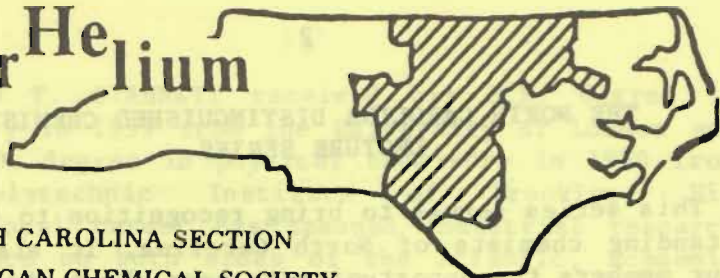


Tar Helium



NORTH CAROLINA SECTION  
AMERICAN CHEMICAL SOCIETY

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Vol. 15, No. 7

March, 1985

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The North Carolina  
Distinguished Chemist Lecture Series

Presents

RADIATION INDUCED CATIONIC POLYMERIZATION

by

Vivian T. Stannett  
Camille Dreyfus Professor of Chemical Engineering  
North Carolina State University

Tuesday, March 19, 1985

Social: 5:30 pm, "Carolina Room" of the Carolina Inn  
UNC-Chapel Hill

Dinner: 6:30 pm, Also in the "Carolina Room"  
UNC-Chapel Hill  
(\$11.00 for members, \$5.50 for  
students)

Lecture: 8:00 pm, 207 Venable Hall (Chemistry Bldg.)  
UNC-Chapel Hill

For reservations, please call one of the following by  
Friday, March 15: In Durham, Sue Dickerson at 684-  
2414; in Chapel Hill, Debbie Edwards at 962-2172; and  
in Raleigh, Joyce Dunn at 737-2545.

THE NORTH CAROLINA DISTINGUISHED CHEMIST  
LECTURE SERIES

This series serves to bring recognition to the outstanding chemists of North Carolina. It also gives our members the opportunity to hear about the current research being conducted by our distinguished colleagues. In December, we recognized Professor Robert G. Parr of UNC-Chapel Hill as our first speaker of this academic year. We are pleased to announce that our second speaker is Professor Vivian T. Stannett, who will give his presentation at the March meeting at UNC-Chapel Hill.

"Radiation Induced Cationic Polymerization"

Abstract

The ability of high energy radiation, both electrons and gamma rays, to initiate the cationic polymerization of liquid vinyl monomers was first demonstrated in 1957 with isobutylene. Previously, only free radical polymerizations had been observed. Since then, extensive research has been conducted with a number of vinyl monomers and recently with ring-opening polymerizations. It has been clear since 1967 that the cations are unpaired and that estimates of the propagation rate constants in the total absence of gegen ions could be obtained. This work has been pursued in the speaker's laboratory in conjunction with his colleagues, notably Pierre Sigwalt and Alain Deffieux at the Universite' Pierre et Marie Curie, Paris.

Recent results of this work will be presented and discussed. Vinyl ether and p-methoxystyrene have been investigated. In addition the ring opening polymerization of the cyclodimethyl siloxanes will be described. In the case of vinyl monomers strong solvation effects appear to be operating, including in the case of bulk polymerization, solvation by the growing chains themselves.

VIVIAN T. STANNETT received his B.S. degree in chemistry in 1939 from the University of London and his Ph.D. degree in physical chemistry in 1950 from the Polytechnic Institute of Brooklyn. His professional career has spanned industrial research experience on both sides of the Atlantic, academic appointments at Syracuse University and North Carolina State University, administrative responsibilities as Associate Director of the Camille Dreyfus Laboratory at RTI, and later as Vice Provost and Dean of the Graduate School at NCSU.

Dr. Stannett's professional activities have included tenure as Chairman of the North Carolina Section of the ACS in 1971, Chairman of the national ACS Polymer Division in 1977, and his earlier contributions in helping establish the North Carolina ACS Polymer Group. Dr. Stannett's numerous awards include the O. Max Gardner Award of the UNC system and the North Carolina Science Medal bestowed by the state governor.

