

Indiana Section of the Society for Applied Spectroscopy

August/September 1999 Newsletter

ISSAS 1999-2000 SEMINARS

Welcome to a new year of seminars for the Indiana Section of the Society for Applied Spectroscopy. There are several very interesting speakers lined up and we hope to continue our tradition of excellent seminars. Our first speaker of the year will be Dr. John C. Wright from University of Wisconsin – Madison. The seminar will be held in Bloomington at the Indiana University Chemistry Building (C033) at 6:00 p.m. on Thursday, September 23. A dinner will be held with Dr. Wright after the meeting at Janko's Little Zagreb. If you are interested in attending the dinner with Dr. Wright, please RSVP Andrew Leach by September 21.

The tentative schedule for the remaining seminars is:

November 11, 1999
Dr. Marc D. Porter
Iowa State University

February 17, 2000
Dr. David M. Hercules
Vanderbilt University

April
Dr. Raoul Kopelman
University of Michigan

May
Tour Speaker TBA

ISSAS ONLINE

We have recently moved and renovated our web site. 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 new site at <http://php.indiana.edu/~issas>.

If you have a non-commercial spectroscopy related website that you would like us to link on our web page please contact Denise McClenathan.

THIS MONTH IN SPECTROSCOPY

1955: Gordon, Zeiger and Townes report the first comprehensive description of *Microwave Amplification by Stimulated Emission of Radiation* [*Phy. Rev.* **99** (1955) 1264]. They named the new apparatus the “MASER”. The MASER provided the experimental proof of stimulated emission, which had been theorized by Albert Einstein in 1917. Although the development of the MASER is of great scientific importance, its successor, the LASER, described by Theodore Maiman in 1960, has truly revolutionized modern life. Charles H. Townes later shared the 1964 Nobel Prize in Physics with Soviet Scientists Nikolai Basov and Aleksander Prokhorov for their pioneering work in the field of MASER and LASER technology.

Spectroscopy Trivia:

Who developed the first mass spectrometer to analyze “Rays of Positive Electricity”?

The answer to this question can be found in next the addition of “This Month in Spectroscopy” or log on to the ISSAS home page at <http://php.indiana.edu/~issas/>.

NEWS OF ISSAS MEMBERS

We would like to establish an additional section in our newsletter devoted to recent accomplishments and upcoming events involving ISSAS members. If you have information that you would like to have published in the ISSAS Newsletter please contact Denise McClenathan.

SAS SHORT AND MINI COURSES

The Society for Applied Spectroscopy is offering the following short and mini courses at FACSS XXVI:

Fourier Transform Infrared Spectrometry

- *Peter R. Griffith*
- *James A de Haseth*

IR and Raman Chemical Imaging

- *Patrick J. Treado*
- *E. Neil Lewis*

New Trends in Chemical Speciation of Environmental Samples

- *Marc M. Lamoureux*

Capillary Electrophoresis: Rapid and Efficient Analysis of Organic and Inorganic Compounds

- *Vahid Majidi*

Putting Chemometrics to Work for You

- *Charles E. Miller*

Applying the Internet to Teaching Chemistry and Spectroscopy

- *Dr. Long*

For more information regarding the courses may be obtained from the SAS Short and Mini Course Webpage (http://www.s-a-s.org/short_course/index.html) or from:

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201-B Broadway St
Frederick, MD 21701-6501
Tel: 1-301-694-8122
Fax: 1-301-694-6860
Email: sasoffice@aol.com

WE NEED YOUR HELP

If you a suggestion for a better time or location for upcoming seminars, please let us know.

EMAIL DISTRIBUTION LIST

For those who wish to be more directly informed of the ISSAS schedule, we are in the process of compiling an email distribution list. Meeting announcements will be sent prior to each event. This can be a convenient way for you to forward information to non-members

concerning seminars that might be of interest to them. To subscribe, send a message to issas@indiana.edu and include the text :

subscribe issas

To remove your name from the list, send a message to the same location and include the text:

unsubscribe issas

GOVERNING BOARD MEETING

We have a found a representative for the upcoming governing board meeting of the society in October at FACSS. Thanks to all of you that volunteered to attend. If you have any issues you would like presented, please contact Andrew Leach. We will make sure that your ideas are presented.

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 very reasonable for both professionals and students alike. Membership also includes a subscription to the journal *Applied*

Spectroscopy. For further information, please feel free to contact any of the current officers or visit our website (<http://php.indiana.edu/~issas>).

