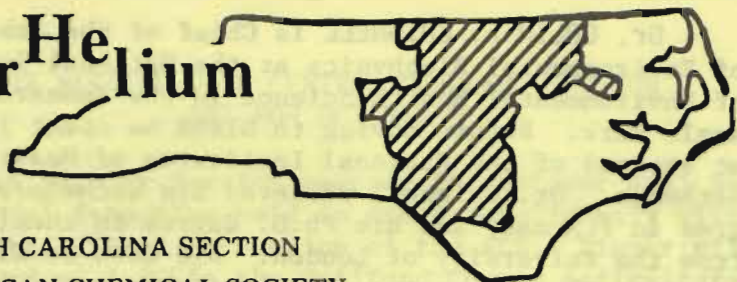


Tar Helium



NORTH CAROLINA SECTION
AMERICAN CHEMICAL SOCIETY

Vol. 10, No. 1

Raleigh, N.C.

September, 1979

"APPLICATIONS OF ESR TO BIOLOGICAL PROBLEMS"

Speaker: Dr. Colin F. Chignell
National Institute of Environmental
Health Science

Date: Tuesday, September 18, 1979

Place: North Carolina State University
Raleigh, North Carolina

Time: 5:30 Happy Hour
McKimmon Extension Education Center
(East of Beltline of Western Blvd.
at Gormon St. on southwest side of
NCSU Campus; enter parking lot
from Gormon St.)

6:30 *Dinner
McKimmon Ext. Educ. Cntr.
(\$7.00 full member; student members
half price)

8:00 Lecture
McKimmon Ext. Educ. Cntr.

*Please make reservations by Friday, September 14,
1979. Call Sue Hester at 966-1566 in Chapel Hill,
Terry Laing at 684-2414 in Durham or Linda Archer
at 737-2548 in Raleigh.

Dr. COLIN F. CHIGNELL is Chief of the Laboratory of Environmental Biophysics at the National Institute of Environmental Health Science in the Research Triangle Park. Before moving to NIEHS he spent 15 years at several of the National Institutes of Health in Bethesda. Dr. Chignell received his bachelors degree in Pharmacy and his Ph.D. degree in chemistry from the University of London. His work at NIEHS examines the interaction of chemical agents with biological systems.

* * *

Electron spin resonance is now playing an ever increasingly important roll in studies aimed at understanding biological systems at the molecular level. When used in conjunction with stable free radicals, called "spin labels", ESR has provided a wealth of information on the nature and topography of ligand binding sites in enzymes, antibodies and other proteins, the structure and dynamics of both natural and synthetic membrane systems and the conformation of nucleic acids. ESR is also an extremely useful technique for the detection and identification of free radical intermediates generated during the metabolism of foreign compounds including drugs, carcinogens and other environmental chemicals. More recently it has been possible with the aid of "spin traps" to detect highly reactive species such as the superoxide anion and the hydroxyl radical in both chemical and biological systems. The advantages of ESR in many of its applications include high sensitivity, rapid measurement and relatively easy quantitation.

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JOINT MEETING WITH CENTRAL CAROLINA SECTION SET FOR OCTOBER 9

The regular Section meeting for October will be a ^{13}C Mini Symposium held in Greensboro jointly with the Central Carolina Section of the ACS. Dinner will be served at 6:00 in the Guilford County Agricultural Center in Greensboro and the symposium will follow. Speakers include:

Time	Speaker	Topic
7:30	Dr. Peter Klein Argonne Ntl. Lab.	"An Overview of ^{13}C and Its Uses"
8:20	Dr. Frank Ivy Carroll Res. Triangle Inst.	"Applications of NMR in ^{13}C Use"
9:00	Dr. Dan Knapp Medical Univ. of South Carolina	"Applications of Mass Spectroscopy in ^{13}C Use"

Dinner reservations are required by noon on Friday, October 5 and may be made through the usual channels. Further details will be forthcoming in the October issue of the TarHelium, but please note the early meeting date. Organizer of the symposium is Dr. Gino J. Marco, Ciba-Geigy, 292-7100, ext 2532.

