	\$20	\$30	\$50 (x__)	\$ _____	\$ _____
<input type="checkbox"/> Conference Proceedings	\$55	\$60	\$65 (x__)	\$ _____	\$ _____
<input type="checkbox"/> Subscription to ICP Information Newsletter (January - December 2006)				\$ _____	\$ _____
<input type="checkbox"/> Tax-Deductible Contribution to Conference Travel-Registration Funds				\$ _____	\$ _____

**TOTAL** \$ \_\_\_\_\_

Please send payment with this Registration form to **WINTER CONFERENCE**, %Dr. Ramon Barnes, ICP Information Newsletter, Inc., P.O. Box 666, Hadley, MA 01035-0666. A 5.3% service charge will be added for credit card payment.

Paid by:  Check or money order  American Express  Master Card  VISA. Cardholder Name: \_\_\_\_\_

Credit Card Account No. \_\_\_\_\_ Expiration date \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

For Conference Use Only

REGISTRATION NUMBER 2006 \_\_\_\_ - \_\_\_\_

Payment: \$ \_\_\_\_\_ Check No. \_\_\_\_\_

Date Received: \_\_\_\_\_

Refund: \_\_\_\_\_ Check Date \_\_\_\_\_

Acknowledgment: \_\_\_\_\_



# 2006 Winter Conference on Plasma Spectrochemistry

## Tucson, Arizona, January 8 - 14, 2006

**CONFERENCE REGISTRATION - Early Bird Special- July 15, 2005**

**A. Registration**

Please Type or Print Clearly  
FIRST NAME

FAMILY NAME  
COMPANY  
ADDRESS

CITY STATE ZIP/POSTAL CODE  
COUNTRY E-MAIL  
Telephone (Business) (Home) FAX

**Please indicate:**

Author  Coauthor  Attending ( Single day  Short Course Only)  Exhibitor  Student\* ( Predoctoral  Postdoctoral)

\*Only full-time students are eligible for student registration. Academic advisor must countersign registration.

**Tee Shirt Size:**  Extra Extra Large  Extra Large  Large  Medium  Small  Very Small (Child).

**B. Accompanying Person(s), Transportation, Accommodations** (Information purposes only)

Give names of accompanying person: Spouse or

Children (Names/Ages)

Arrival Date/Time

Departure Date

Other

Airline

Hotel:  Hilton Tucson El Conquistador  Other

**C. Conference Registration Fees** Only Before July 15, 2005

Enter Amount Subtotal

<input type="checkbox"/> Conference	\$400	\$ _____	
<input type="checkbox"/> Exhibitor	\$ 95	\$ _____	
<input type="checkbox"/> Student	\$ 60	\$ _____	
<input type="checkbox"/> Postdoctoral	\$ 80	\$ _____	
<input type="checkbox"/> Single Day __ days (2 days max)@	\$150	\$ _____	\$ _____

**D. Short Course Enrollment** (each) \$ 90

Mark Date, Time Indicate Course Number (SX - 00) and Name

<input type="checkbox"/> (1) Jan 6, 1 pm	S__ -	\$ _____	
<input type="checkbox"/> (2) Jan 6, 1 pm	S__ -	\$ _____	
<input type="checkbox"/> (3) Jan 6, 7 pm	S__ -	\$ _____	
<input type="checkbox"/> (4) Jan 7, 8 am	S__ -	\$ _____	
<input type="checkbox"/> (5) Jan 7, 1 pm	S__ -	\$ _____	
<input type="checkbox"/> (6) Jan 7, 7 pm	S__ -	\$ _____	
<input type="checkbox"/> (7) Jan 8, 8 am	S__ -	\$ _____	
<input type="checkbox"/> (8) Jan 8, 1 pm	S__ -	\$ _____	
<input type="checkbox"/> (9) Jan 8, 7 pm	S__ -	\$ _____	\$ _____

**E. Conference Dinner** (includes tax and gratuity)

<input type="checkbox"/> Conference Dinner (adult)	\$54	Number Ordered (x__)	\$ _____	
<input type="checkbox"/> Conference Dinner (child under 12)	\$27	(x__)	\$ _____	\$ _____

**F. Duplicate/Additional Shirts, Abstracts, Proceedings, Donations**

<input type="checkbox"/> Souvenir T Shirt (Size __)	\$13	Number Ordered (x__)	\$ _____	
<input type="checkbox"/> Conference Abstracts (duplicate)	\$18	(x__)	\$ _____	\$ _____
<input type="checkbox"/> Conference Proceedings	\$49	(x__)	\$ _____	\$ _____
<input type="checkbox"/> Subscription to ICP Information Newsletter (January - December 2006)			\$ _____	\$ _____
<input type="checkbox"/> Tax-Deductible Contribution to Conference Travel-Registration Grant Funds			\$ _____	\$ _____

**TOTAL** \$ \_\_\_\_\_

Please send payment with this Registration form to **WINTER CONFERENCE**, %Dr. Ramon Barnes, ICP Information Newsletter, Inc., P.O. Box 666, Hadley, MA 01035-0666. A 5.3% service charge will be added for credit card payment.

