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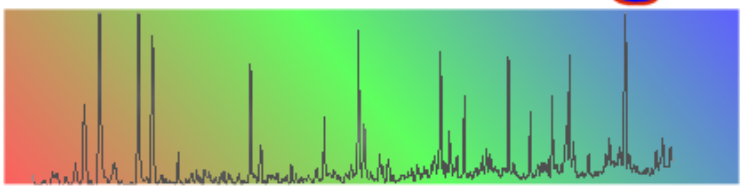


Please visit our linked business cards on the last page of this flyer.

April Meeting

Sponsored by Nalco Company

Tuesday, April 12, 2005

The April 2005 meeting will be held at the LaMirage Restaurant, located at 3223 Algonquin Rd., Rolling Meadows. See the map on the following page.

Social Hour: 5:30 - 6:30 PM **Dinner: 6:30 PM** **Speakers: 7:45 – 9:00 PM**

Laser Induced Breakdown Spectroscopy (LIBS): An emerging sensor technology with significant potential for homeland security

Presentation by

Dr. Andrzej W. Miziolek

(US Army Research Laboratory)

LIBS is a relatively simple and straightforward plasma spectrochemical technique that is currently enjoying significant growth in application areas, particularly for homeland security. The operating principle of LIBS involves a pulsed laser whose beam is aimed at a target material and focused tightly to produce a dielectric breakdown/microplasma at the laser focal point. The target material is first ablated and subsequently engulfed in the expanding plasma that typically reaches temperatures of 15,000 K. During the brief microseconds-long plasma lifetime, the chemical constituents of the target material are converted to excited atoms and ions that emit characteristic light which is captured by advanced spectrometers with array detectors. The specific wavelength of the emitted light indicates which elements were present in the target material while the intensity of this light signifies the relative abundance of this element within the sample.

LIBS has multiple attributes including (1) real-time response, (2) high degree of sensitivity (pgms-ngms), (3) no sample preparation required, and (4) can be operated as a close-contact as well as standoff detector. The US Army Research Laboratory is the lead DoD LIBS research activity, which has pioneered many homeland security and force protection applications including explosives, chem, and bio agent detection. The LIBS sensor technology is currently transitioning to field measurement applications with recent improvements in instrumentation and chemometrics.

Specific examples of homeland security applications will be presented.

Please make your dinner reservations for the upcoming meeting by using the form on our web page < **http://www.sas-chicago.org/Online%20Registration.htm** > , by email at **sas.chicago@bigfoot.com** or by calling Mary Kaplar at **708-449-5767**. Leave **your name**, **company affiliation**, a **telephone number,** the **number of reservations** and **your choice of entree**. Please call by **noon Friday, April 8th**, so that proper arrangements can be made with the LaMirage Restaurant. If you can't attend, cancel by Mon. noon: SAS is charged for no-shows.