NOMINATIONS FOR IOTA SIGMA PI AWARDS

Iota Sigma Pi, National Honor Society for Women in Chemistry, is soliciting nominations for the Iota Sigma Pi National Undergraduate Award for Excellence in Chemistry. Senior women chemistry students from accredited colleges and universities are eligible. For details write to Ms. Margaret E. Goodrich, Division of Science and Mathematics, Seattle Central Community College, 1705 Broadway, Seattle, WA 98122. The deadline for nominations for the 1980 Award is February 1, 1980. The 1979 Iota Sigma Pi National Undergraduate Award for Excellence in Chemistry was presented to Ms. Anne Marie Learnard who was nominated

by the Chemistry Faculty of Illinois State University. Ms. Learnard has accepted a position with Mobil.

Iota Sigma Pi is also soliciting nominations for the Anna Louise Hoffman Award for Outstanding Achievement in Graduate Research. Women graduate students in chemistry from accredited colleges and universities are eligible. For details write to Dr. Celia Menendez-Botet, Biochemistry-Memorial Sloan Kettering Cancer Center, 1275 York Ave., New York, NY 10021. The deadline for nominations for the 1980 award is February 1, 1980. The 1979 Anna Louise Hoffman Award for Outstanding Achievement in Graduate Research was presented to Ms. Irene A. Gennick who was nominated by the Chemistry Faculty at the University of Minnesota.

ADVERTISING RATES

In an effort to help offset section expenses, the Executive Committee has authorized advertising for the TarHelium. Anyone wishing to submit an advertisement should send a camera ready copy to:

Mr. Randy Stewart, Advertising Manager
% Department of Chemistry
North Carolina State University
Raleigh, N. C. 27650

Advertising deadlines are the 10th of the month preceding publication. Rates are:

<u>Size</u>	<u>Single issue</u>	<u>bimonthly (4 issues)</u>	<u>monthly (8 issues)</u>
5.5cm x 5.5cm	\$15.00	\$13.50	\$12.75
5.5cm x 12.0cm	\$23.14	\$20.83	\$19.66
12.0cm x 5.5cm	\$23.14	\$20.83	\$19.66
12.0cm x 12.0cm	\$40.88	\$36.79	\$34.75
12.0cm x 19.0cm	\$60.00	\$54.00	\$51.00

The TarHelium still offers free advertising both for job openings appropriate to section members and for unemployed section members who are seeking employment.

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QUESTIONNAIRE ON LATE AFTERNOON OR EVENING SHORT COURSES
SPONSORED BY THE NORTH CAROLINA SECTION OF THE ACS

The North Carolina Section of the ACS has for several years sponsored late afternoon short courses in areas of interest to local scientists. These have been well received in the past. In an effort to plan topics for future short courses, we would appreciate your completing and returning the following questionnaire. Check areas which might be of interest to you and do not hesitate to suggest topics other than those shown. Also as an aid to the planning committee, please indicate at the bottom scientists (including yourself) who might assist in teaching a given short course.

Assuming a short course of ten hours, would you prefer:

- (a) one lecture per week for eight weeks _____
 (b) two lectures per week for four weeks _____
 (c) ten hours of lectures in two days _____
 (Friday & Saturday) _____

Specific Topics

- Elemental Trace Analysis _____
 Chemical Safety _____
 Chemical Catalysis _____
 Technical Writing and Scientific Public Speaking _____
 Newer methods in Spectroscopy _____
 Use of Lasers in Chemistry _____
 Use of Isotopes in Organic Chemistry _____
 Bio-inorganic Chemistry _____
 Organometallics in Organic Synthesis _____
 X-ray Crystallography _____
 Organic Radical Chemistry _____
 Surface Chemistry and Analysis _____
 Colloid Chemistry _____
 Programs for Quality Control & Quality Assurance _____
 (Other Areas) _____