Paid by:  Check or money order  American Express  Master Card  VISA. Cardholder Name: \_\_\_\_\_

Credit Card Account No. \_\_\_\_\_ Expiration date \_\_\_\_\_

**Signature:** \_\_\_\_\_

**Date:** \_\_\_\_\_

For Conference Use Only

REGISTRATION NUMBER 2006\_\_||\_\_|| - \_\_||\_\_||

Payment: \$ \_\_\_\_\_ Check No. \_\_\_\_\_

Date Received: \_\_\_\_\_

Refund: \_\_\_\_\_ Check Date \_\_\_\_\_

Acknowledgment: \_\_\_\_\_

# 2006 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 9. The title and abstract deadline is July 15, 2005. Accepted titles will be acknowledged in August and assigned program times, and final abstracts will be due October 14, 2005. 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

- Certified Reference Materials
- Chemicals, Pure Reagents, Ultrapure Water
- Clinical Biomonitoring and Chemical Preparedness
- Earth and Geological Sciences
- Environmental and Agricultural Sciences
- Fundamentals, Basic Studies
- Petroleum Materials and Products
- Pharmaceutical Analysis
- Plasma Instrumentation
- Provenancing, Authentication, Source Origin, Forensics
- Radioisotopes and Nuclear Materials
- Solids, Surfaces, and Interfaces

### Symposium Topics

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

Abstracts and titles for the Workshop on New Plasma Instrumentation (January 10-12) from manufacturers and vendors also will be accepted with the same guidelines as conference presentations. A \$250 registration fee is required for Workshop speakers.

## Program Outline

### Monday, January 9, 2006

8:00 Opening and Welcome Ramon M. Barnes  
8:05 (PL1) *Plenary Lecture* D. Bonner Denton, **Modern Spectroscopic Detectors**

#### 1. Clinical ICP-MS for Biomonitoring and Chemical Terrorism Preparedness 1: Trace Analyses

Robert Jones, Chair

9:00 (IL1) *Invited Lecture*

9:30 (IL2) *Invited Lecture*

#### 2. Clinical ICP-MS for Biomonitoring and Chemical Terrorism Preparedness 2: Stable Isotope and Speciation Analyses

Kathy Caldwell and Patrick Parsons, Co-Chairs

1:00 (IL3) *Invited Lecture*

1:30 (IL4) *Invited Lecture*

5:30 (PD1) *Panel Discussion* **Challenges of Clinical ICP-MS Analyses**

6:30 *Exhibition Opening and Social Mixer*

### Tuesday, January 10, 2006

#### 3. Elemental Speciation

8:00 (PL2) *Plenary Lecture*, **Elemental Speciation**

9:00 (IL5) *Invited Lecture*

9:30 (IL6) *Invited Lecture*

#### 4. Symposia on Trace Elements, Stable Isotope, and Elemental Speciation Analyses for Pharmaceutical Materials

1:00 (IL7) *Invited Lecture*

1:30 (IL8) *Invited Lecture*

3 - 6:30 **Poster Session: Clinical and Pharmaceutical Analyses, Sampling and Preparation, Elemental Speciation**

3:15 - 5:15 (WS1) *Workshop* New Plasma Instrumentation, Isaac B. Brenner and Robert I. Botto, Chairmen

5:00 **Social Mixer**

5:30 (PD2) *Panel Discussion* **Progress in Elemental Speciation**

### Wednesday, January 11, 2006

#### 5. Laser Assisted Plasma Spectrochemistry

Gary M. Hieftje, Chairman

8:00 (PL3) *Plenary Lecture* Nicolo Omenetto, **Laser Spectrochemistry**

9:00 (IL9) *Invited Lecture*

9:00 (IL10) *Invited Lecture*

**6. Symposia on Trace Elements, Stable Isotope, and Elemental Speciation Analyses for Provenancing**

- 1:00 (IL11) *Invited Lecture*  
1:30 (IL12) *Invited Lecture*  
3 - 6:30 **Poster Session: Automation, Instrumentation, Laser Assisted Plasma Spectrometry, Provenancing Analyses, Software**  
3:15 - 5:15 (WS2) *Workshop New Plasma Instrumentation*, Isaac B. Brenner and Robert I. Botto, Chairmen  
5:00 *Social Mixer*  
5:30 (PD3) *Panel Discussion Microsample Plasma Instrumentation*