Entree choices: ***NY Strip Steak, Chicken Breast LaMirage, or Fettuccini.***

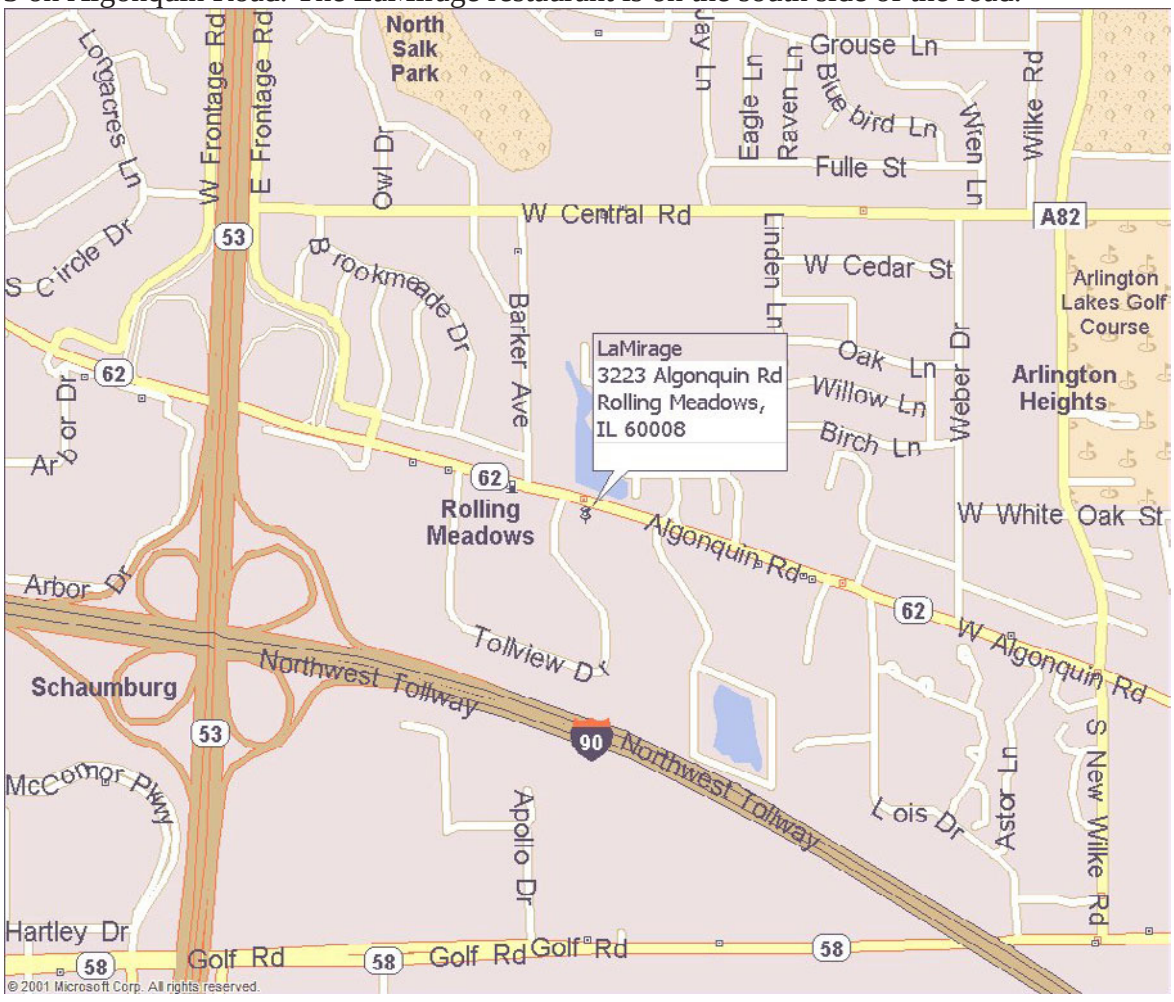
Dinner Cost **Members: $25** **Students, Retired and Unemployed Members: $10** **Non-members: $30**

Biography

Dr. Andrzej W. Miziolek is internationally recognized for his expertise in combustion (particularly flame suppression) and plasma research; multiphoton spectroscopy and collisional dynamics; and for his work in applying laser spectroscopy to problems in chemical analysis and combustion diagnostics. In recent years he has become an internationally renowned leader in the Laser Induced Breakdown Spectroscopy (LIBS) sensor technology field and has pioneered the use of LIBS for force protection and homeland security applications. Prior to joining the Ballistic Research Laboratory/Army Research Laboratory in 1981, Dr. Miziolek received a Ph.D. from the University of California, Berkley and worked as postdoctoral for Nobel Laureate Professor Mario J. Molina. Dr. Miziolek has co-authored over 50 refereed journal papers, five book chapters, 80 government technical reports and publications, and is lead editor for the book *Laser Induced Breakdown Spectroscopy*, which is scheduled to be published this fall.

DIRECTIONS TO THE LA MIRAGE RESTAURANT

LaMirage is located at 3223 Algonquin Road in Rolling Meadows. It is located about 0.5 mile east of Route 53 on Algonquin Road. The LaMirage restaurant is on the south side of the road.



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Contact Mary Kaplar to get your business card in the next SAS-Chicago section newsletter.

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