The SAS Spectrum Newsletter
The Newsletter of the Society for Applied Spectroscopy

March 2010

SAS LOSES TWO EXCELLENT SCIENTISTS AND FRIENDS

PROFESSOR C.L. CHAKRABARTI

It is with great sadness that we announce the death of Prof. C.L. Chakrabarti on January 1, 2010 in Ottawa.

To his many friends and colleagues throughout the world, Chuni Lal Chakrabarti was affectionately known simply as "Chak". "*Call me Chak, all my friends call me Chak*", he was once overheard shouting to a visitor in the chemistry building. Chak received his B.Sc. in 1941 from the University of Calcutta. For the next 18 years he served as Supervisor of the Chemical Laboratory, Metal and Steel Factory and Director in Burma's Mineral Resources Development Corporation. After what some would consider a career completed, he returned to academic life, receiving his M.Sc. in Chemistry from the University of Birmingham in 1960 under the tutelage of Professor R. Belcher and Dr. W.I. Stephen, followed by his Ph.D. in 1962 from The Queen's University of Belfast where he worked with Professor C.L. Wilson. He was awarded the D.Sc. degree by The Queen's University of Belfast in 1980.

Chak's academic career began in 1962 when he became Visiting Assistant Professor at Louisiana State University in Baton Rouge. In 1965 he was appointed Assistant Professor at Carleton University in Ottawa where he rose to the rank of Full Professor of Chemistry in 1976. In 1991, Chak was appointed Distinguished Research Professor, the first individual to receive such an appointment from Carleton University, it being awarded in recognition of his contributions to science, Canada and the University.

During his career, Chak published some 230 scientific papers and supervised nearly 100 graduate students and post-doctoral fellows. He also made numerous other contributions to science and received many awards and titles. He was Editor-in-Chief of *Progress in Analytical Atomic Spectroscopy* as well as of the *Canadian Journal of Analytical Sciences and Spectroscopy*. He was a member of the Editorial Boards of *Spectrochimica Acta, Part A, Spectrochimica Acta, Part B,* and *Annual Reports on Analytical Atomic Spectroscopy*, and was a member of the Editorial Board of *Spectroscopy and Spectral Analysis*. Chak was a Fellow of the Royal Society of Chemistry, UK, a Fellow of the Chemical Institute of Canada, and member of the American Chemical Society. He was the recipient of the following major awards: The Gerhard Herzberg Award of the Spectroscopy Society of Canada (1977) "for outstanding contributions to the science of spectroscopy"; the Fisher Scientific Award of The Chemical Institute of Canada (1981) "for

distinguished contributions in the field of analytical chemistry"; The Ioannes Marcus Marci of Kronland Plaque of the Czechoslovak Academy of Sciences (1984) for "outstanding contributions to the field of analytical spectroscopy", and the Atomic Spectroscopy Award (1994) from Spectrochimica Acta, Elsevier Science B.V. At the height of his career, Chak's laboratories were a hub for research in atomic absorption spectrometry, frequently visited by many outstanding international researchers in the field, which provided a fertile environment for the exchange of ideas and the training of students.

Although Chak's contributions have been global in scale, those to Canada have been especially significant. As Canada is a very large country with a relatively small population, the work of individuals is especially important. Through his activities as perhaps the leading member of the Spectroscopy Society of Canada (SSC) he was responsible for keeping the Society alive and well for many years. One of his greatest contributions was the organization of the technical program of the annual conference of the SSC, the International Conference on Analytical Sciences and Spectroscopy. His persistent lobbying and promotion of the conference resulted in making it one of the best anywhere on analytical atomic spectroscopy.

After his "retirement" from Carleton University in 1991, the University re-employed him to work full-time as Distinguished Research Professor with life-time tenure. At an age when others would prefer to enjoy their golden years, he chose to follow his passion and continue working with graduate students and post-doctoral fellows; he maintained an office and laboratory until his death.

Chak was honoured in July 1998 by the publication of a special issue of *Spectrochimica Acta, Part B* (53B, Numbers 6-8) in recognition of his wide-ranging work in science and for his teaching. In this issue, he wrote, "*My greatest satisfaction has been that the members of my research group consider themselves as members of my family, with myself as the father of the family, and my graduate students as my children*." In fact, he opened his autobiographical comments entitled, 'A Life Unfinished', with a poem of his own composition:

IMMORTALITY ?