#### WORKSHOPS

The Institute for Chemical Education is sponsoring a six week program during June in a wide variety of areas at four campuses: University of Wisconsin at Madison; University of Arizona; University of California at Berkeley; and University of Maryland.

Total cost is \$3,300. A stipend of \$2,800 is offered, with a cost to you of \$500. The exact dates of the workshops differ with the subject area. For more information, contact Carolyn Morse, NC School of Science and Mathematics, P.O. Box 2418, Durham, NC 27705.

The North Carolina School of Science and Mathematics is sponsoring a two week summer workshop for chemistry teachers from June 17 to June 28. The workshop is intended for chemistry teachers who are teaching out of field or as a refresher course.

Total cost is \$400. A scholarship of \$250 is offered with a cost to you of \$150. For more information contact Carolyn Morse at the address listed in the preceding paragraph.

NORTH CAROLINA SECTION, ACS  
HIGH SCHOOL CHEMISTRY TEACHER  
PROFESSIONAL DEVELOPMENT AWARDS

This year the North Carolina Section of the ACS is offering two \$500 Professional Development Awards for high school teachers. The purpose of this program is to help support the efforts of chemistry teachers to improve their professional preparation. We invite you to submit a proposal which outlines your plan for professional development. Proposals should be no longer than 1250 words. They will be reviewed independently by three ACS members, at least two of whom will be high school chemistry teachers. Criteria for selection will be the impact of the proposed activity or activities on improvement of your knowledge of chemistry and/or skills for teaching chemistry. Winners will be expected to report the benefits of this professional development activity at the ACS Section Meeting-in-Miniature in April, 1986.

Qualifications: (1) You must have taught one chemistry class for at least one year and be scheduled to teach at least one chemistry class next year. A letter is needed from the principal of your school, verifying teaching experience and next year's assignment.

Proposal: (1) In 1250 words or less, describe the anticipated professional development activity and its expected effect on your knowledge of chemistry and/or skills for teaching chemistry. Include a budget describing the way in which the award will be spent.

Deadline: Applications must be postmarked no later than March 20, 1985. Winners will be notified and will be announced at the Meeting-in-Miniature on April 20, 1985.

Eligibility: To be eligible for this professional development award, you must teach within the counties served by the North Carolina Section of the ACS.

Send your proposal and your principal's verification to:

Ms. Carolyn Morse  
North Carolina School of  
Science and Mathematics  
P.O. Box 2418  
Durham, NC 27705

Telephone: 919-683-6079

MEETING-IN-MINIATURE BENEFICIAL TO  
HIGH SCHOOL TEACHERS AND STUDENTS

The American Chemical Society is sponsoring a Meeting-in-Miniature on April 20 on the campus of North Carolina State University. It is designed to give an opportunity to all chemists in our area to make presentations describing their research. It is a good opportunity for student researchers to get acquainted with the atmosphere and operation of scientific meetings. The ACS would like to invite high school teachers and/or their students to submit papers (See p. 6 of this issue.), but you are encouraged to attend whether or not you present a paper.

For additional information, contact Carolyn Morse at the address listed above.

## MEETING-IN-MINIATURE - FINAL CALL FOR PAPERS

The annual Meeting-in-Miniature is scheduled for Saturday, April 20, on the campus of NC State University. The meeting will start at approximately 8:30 am and will end at noon with a luncheon and presentation of awards. An application for presentation of a paper is included below. The deadline for receiving titles has been extended to March 22, 1985.

Contributions are encouraged from both academic and non-academic laboratories. Participation by government and industrial laboratories has increased over the last several years and the Executive Committee hopes that participation by non-academic labs will be even greater this year.

