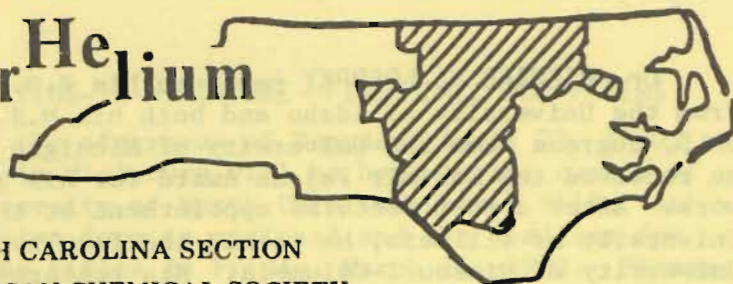


Tar Helium



NORTH CAROLINA SECTION
AMERICAN CHEMICAL SOCIETY

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Raleigh, N.C.

February, 1980

NITROSAMINE CARCINOGENESIS: NITROSAMINE
FRAGMENTATION AND AMINE NITROSATION

Speaker: Dr. Richard N. Loepky
University of Missouri - Columbia

Date: Tuesday, February 12, 1980

Place: Burroughs Wellcome Company
3030 Cornwallis Road
Research Triangle Park, N. C.

Time: 5:30 Happy Hour
Hors D'oeuvres - Cocktails
Burroughs-Wellcome
Exit I-40 at Cornwallis Road

6:30 Lecture
Auditorium
Burroughs Wellcome

Dr. RICHARD N. LOEPPKY received his B.S. degree from the University of Idaho and both his M.S. and Ph.D. degrees from the University of Michigan where he received the Kasimir Fajans Award for his doctoral work. After a post doctoral appointment at the University of Illinois, he joined the faculty of the University of Missouri-Columbia. His research has centered around organonitrogen and organosulfur chemistry. His work includes studies of the mechanism of nitrosamine carcinogenesis.

* * *

Numerous investigations have recently shown nitrosamines to be contaminants in certain food, animal feeds, cosmetic preparations, machine cutting fluids and other materials. Animal studies on over 150 structurally variant nitrosamines have shown them to be a group of extremely potent organ selective carcinogens. A brief overview of the existing mechanism of nitrosamine carcinogenesis beginning at the environmental level is presented. It will be shown that amine nitrosation can give rise to a wider variety of structurally variant nitrosamines than originally thought. The discovery of a fragmentation reaction of β -oxidized nitrosamines has raised serious questions as to the methods of nitrosamine analysis in "natural" samples. The fragmentation reaction may also result in the carcinogenic potentiation of environmentally occurring nitrosamines and is almost certainly involved in nitrosamine metabolism. The notion of threshold levels in chemical carcinogenesis will be examined in light of this discussion.

DINNER ARRANGEMENTS FOR FEBRUARY MEETING

Once again Burroughs Wellcome has graciously agreed to serve as host for cocktails and Hors D'oeuvres preceding this month's meeting. A small group will accompany the speaker to dinner following his presentation. Anyone wishing to join the speaker, please contact Dr. Getzen during the cocktail hour.

MEETING-IN-MINIATURE - FIRST CALL FOR PAPERS

On the afternoon of Tuesday, April 22, 1980, the Meeting-in-Miniature will be held on the campus of the University of North Carolina-Chapel Hill. An application form is enclosed and the deadline for receiving titles is Friday, March 14, 1980. Please respond early to facilitate preparing the complete program for the April TarHelium.

Contributions are encouraged from both academic and nonacademic laboratories. Participation by industrial and government laboratories has been minimal; however, the Editor hopes that scientists from these laboratories will participate this year. The meeting is an excellent opportunity for the academic and nonacademic scientific communities to interact and to share ideas that might prove mutually interesting.

HIGH SCHOOL CHEMISTRY TEACHERS AWARD

Letters have been sent to the principals of all high schools within the Section announcing the 1980 High School Chemistry Teacher's Award. The award is a grant of up to \$400 for tuition and fees for any course or courses in the chemical sciences. Eligible candidates must teach within the Section which includes the following counties: Bladen, Caswell, Chatham, Cumberland, Durham, Edgecomb, Franklin, Granville, Halifax, Harnett, Hoke, Johnston, Lee, Martin, Moore, Nash, Northampton, Orange, Person, Randolph, Robeson, Sampson, Scotland, Vance, Wake, and Warren. Teachers who have interest should obtain further details from their principal or from the Award's Committee Chairman, Dr. W. E. Hatfield, Department of Chemistry, University of North Carolina, Chapel, Hill, N. C. 27514 (phone 966-2296). Members who know of high school chemistry teachers having interest should please bring this award announcement to their attention.