**Thursday, January 12, 2006**

**7. Symposia on Trace Elements, Stable Isotope, and Elemental Speciation Analyses of Petroleum Materials**

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

**8. Symposia on Trace Elements, Stable Isotope, and Elemental Speciation Analyses for Certified Reference Materials**

- 1:00 (IL15) *Invited Lecture*  
1:30 (IL16) *Invited Lecture*  
3 - 6:30 **Poster Session: Petroleum and Other Applications, Plasma Sources, Sample Preparation and Standards, Stable Isotopes, Teaching Spectroscopy**  
3:15 - 5:15 (WS3) *Workshop New Plasma Instrumentation*, Isaac B. Brenner and Robert I. Botto, Chairmen  
4:30 (TS1) *Panel Discussion Teaching Spectroscopy*, Vassili Karanassios, Chair  
6:30 *Conference Dinner*

**Friday, January 13, 2006**

- 8:00 (PL5) *Plenary Lecture* J. Sabine Becker, **Isotope Ratio Measurements by Mass Spectrometry**

**9. Symposia on Trace Elements, Stable Isotope, and Elemental Speciation Analyses for Environmental Materials**

Mike Ketterer and Skip Kingson, Co-Chair

- 9:00 (IL17) *Invited Lecture*  
9:30 (IL18) *Invited Lecture*

**10. Symposia on Trace Elements, Stable Isotope, and Elemental Speciation Analyses for Earth and Geological Sciences**

Conrad Gregoire, Chair

- 1:00 (IL19) *Invited Lecture*  
1:30 (IL20) *Invited Lecture*  
3 - 6:30 **Poster Session: Glow Discharge Atomic/Mass Spectrometry, Mechanisms, Plasma Mass Spectrometry – Applications, Fundamentals, Instrumentation**  
5:00 *Social Mixer*  
5:30 (PD4) *Panel Discussion Plasma Applications for Agriculture, Environmental, Earth and Geological Sciences*

**Saturday, January 14, 2006**

- 8:00 (PL6) *Plenary Lecture* Gary M. Hieftje, **New Sources and Spectrometers for Plasma Spectrochemistry**

**11. Symposia on Trace Elements, Stable Isotope, and Elemental Speciation Analyses of Solids, Surfaces, and Interfaces**

- 9:00 (IL21) *Invited Lecture*  
9:30 (IL22) *Invited Lecture*

**12. Symposia on Trace Elements, Stable Isotope, and Elemental Speciation Analyses Fundamentals and Instrumentation**

- 1:00 (IL23) *Invited Lecture*  
1:30 (IL24) *Invited Lecture*  
5:30 (PD5) *Panel Discussion New Plasma Source Mass Spectrometers and Instrumentation*  
6:30 *Conference Closing*



**Conference Travel and Registration Grants**

The Winter Conference sponsor, the ICP Information Newsletter Corporation, 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 2006 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, page 12) or directly at any time. Travel and Registration Grant rules and application forms can be obtained from the Conference chairman.



# ***2006 Winter Conference on Plasma Spectrochemistry***

## ***Tucson, Arizona, January 8 – 14, 2006***

### ***Call for Papers***

The 14th biennial international Winter Conference will be held at the Hilton Tucson El Conquistador Golf and Tennis Resort ([www.hiltonelconquistador.com](http://www.hiltonelconquistador.com)) in Tucson, Arizona ([www.visitTucson.org](http://www.visitTucson.org)). More than 600 scientists are expected, and over 300 papers on modern plasma spectrochemistry will be presented. Six plenary lectures and 24 invited speakers will highlight critical topics in 12 symposia. Contributed paper titles and short abstracts are requested by July 15, 2005.

### ***Symposium Features***

- Elemental speciation and sample preparation
- Excitation mechanisms and plasma phenomena
- Flow injection and flow processing spectrochemical analysis
- Glow discharge atomic and mass spectrometry
- Inductively coupled plasma atomic and mass spectrometry
- Laser ablation and breakdown spectrometry
- Microwave atomic and mass spectrometry
- Plasma chromatographic detectors
- Plasma instrumentation, microplasmas, automation, and software innovations
- Sample introduction and transport phenomena
- Sample preparation, treatment, and automation; high-purity materials
- Spectrochemical chemometrics, expert systems, and software
- Spectroscopic standards and reference materials, databases
- Stable isotope analyses and applications



### ***Also***

- Continuing Education Short Courses, Friday - Sunday, January 6 - 8
- Manufacturer's Seminars, Friday - Sunday, January 6 - 8
- 6th Annual Golf Tournament, Sunday, January 8
- Plasma Spectroscopy Instrumentation Exhibition, Tuesday-Thursday, January 10-12
- Six Provocative Panel Discussions, Daily
- Workshop on New Plasma Instrumentation, Tuesday-Thursday, January 10 - 12

### ***Information***

For program, registration, hotel, and transportation details, visit the Conference website at <http://www-unix.oit.umass.edu/~wc2006>, or contact Ramon Barnes, ICP Information Newsletter, Inc., P.O. Box 666, Hadley, MA 01003-0666, telephone: 413-256-8942, fax 413-256-3746, e-mail [wc2006@chem.umass.edu](mailto:wc2006@chem.umass.edu).