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APPLICATION  
Meeting-in-Miniature  
Saturday Morning, April 20, 1985  
NCSU, Raleigh, NC

Author(s): \_\_\_\_\_

Position(s): \_\_\_\_\_

Presented by: \_\_\_\_\_

Institution: \_\_\_\_\_

Title of Paper: \_\_\_\_\_

Session:	<input type="checkbox"/> Analytical	<input type="checkbox"/> Inorganic
	<input type="checkbox"/> Biochemical	<input type="checkbox"/> Organic
	<input type="checkbox"/> Chemical Education	<input type="checkbox"/> Physical
	<input type="checkbox"/> Polymer	<input type="checkbox"/> Other

Regular session Only:  \*Poster session only:

Either regular session or poster session:

\*Type of projector needed (if any): \_\_\_\_\_

Application deadline: Friday, March 22, 1985

Mail application to:

Dr. Eric Bigham  
Burroughs Wellcome Co.  
3030 Cornwallis Rd.  
RTP, NC 27709

\*If enough interest, poster session to be added.

## APPLY NOW FOR CENTENNIAL SCHOLARSHIP AWARD

The North Carolina Section of the ACS announces its CENTENNIAL SCHOLARSHIP AWARDS for 1985. Up to three awards of \$500 each will be made: normally, two will be awarded to graduate students from doctoral granting institutions and one to a student from an institution offering the master's degree or significant opportunities in research to undergraduate students. These awards will recognize achievement and potential in chemistry research and should be used to help the student further that potential.

**AWARD CRITERIA:** research accomplishments, excellence of academic record, quality of the application.

**ELIGIBILITY:** attendance at a college or university within the Section territory and research in a department of chemistry, biochemistry, or chemical engineering.

**APPLICATION MUST INCLUDE:**

1. a summary, no more than 1000 words, written by the applicant describing research accomplishments or progress;
2. a letter of recommendation from the student's research director;
3. a copy or, copies, of the appropriate transcript(s) (graduate or undergraduate); and
4. a description of how the award will be used.

**RESTRICTIONS ON USE OF AWARD:**

The student chosen for an award should consult with the research advisor about how to use it. Travel to a national ACS meeting, tuition for an ACS short course, purchase of technical books, or support of research would all be suitable uses. The award must not be used to support research already funded by other sources.

**DEADLINE:** Applications must be submitted by April 1, 1985, to:

Dr. Robert W. Shaw  
Army Research Office  
Post Office Box 12211  
Research Triangle Park, NC 27709

The awards will be announced at the Meeting-in-Miniature on April 20, 1985.

## INTERNATIONAL CHEMISTRY OLYMPIAD

This year for the first time, the North Carolina Section of the American Chemical Society will participate in the International Chemistry Olympiad. Students from the Section will be chosen by a competitive test provided through the national ACS. The top eight students will be sent (expenses paid by the local Section) to the national competition in Washington, DC, on April 20 or 27. The top 20 students in the national competition will go to the Air Force Academy for a two week study camp. At the end of June, these students will leave for Europe for competition with the European Chemistry Olympiad team, allowing the American team to spend two weeks in Europe! So send your outstanding chemistry students to the qualifying test.

The local ACS qualifying test to determine our finalists to the National Chemistry Olympiad will be given on Saturday, March 16, at 1:00 p.m. at the North Carolina School of Science and Mathematics, 1912 West Club Boulevard in Durham. NO FEE! The test will take approximately two hours.

Please submit to Carolyn Morse (address and telephone number listed below) the number of students planning to take the test so that the proper number of seats can be reserved.

Carolyn Morse  
North Carolina School of  
Science and Mathematics  
P.O. Box 2418  
Durham, NC 27705

Telephone: 919-683-6079



#### DR. PIERRE LASZLO TO PRESENT SPRING SHORT COURSE

Dr. Pierre Laszlo of the University of Liege, Belgium, will present the Section's spring short course entitled, "Modern Multinuclear Magnetic Resonance." This course will include C-13 NMR, deuterium NMR, transition metal NMR, P-31 NMR, two-dimensional NMR and other assorted topics. The focus of the course will be on applications of interest to practicing chemists.