If I should die I wish to be reborn in my students,
They are my children, my spiritual descendants,
To sow a tiny acorn and see it grow into a mighty oak tree,
Immortality? I would prefer re-incarnation to immortality.

When a child cries in the night - cries for the light,
I will whisper in his ears, 'knowledge will give you the light',
When a child with curly hair dreams of beauty and yet so fair,
I will read a beautiful poem to her and perchance the muse is born!

Above all else, Chak was a unique individual with a strength of character and willpower that drove him, and his students, to achieve in the laboratory and in life. He was a keen observer of human nature and was always quick to come up with an appropriate story or simile to describe any situation or life lesson. His contributions to science have indeed been great and are firmly ensconced in the literature as important milestones to be recognized and built upon in the future. Through his students, Chak has established a tradition of excellence that will endure and be passed on to future generations of scientists.

Perhaps the most important aspect of Chak's professional life was the on-going relationship he kept with all of his students. Chak was a very good judge of character and he tirelessly worked to guide his students towards a career best suited to their temperament and abilities. Once graduated, he cared for

their well-being long after they left his laboratory. Some former students became collaborators and graduate student co-supervisors with Chak.

With his passing, Chak leaves a hole in the fabric of our science and in our hearts. His presence will be sorely missed by all of those who knew and loved him and benefited from his unique character and philosophy of life.

D. Conrad Grégoire, Geological Survey of Canada, Retired and
R. E. Sturgeon, National Research Council Canada, Ottawa

STEVEN LANCE WRIGHT

Dr. Steven Lance Wright, a productive member of the SAS, passed away unexpectedly on December 17th, 2009.

Steve was born on August 22, 1961, to Richard and Lorraine Wright. He graduated with a bachelor of science degree from the University of Northern Iowa and received his Ph.D. at Kansas State University, studying under the supervision of Bill Fateley. While in graduate school he met his wife, San, and they had 19 wonderful years together.

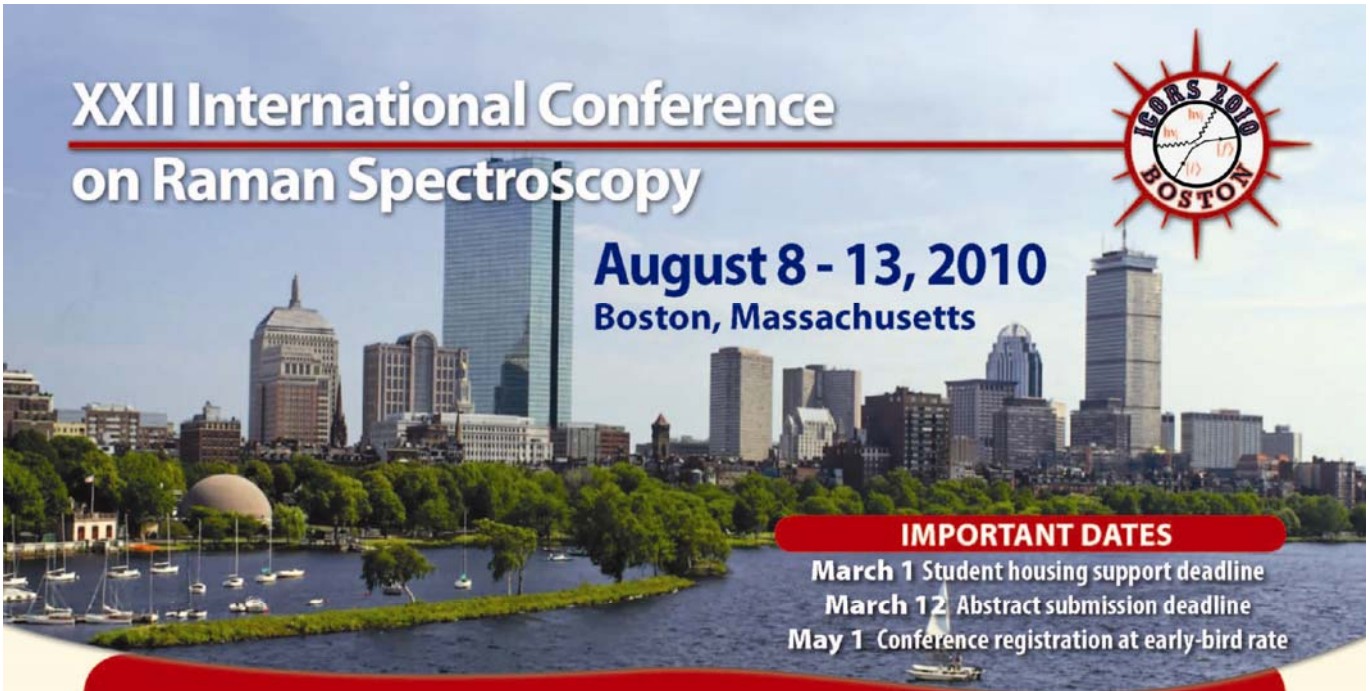
Among Steve's contributions to science, he tirelessly championed and proved that bulk spectroscopic methods could be successfully refined for detailed measurements on individual seeds, plants, and other agricultural products. He is the sole patent holder and co-author on many scientific papers devoted to a novel NIR spectroscopic method that determines genotypical traits of individual corn kernels prior to planting: a technique that is critical in expediting breeding cycles while circumventing the need for genetic modification. This is research he successfully expanded to the rapid, non-invasive examination of entire, mature plant organisms and the sophisticated HT robotics, optics, and computer modeling needed for this task. Steve was employed as a Research Scientist at Pioneer Hi-Bred International Inc., A DuPont Company, in Johnston, Iowa for most of his scientific career. There he also performed agricultural research on diverse data sets such as ICR-MS of soybean embryos and satellite imagery of crops. Steve's gregarious and laid-back nature usually masked that he was an exacting spectroscopist and scientist who possessed natural insights into the workings of spectrometers, optics, and the complexities of chemometric statistics.