<u>General Area</u>	<u>Specify area to be surveyed</u>	<u>Level (BS,MS,PhD)</u>
Analytical	_____	_____
Biochemistry	_____	_____
Inorganic	_____	_____
Organic	_____	_____
Physical	_____	_____
Polymer	_____	_____

Comments on who might assist in teaching a given course and their location:

Your Name _____

Address _____

Phone _____

Return as soon as possible to:

Dr. Kenneth Hanck
 Department of Chemistry
 North Carolina State University
 Raleigh, N. C. 27650

AREA SEMINARS

- Aug 30 Dr. PAUL D. ELLIS, University of South Carolina, " ^{113}Cd NMR in Bioinorganic Chemistry," 11:00 a.m., Room 308 Venable Hall, UNC-CH
- Sep 4 Dr. JOSEPH KLEIN, The Hebrew University of Jerusalem, "Directive Effects in Allylic and Benzylic Polymerization," 3:30 p.m., Room 124 Dabney, NCSU.
- 14 Dr. R. DENNING, Oxford University, "Laser Isotope Separation," 3:30 p.m., Room 130 Gross Chemical Laboratory, Duke.
- 17 Dr. RICHARD WATTS, University of California, Santa Barbara, "Inorganic Chemistry and the Sun; Solar Hydrogen Production from Water Using Transition Metal Complexes," 3:30 p.m., Room 124 Dabney, NCSU.
- 18 Dr. COLIN F. CHIGNELL, The National Institute of Environmental Health Science, ACS Lecture, 8:00 p.m., McKimmon Extension Education Center, NCSU.
- 21 Dr. J. C. BONAVENTURA, Duke University Marine Laboratory, "Structure-Function and Assembly in Hemocyanins of Arthropods and Molluscs, 3:30 p.m., Room 130 Gross Chemical Laboratory, Duke.
- 24 Dr. LUCA MOGGI, University of Bologna, "Photochemical Conversion of Solar Energy," 3:30 p.m., Room 124 Dabney, NCSU.
- 27 Dr. SIEGFRIED HÜNIG, Barvarian Julius Maximilian University of Würzburg, "A General Structural Principle for Stepwise Electron Transfer," 11:00 a.m., Room 308 Venable Hall, UNC-CH.
- 28 Dr. R. A. HEGSTROM, Wake Forest University, "Some Theoretical Aspects of Parity Violating Weak Interactions in Atoms and Molecules," 3:30 p.m., Room 130 Gross Chemical Laboratory, Duke.
- Oct 4 Dr. M. A. EL-SAYED, University of California, Los Angeles, "Time-Resolved Resonance Raman and Fluorescence Spectroscopies," 11:00 a.m., Room 308 Venable Hall, UNC-CH.
- 5 Conoco Career Seminar (Speaker to be announced), "Career Opportunities in the Petrochemical Industry," 3:30 p.m., Room 130 Gross Chemical Laboratory, Duke.
- 8 Dr. JULIAN HEICKLEN, Pennsylvania State University, "The Chemistry of Photochemical Smog," 3:30 p.m., Room 124 Dabney, NCSU.
- 9 Dr. PETER KLEIN, Argonne National Laboratory, Dr. FRANK IVY CARROLL, Research Triangle Institute, and Dr. DAN KNAPP, Medical University of South Carolina, " ^{13}C Mini Symposium," Joint ACS meeting with the Central Carolina Section, 7:30 p.m., Guilford County Agricultural Center, Greensboro.

TARHELIUM IS PUBLISHED BY THE NORTH CAROLINA SECTION OF THE AMERICAN CHEMICAL SOCIETY. THE VIEWS EXPRESSED HEREIN ARE NOT NECESSARILY THOSE OF THE SECTION, DIRECT ALL CORRESPONDENCE TO DR. WILLIAM L. SWITZER, EDITOR, C/O CHEMISTRY DEPARTMENT, NORTH CAROLINA STATE UNIVERSITY, RALEIGH, N. C. 27650.

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