CENTENNIAL SCHOLARSHIP AWARD

The North Carolina Section of the ACS announces its fifth annual CENTENNIAL SCHOLARSHIP AWARD for the Summer of 1980. It carries a stipend of \$800 (tax free).

Eligibility Requirements:

- (1) Membership or Associate Membership in the American Chemical Society.
- (2) Attendance at a Graduate or Professional School within the geographic boundaries of the North Carolina Section of the ACS.
- (3) Successful completion of at least one year of graduate or professional study toward an advanced degree by the end of the academic year.
- (4) Must have no other obligations for which income is earned during the tenure of the scholarship.

DEADLINE FOR RECEIPT OF APPLICATION IS MARCH 14, 1980.

Send Application to: Dr. Keith Lawson
P. O. Box 12274
Research Triangle Park,
N. C. 27709

Application must be accompanied with:

- (1) One copy each of both the undergraduate and graduate (or professional school) transcripts (listing of courses and grades will be acceptable).
- (2) Two letters of recommendation: One from research director and one from another graduate professor.
- (3) No more than a 1000 word written summary by the applicant of the research project, which must be in a chemically related area.

(continued p. 9)

TUITION-FREE SHORT COURSE ON HANDLING CHEMICAL CARCINOGENS

The Illinois Institute of Technology-Research Institute and the National Cancer Institute are jointly sponsoring a free three-day short course from February 19-21 at the University of North Carolina-Chapel Hill. The course is entitled "The Safe Handling of Chemical Carcinogens in the Research Laboratory."

This course consists of three days of lectures and discussions. Course faculty is composed of scientists and engineers currently actively involved in research on chemical carcinogens and laboratory safety. Topics presented will include: chemical laboratory safety, hazards in animal care, the in vitro laboratory, aerosol hazards, risk assessment, laboratory design, decontamination and disposal, psychology of safety, and medical surveillance.

Each participant receives a course manual, which includes lecture outlines and supporting material such as bibliographies, reprints, charts, tables, abstracts, and summaries.

The course is aimed at senior level technicians and scientists working in fields related to chemical carcinogenesis. Research workers from laboratories with National Cancer Institute contracts or grants are especially encouraged to apply.

Enrollment is limited, and early application is recommended. Acceptance notices will be sent upon receipt of application. Applications will be informally accepted by phone pending receipt of written application. Call Dr. James N. Keith in Chicago (312) 567-4318. A limited number of forms are available from Mr. Gerald R. Shirley, Assoc. Director, OSH Public Safety, N. C. State University, Raleigh, N. C. 27650. Similar forms are undoubtedly available from public safety offices on the Duke and UNC-CH campuses as well as companies in the Research Triangle Park; however, I have not been able to identify exact sources.

NORTH CAROLINA SECTION
AMERICAN CHEMICAL SOCIETY

Proposed Budget for 1980

<u>Income</u>	<u>1980 Proposed</u>
ACS Allotment	4,803
New Members	150
Savings Interest	500
Short Courses	2,500
Tarbellium Advertisements	<u>400</u>
Total Income	8,353
 <u>Expenses</u>	
Awards	
Centennial Scholarship	800
High School Students	100
High School Teacher	<u>400</u>
Total Awards	1,300
Donations	
Polymer Group	100
N. C. Academy of Sciences	<u>100</u>
Total Donations	200
Short Courses	
Honoraria	1,000
Classroom Aids	100
Printing	100
C. E. Certificates	<u>25</u>
Total Short Courses	1,225
Meetings	
Honoraria	525
Travel and Expenses	1,000
Social Hours and Meals	1,000
Meeting-in-Miniature	<u>200</u>
Total Meetings	2,725
Tarbellium	2,125
Administrative	
Travel	400
Miscellaneous	200
Contingency	<u>178</u>
Total Administrative	778
TOTAL EXPENSES	8,353

APPLICATION
 Meeting-in-Miniature
 Tuesday, April 22, 1980
 Venable Hall
 University of North Carolina-Chapel Hill

Author(s): _____

Position(s): _____

Presented by: _____

Institution: _____

Title of Paper: _____

Section: ___ Analytical ___ Inorganic
 ___ Biochemical ___ Organic
 ___ Chemical Education ___ Physical
 ___ Polymer

Type: Regular Session Only: ___
 *Either Regular or Poster Session: ___
 *Poster Session Only: ___

Type of Projector (if any): _____

*If sufficient interest is shown, a poster session will be added to this year's program.