Steve was an avid rock guitarist and guitar collector who could easily riff off of Led Zeppelin or Rodrigo. He was also an accomplished cook who loved the foods of his Midwestern roots and that of his extended Singapore family. Finally, Steve considered his family and their accomplishments foremost in his life. He leaves his wife, San Wong, Dean at Des Moines Area Community College, and his twin sons Dayton and Jordan.

Comments to butcherATemail.wcu.edu

XXII International Conference on Raman Spectroscopy

August 8 - 13, 2010
Boston, Massachusetts

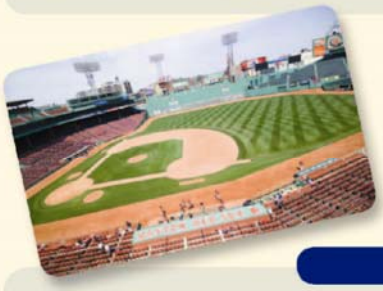


IMPORTANT DATES
March 1 Student housing support deadline
March 12 Abstract submission deadline
May 1 Conference registration at early-bird rate

SUBMIT YOUR ABSTRACT TODAY! Go to www.ICORS2010.org

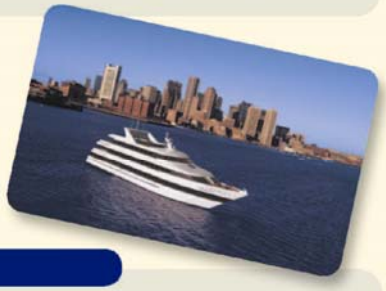
CONFERENCE SESSION TOPICS INCLUDE:

- Art and Archeology
- Raman-Based Imaging
- Raman Optical Activity
- Time-Resolved Raman
- Attosecond Spectroscopy and Raman
- Theory and Potential Energy Surfaces
- UV Resonance Raman Spectroscopy
- Industrial, Security, and Forensic Applications
- Biomedical and Pharmaceutical Applications
- Biomolecules and Living Systems
- Carbon-Based Materials
- Solid State, Semiconductors and Polymers
- Tip-Enhanced and Near Field Raman
- Higher Order Raman
- SERS: Single Molecule, Theory, Substrates and Applications
- Coherent Raman Techniques and Applications
- Sum Frequency Generation
- Inelastic X-Ray Scattering
- Environment, Geology and Astrobiology
- Low Dimension and Nanoscale Materials



Monday evening reception and tour at Fenway Park, home of the Boston Red Sox.