The course will be held on June 6 and 7 at a site yet to be determined. A complete list of topics to be present, registration information and location will be announced in the next TarHelium.

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#### PLANNING RETREAT RESULTS IN NUMEROUS IDEAS FOR NEW SECTION ACTIVITIES

The large fireplace at the Pineview Conference Center was a welcome sight to the 20 people who gathered on a cold January 26 to "brainstorm" for new ideas for Section projects. Under the leadership of Dr. Eric Bigham, four general topic areas were developed. Included were member services, Section meetings, educational activities and public relations. Specific topics discussed under these four areas included, academic/industrial interaction, enhancement of publications, Section interactions with student chapters, career and financial management, continuing education for professional chemists, promotion of public policies of favor to chemists, and the public image of chemistry. A full report of the meeting is in preparation and will be available at a later date. This report may also be published in installments in the TarHelium.

## CRITICAL EQUIPMENT NEEDS

Many of the academic and industrial laboratories in our area may have surplus or unused equipment which could be of use in classrooms. Please supply to the Section's High School Committee a list of your critical needs, and we will try to match those needs with a local resource. Send your list of no more than 25 items, along with your name, school, and a telephone number at which you may be reached in the evenings to:

Carolyn Morse  
North Carolina School of  
Science and Mathematics  
P.O. Box 2418  
Durham, NC 27705

Office Telephone: 919-683-6079

## HOW CAN WE HELP YOU?

If you have suggestions, questions or comments for the High School Committee, please let us hear from you. Send your letters to Carolyn Morse at the address and telephone number listed above.

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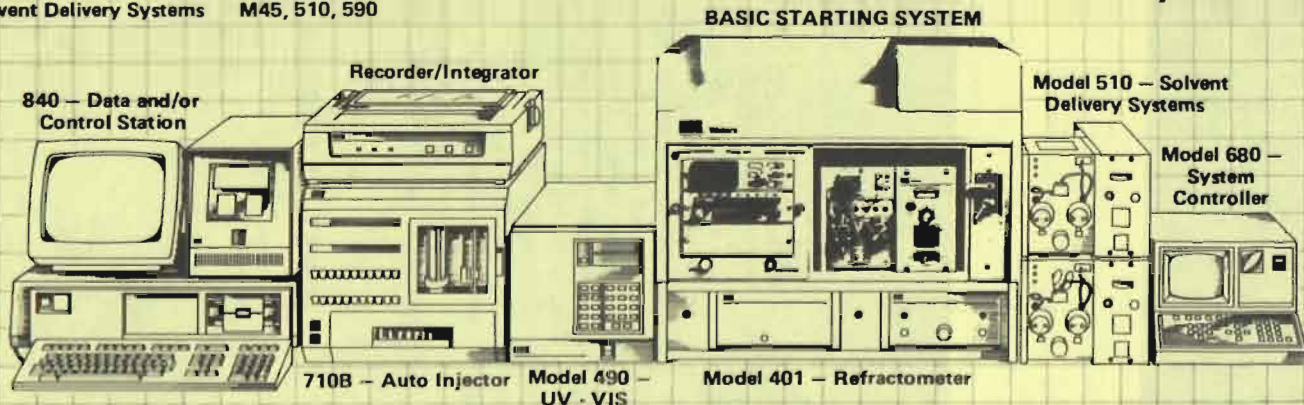
In an effort to get its messages to subscribers in a more timely fashion, the February issue of the TarHelium was mailed by first class permit. An informal poll was taken and all individuals contacted stated that they received their TarHeliums in plenty of time to plan attendance at the February meeting. Please contact the editor if this issue, or the February issue, did not reach you within an acceptable time frame.

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