Application Deadline: Friday, March 14, 1980

Mail to: Dr. William F. Gutknecht
 Research Triangle Institute
 P. O. Box 12194
 Research Triangle Park, N.C. 27709

THE LANGUAGE OF SCIENCE

Rate Processes of Extractive Metallurgy

edited by **Hong Yong Sohn** and **Milton E. Wadsworth**

This book explores significant areas of extractive metallurgy from the perspective of heterogeneous kinetics. Special emphasis is given to rate processes, fundamental mechanisms of reaction, and data for engineering applications. approx. 465 pp., illus., 1979, \$42.50 (\$51.00/£26.78 outside US)

Surface and Colloid Science Volume 11

Experimental Methods

edited by **Robert J. Good** and **Robert R. Stromberg**

The contributors to this volume offer authoritative, critical essays on a number of experimental techniques in surface and colloid science. They evaluate several methods of study, including electron probe microanalysis, measurement of contact angles, pendant drop methods of measuring surface tension, microelectrophoresis, and detergency. 360 pp., illus., 1979, \$35.00 (\$42.00/£22.05 outside US)

Pulverized-Coal Combustion and Gasification

Theory and Application for Continuous Flow Processes

edited by **L. Douglas Smoot** and **David T. Pratt**

This volume provides a comprehensive and much-needed treatment of analytical modeling of coal reaction processes, emphasizing those processes utilizing finely pulverized coal entrained in a gaseous phase. Topics discussed include turbulent and laminated reacting multiphase systems, gas-particle conductive interactions, gas-phase combustion, pollutants, computer predictions for coal gasifiers, and recent trends in research and development. 352 pp., illus., 1979, \$39.50 (\$47.40/£24.89 outside US)

Applied Chemical Process Design

by **Frank Aerstin** and **Gary Street** with a foreword by **K. D. Timmerhaus**

This handy, concise reference manual, written for use in the office or in the field, provides chemical process engineers with a compilation of many useful procedures for the evaluation of preliminary design of new chemical process equipment. 312 pp., illus., 1978, \$25.00 (\$30.00/£15.75 outside US)

Topics in Surface Chemistry

edited by **Eric Kay** and **Paul S. Bagus**

This volume examines surface studies in electrochemical systems, ordered arrays of organic molecules at surfaces and interfaces, atomic and molecular scattering from surfaces, aspects of surface chemical bonding, and optical excitations at surfaces. A volume in *The IBM Research Symposia Series*. 416 pp., 1978, \$42.50 (\$51.00/£26.78 outside US)

Chemical Kinetics and Transport

by **Peter C. Jordan**

This new text, designed for use in advanced undergraduate and graduate level courses, examines equilibrium kinetic theory, transport in both gas and solution, phenomenology, mechanisms of thermal and photochemical reaction, single-collision chemistry and calculation of thermal rate constants. Numerous examples are included to illustrate general principles. 384 pp., 1979, \$21.50 (\$25.80/£13.55 outside US)

Available from **John Wiley & Sons Limited** in the **United Kingdom, Europe, and the Middle East, excluding Israel.**

Photoelectrochemistry

by **Yu. Ya. Gurevich**, **Yu. V. Pleskov** and **Z. A. Rotenberg** translated from Russian by **H. Wroblowa** translation edited by **H. Wroblowa** and **B. E. Conway**

Based on an original Russian language work, updated and revised in conjunction with recent developments, *Photoelectrochemistry* presents the theory of photoemission in a novel and accessible fashion that does not require familiarity with quantum mechanics. Special emphasis is also given to the close ties among photoemission, electrochemical, and radiation-chemical problems. In addition, theoretical formulas are presented at the beginning of experimental sections, enabling the reader to use the formulas as a guide while exploring the test procedures and results. approx. 260 pp., illus., 1979, \$39.50 (\$47.40/£24.89 outside US)