CONTACT INFORMATION

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

Society for Applied Spectroscopy -
Indiana Section
Department of Chemistry
Indiana University
Bloomington, Indiana 47405

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The Indiana Section of the Society for Applied Spectroscopy would like give a special thank you our corporate sponsors who make this newsletter and seminar series possible:

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Indiana Section of the Society for Applied Spectroscopy
1999-2000 Seminar Series

**TWO DIMENSIONAL COHERENT VIBRATIONAL SPECTROSCOPY
USING THE OPTICAL ANALOGUE TO 2D-NMR.**

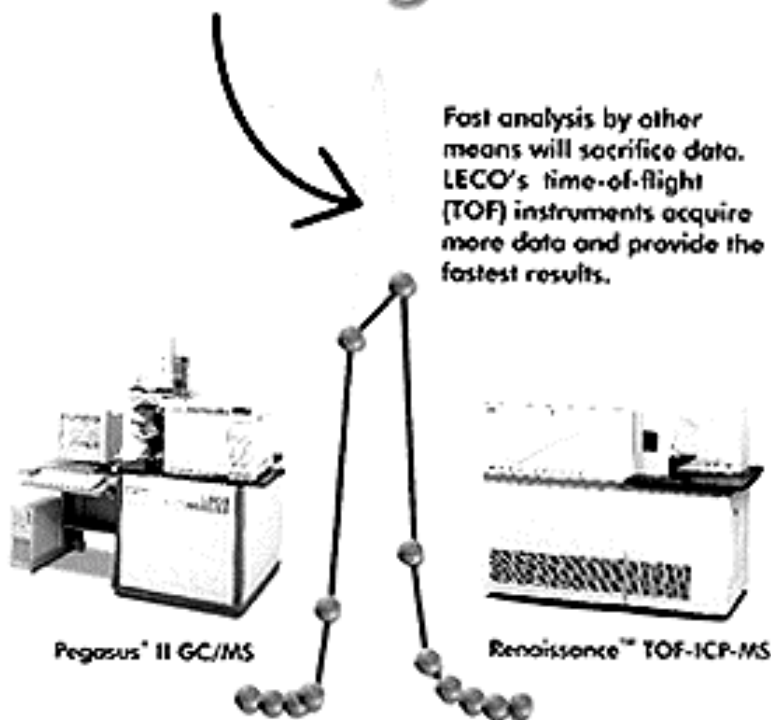
Dr. John C. Wright

Department of Chemistry, University of Wisconsin, Madison, WI 53706

Traditional spectroscopic methods are based on incoherent processes that involve population changes but it is also possible to perform spectroscopy using coherent processes. Ever since the invention of the laser, there has been a dream to develop the optical analogues to NMR spectroscopy because of its capabilities for probing detailed structural questions. In particular, the development of the optical analogue to 2D NMR methods would provide a powerful new measurement tool to probe intra- and intermolecular interactions. In this talk, we will describe the successful development of the optical analogue to 2D NMR and we will show its unique capabilities for achieving spectral selectivity. The approach uses four wave mixing where three lasers are focused into a sample and new beams are generated by nonlinear processes. Their intensity depends upon whether there are vibrational resonances with the three lasers. We have named these methods Doubly Vibrationally Enhanced Four Wave Mixing (DOVE-FWM). These methods are related to the traditional methods of infrared and Raman spectroscopy but they are capable of dissecting vibrational spectra into the components that make them up. They are the equivalent of a spectroscopic separation. Furthermore, they are capable of isolating the vibrational features that are associated with intra- and intermolecular interactions, line narrowing lines that are broadened by H-bonding, and freezing the molecular motion to obtain snap-shots of the local environment.

6:00 pm
Thursday, September 23, 1999
Chemistry Building Rm A400
Indiana University
Bloomington, IN

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Biographical Sketch

John Wright received a B.S. degree in Physics from Union College (Schenectady, NY) in 1965 followed by a Ph.D. in Physics from Johns Hopkins University in 1970. After completing his graduate studies, Dr. Wright performed post-doctoral research at Purdue University from 1970-1972 under the direction of Professor F.K. Fong. In 1972 Dr. Wright joined the faculty at University of Wisconsin-Madison as an assistant professor where he has since rose through ranks to associate professor in 1978 and professor in 1980. Dr. Wright has served as the Chair of the Analytical Science Division at University of Wisconsin-Madison as well as being a consultant for Lawrence Berkeley & Lawrence Livermore National Laboratories and the 3M Corporation. During his career Dr. Wright has received a number of honors and awards including: Phi Beta Kappa, DuPont Assistant Professor (1972), Society for Applied Spectroscopy's William F. Meggars Award (1981), A. I. Romnes Faculty Fellow (1984), American Chemical Society Award in Spectrochemical Analysis (1991), Evan Helfaer Chair of Chemistry (1991-1996), Upjohn Award for Excellence in Teaching (1992), Chancellor's Excellence in Teaching Award (1994), Kellert Mid-Career Faculty Researcher Award (1997-present). Dr. Wright's research currently focuses on the areas of laser spectroscopy and non-linear optical processes.

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Post-Seminar Dinner with
Dr. John C. Wright

Thursday, September 23, 1999

Seminar

Chemistry Building, Rm A400
Indiana University
Bloomington, IN
6:00 pm

Dinner

Janko's Little Zagreb
223 West Sixth Street
Bloomington, IN
7:30 pm

For dinner, please RSVP Andrew Leach
(issas@indiana.edu or (812) 855-7905) by September 21, 1999.

Discover The Potential

Raman Microscope

FEATURES

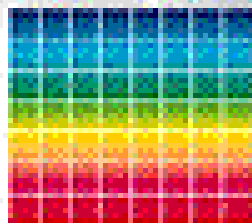
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