Indiana Section of the Society for Applied Spectroscopy

July / August 2001 Newsletter

2001-2002 SEMINARS

Following a successful seminar series for the 2000-2001 year, we are looking forward to this year's seminar series. We thank our corporate sponsors for their help in making the past year such a success and look forward to their continued support in the future. Currently, we are planning the 2001-2002 seminar series. If you know of a speaker who would be of particular interest to our audience, please contact any of the new officers by August 30, 2001. Last year we invited the following speakers:

Professor Shuming Nie of Indiana University with his presentation on luminescent Quantum Dots for ultrasensitive biological detection and imaging.

Professor Scott McLuckey of Purdue University who presented his research on the reactions of macro-ions and their potential roles in Analytical Chemistry.

Professor David Walt of Tufts University speaking about his research on optical fiber chemical sensors.

Professor Daniel Feldheim of North Carolina State University, the SAS national tour speaker, with his work on nanoscale fabrication of advanced electronic and optical devices.

We would like to thank last year's speakers, and we look forward to another year of great seminars.

WORKSHOPS AND SHORT COURSES AT FACSS

The Federation of Analytical Chemistry and Spectroscopy

Societies (FACSS) annual meeting will be held in Detroit, MI, October 7 - October 12, 2001. There are several opportunities at this meeting to attend workshops and short courses conducted by leading experts in various areas of spectroscopy. Attached to this month's newsletter is a list of the FACSS/SAS workshops with their instructors. More information on this meeting is available at the FACSS meeting website: http://facss.org/info.html.

2001-2002 ISSAS OFFICER ANOUNCEMENTS

We are happy to announce the 2001-2002 ISSAS officers:

Denise M. McClenathan – Chair
William C. Wetzel – Chair-Elect
Jason A. Starkey- Secretary
James H. Barnes –Treasurer

Nominations for the 2001-2002 ISSAS officers were accepted until Friday, July 6, 2001, and elections were held on Friday, July 13, 2001. The new officers took their positions following the elections.

We would like to thank Andrew Szumlas for his service this past year as the chair of ISSAS.

NEWS IN SPECTROSCOPY

High Throughput Screening with FRET: The development and successful use of high throughput screening in the drug industry has drawn more attention towards this technique in other areas of chemistry. High throughput screening with the aid of fluorescence resonance energy transfer spectroscopy (FRET) has been evaluated as a tool to identify optimal catalysis conditions in the formation of –aryl cyanoacetates, which are useful intermediates in the preparation of several common synthetic building blocks. This method appears to be a major breakthrough to accelerate the discovery of new reactions and to evaluate catalysis activity [J. Am. Chem. Soc. **123**, 4641 (2001)].

Single Molecule Spectroscopy Symposium: Recently a symposium at the ACS meeting in San Diego focused on single molecule detection. This meeting covered many of the different applications as well as methodologies that are being used with single molecule spectroscopy including Raman and fluorescence spectroscopy of DNA, protein, and cofactors.

At the conclusion of the meeting, it was clear that single-molecule detection has become a mature technique being applied to many problems in chemistry, biology, and physics [Science **292,** (5522), 1671 (2001)].

THIS MONTH IN SPECTROSCOPY

In July of 1963, which two authors introduced Atomic Fluorescence Spectrometry as a means for chemical analyses?

J.D. Winefordner and T.J. Vickers introduced a method of flame spectrometric analysis in 1963 in which the intensity of fluorescent emission was measured when atoms in a flame are excited by the absorption of radiation at a particular frequency [Anal.Chem. **36**, 161 (1963)]. Atomic fluorescence spectrometry makes use of the same basic instrumental components as atomic absorption spectrometry; however, it measures the intensity of the light emitted by atoms that have been excited from their ground state by the absorption of light of shorter wavelength than that emitted. The atomic fluorescence method is particularly well adapted to the determination of the alkali and alkaline earth metals.

Spectroscopy Trivia:

In September of 1954, who first described the application of NMR as a chemical analysis technique?

The answer to this question can be found in the next addition of "This Month in Spectroscopy" or log onto the ISSAS trivia page at http://www.indiana.edu/~issas/trivia.html.

ISSAS ONLINE

Please remember to check us out at our website! The ISSAS homepage will keep you updated on local section and national events as well as provide information about our corporate sponsors. Please visit our website at the following address: http://www.indiana.edu/~issas

NEW MEMBERSHIPS

Your local Indiana Section of the Society for Applied Spectroscopy is looking for new members. We invite you to recommend membership to any of your colleagues or students who you may feel would benefit from membership in such an organization. The fee for joining is a very reasonable price for both professional and students alike.

This is a good opportunity for the newer graduate students to get involved in a professional society. Membership also includes a subscription to the monthly journal *Applied Spectroscopy*. For further information on ISSAS membership, please feel free to contact any of the officers or visit our website the following address: http://www.indiana.edu/~issas.