Wednesday evening dinner cruise of Boston Harbor aboard the Odyssey.



Thursday banquet address by Charles Townes in Celebration of the 50th Anniversary of the Laser

PLENARY SPEAKERS

Dana Dlott, *University of Illinois, Urbana-Champaign*
Andrea Ferrari, *University of Cambridge, UK*
Rich Mathies, *University of California, Berkeley*
Pavel Matosek, *Rutherford Appleton Laboratory, UK*
Martin Moskovits, *University of California, Santa Barbara*
Bruno Pettinger, *Fritz Haber Institute, Berlin*
Geri Richmond, *University of Oregon*
Tom Spiro, *University of Washington*
Tahei Tahara, *Riken, Japan*
Siva Umapathy, *Indian Institute of Science, Bangalore*
David Villeneuve, *NRC Canada*
Sunney Xie, *Harvard University*

Banquet Speaker: Charles Townes, Noble Laureate, *University of California, Berkeley*

Conference Co-Chairs
Paul M. Champion
Larry Ziegler

In collaboration with

Boston University
Departments of Physics & Chemistry
The Photonics Center and the
College of Arts & Sciences

Northeastern University
Departments of Physics & Chemistry
and the College of Arts & Sciences

www.ICORS2010.org

SAS Chicago March Meeting

Tuesday, March 16, 2010 (Earlier start time)

The March meeting will be held at the Holiday Inn, located at 1000 Busse Road, Elk Grove Village, IL.

Science and Technology Challenges in National Security: Proliferation and Unconventional Weapons

by

Vahid Majidi, Ph.D.
Assistant Director, Weapons of Mass Destruction Directorate
Federal Bureau of Investigation

As recently as the past decade, most people were unfamiliar with the term "weapons of mass destruction (WMD)"; albeit the origin of this phrase can be traced back to more than half a century ago. Over the last few years, the public has been exposed to countless reports and an abundance of media coverage on WMD, resulting in a significant concern over public security, safety and health.

The FBI's WMD mission is critical and essential for our country's public safety and national security. The first step toward understanding what we do is to define WMD, which is based on legal statutes. For our purpose, WMD is defined as a weapon containing chemical, biological, radiological or special nuclear materials designed to cause death or injury. The threat of WMD is a complex issue; not just in the discussion of how to detect, deter, and defend against their use, but also in the difference between the devices, technology, and processes needed to obtain and use these weapons. Considering the unique scientific and investigative challenges posed by weapons of mass destruction, the WMD program at the FBI was created to develop and execute an integrated approach to deny access to WMD materials and technologies, prevent WMD attacks, and respond to WMD threats and incidents.

A critical and challenging component of this mission is to detect and disrupt the acquisition or use of WMD. In addition, preparedness for these events and our ability to respond to WMD incidents present a dilemma in that chemical, biological, radiological, and nuclear materials/events are distinctive in character, response requirements, and potential consequences. Hence, significant expertise is required to effectively support the FBI's responsibility and to create an organizational structure that ensures a systematic, coordinated, and effective national approach to preventing and responding to the threat of WMD.

In this presentation the roles, responsibilities and capabilities of the FBI will be highlighted. Additionally, the role of scientific analysis and approach will be discussed with regard to our daily case work.

Social Hour: 5:00 PM **Dinner: 6:00 PM** **Presentation: 7:00 PM**

On-line Registration Link

To register by telephone, call Slav Stepanovich at 847-421-2056. Leave your name, company affiliation, a telephone number, the number of reservations and your choice of entree. Please call by noon Friday, March 12th, so that proper arrangements can be made with the restaurant. If you can't attend, cancel by Friday noon: SAS is charged for no-shows.

Dinner Menu:

London Broil Chicken Marsala Vegetarian Lasagna

Dinner Cost:

Members: $ 30.00 Students and Unemployed Members: $10.00 Nonmembers: $ 35.00

Map and Directions to the Elk Grove Holiday Inn

Meeting Announcement