Quantum Electrochemistry

by **John O'M. Bockris** and **Shahed U. M. Khan**

This work emphasizes the molecular model approach in electrode kinetics, while also recognizing the contributions made from the continuum dielectric viewpoint. This important, breakthrough volume will serve as both a text for graduate students and an interdisciplinary guide for the practicing electrochemist. approx. 510 pp., 1979, \$49.50 (\$59.40/£31.19 outside US)

Aspects of Mechanism and Organometallic Chemistry

edited by **James H. Brewster**

Dividing this subject matter into two broad groups—the interplay of structure and mechanism, and the use of organometallics in synthesis—this volume provides an extensive, broadly based examination of the most recent developments in mechanism and organometallic chemistry. 362 pp., 1979, \$39.50 (\$47.40/£24.89 outside US)

Correlation Analysis in Chemistry Recent Advances

edited by **N. B. Chapman** and **J. Shorter**

Drawing upon research from a wide range of chemical and related sciences, internationally renowned scientists examine in detail the various applications of correlation analysis. The traditional areas associated with Hammett and Taft, as well as the numerous applications of correlation analysis to spectroscopy, are reviewed, and an extensive critical compilation of substituent constants is offered. 560 pp., illus., 1978, \$49.50 (\$59.40/£31.19 outside US)

Fundamental Research in Homogeneous Catalysis

Volume 2

edited by **Yoshio Ishii** and **Minoru Tsutsui**

Fundamental Research in Homogeneous Catalysis disseminates the latest information for increasing selectivity of desired end products and decreasing waste of chemicals and energy resources in numerous industrial processes. This volume examines such topics as molecular metal cluster compounds, supported metal complex catalysts, and asymmetric catalysis. 316 pp., 1978, \$32.50 (\$39.00/£20.48 outside US)



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New York, N.Y. 10011

In United Kingdom: Black Arrow House,
2 Chandos Road
London NW10 6NR, England

- (4) An outline of the portion of the work planned for the period of the award (Summer 1980).

The Scholarship will be awarded on the basis of excellence of academic record, superior performance as a teaching assistant (where applicable), and promise in research and quality of application. It will be given *primarily* on the basis of past performance, rather than the quality of the actual research proposed. The award, which is not subject to renewal, will be announced at the Meeting-in-Miniature on April 22, 1980. The recipient is expected to give a 5-minute presentation on this work at one of the fall meetings of the Section.

AREA SEMINARS

- Feb 12 Dr. RICHARD H. LOEPPKY, University of Missouri-Columbia, "Nitrosamine Carcinogenesis: Nitrosamine Fragmentation and Amino Nitrosation," ACS Lecture, 6:30 pm, Auditorium Burroughs Wellcome Company.
- 15 Dr. D. H. POND, Tennessee Eastman Company, "Research at Tennessee Eastman," 3:30 pm, Room 103 Gross Chemical Laboratory, Duke.
- 18 Dr. TOM O'HAVER, National Bureau of Standards, To be announced, 3:30 pm, Room 124 Dabney Hall, NCSU.
- 27 Dr. JOHN BERCAW, California Institute of Technology, "Homogeneous Activation of Carbon Monoxide with Organometallic Compounds of the Early Transition Metals," 3:30 pm, Room 124 Dabney Hall, NCSU.
- 28 Dr. JOHN BERCAW, California Institute of Technology, "Homogeneous Activation of Carbon Monoxide," 11:00 am, Room 308 Venable Hall, UNC-CH.
- 29 Dr. H. L. PARDUE, Purdue University, "Evaluation of Imaging Detectors for Analytical Spectroscopy," 3:30 pm, Room 103 Gross Chemical Laboratory, Duke.
- Mar 3 Dr. W. BENTRUDE, University of Utah, "Conformations of Phosphorous Containing Ring Systems Related to Cyclic AMP and Cyclophosphamide," 3:30 pm, Room 103 Gross Chemical Laboratory, Duke.
- 7 Dr. T. N. SALZMANN, Merck, Sharpe and Dohme, "Selected Topic from Antibiotic Biochemistry," 3:30 pm, Room 103 Gross Chemical Laboratory, Duke.

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