CONTACT INFORMATION

You may contact any of the ISSAS officers via phone (812) 855-7905, fax (812) 855-0958, email at (issas@indiana.edu), or write to:

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SPONSORS

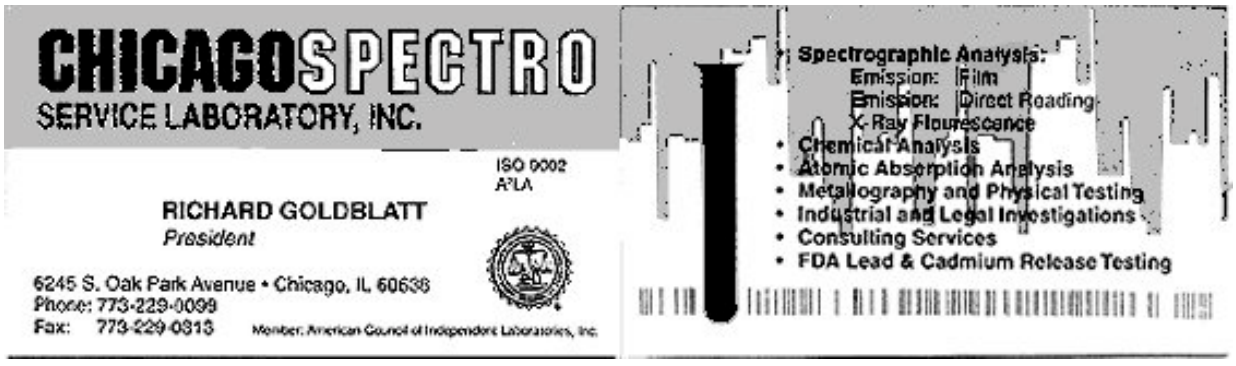
The Indiana Section of the Society for Applied Spectroscopy would like give a special thank you to our corporate sponsors who made this past year's newsletter and seminar series possible:

Chicago Spectro Service Laboratories, Inc

The Leco Corporation

Kaiser Optical Instruments, Inc.

We look forward to their continued support in the upcoming year. If your company or organization is interested in supporting the ISSAS, please contact our Treasurer, James Barnes at: jbarnes@indiana.edu



FACSS/SAS WORKSHOPS AND SHORT COURSES:

Fourier Transform Infrared Spectrometry
Peter Griffiths, James de Hasseth

Developing and Applying Advanced Chemometrics Online with MATLAB, PLS_Toolbox and Unscrambler
Neal Gallagher, Jeremy Shaver

Process Analytical Chemistry: Out of the Lab and Into the Pipe
Chris Hassell, Jim Rydzak

Analytical Raman Spectroscopy
Richard McCreery

Process Applications of Raman Spectroscopy
Michael J. Pelletier, Neil Lewis, Norman Wright

Modern Near Infrared Analysis
Donald Burns

ICP-AES Operating Parameters and Optimization of Analytical Performance
Jean-Michel Mermet

CTD-based ICP Emission Spectrometry: Principles, Optical Design, and Potential Benefits
Jean-Michel Mermet

Instrumental Methods for Elemental Analysis - It's Not Just ICP!
Art Varnes

ICP-MS
Sam Houk

Time Management 2- Getting Oneself Organized: Roles, Relationships, Life Balance, Dreams/Visions, and Goals
Pamela J. McConnell

Electronic Time Management - Getting Organized in Virtual Reality
Pamela J. McConnell

Spreadsheets for Scientists
Andy Sommer

Trace Metal Analysis in Biomedical Applications
Ela Bakowska

Professional Analytical Chemists in Industry: A Short Course for Undergraduate Students
Diane Parry

Preparing Your Laboratory for Trace Metals Determination (Is Your Lab Ready for ICP-MS?)
Byron Stewart, Kenneth Borowski,, Ela Bakowska

Hyphenated-IR Spectroscopic Methods (Pyrolysis GC-IR, TGA-FTIR of Polymer and Other Industrial Compounds)
John Hellgeth

Raman Chemical Imaging
Pat Treado

GMP Validation of Computerized Spectroscopy Systems for the Pharmaceutical and Medical Device Industries
Dianna Jones

Instrumental Analysis of Polymers
Critt Ohlemacher and Robert Pogue

Laser Ablation-ICP-MS - Direct Solid Sampling
Detlef Günther and Christopher Latkoczy

Chemometrics in Process Analytical Chemistry and Spectroscopy
Charles E. Miller

Chemometrics and Statistics in Analytical Chemistry Lab
Jerry Workman

Introduction to Inductively Coupled Plamsa- Atomic Emission Spectrometry
Robert B. Myers and F. Monte Evens

Implementing 21CFR11 in the Pharmaceutical and Medical Device Industries
Dianna Jones

Time Management 1- Getting Oneself Organized: Life Purpose Statement and Values, Getting Your Office Organized
Pamela J. McConnell

Fourier Transform Infrared Spectrometry
Pamela J..McConnell