

THE

# TarHelium



A Publication of the North Carolina Section of the American Chemical Society

Vol. 18, No. 5

January 1988

## **Electron Conduction, Diffusion, and Plasticization Phenomena in Thin Polymer Films by Solid State Electrochemistry**

*A Lecture by*

**Dr. Royce W. Murray**

Department of Chemistry

University of North Carolina at Chapel Hill

Tuesday, January 26, 1988

Faculty Club

North Carolina State University

*A joint meeting of the local section and the polymer subgroup*

*Social Hour*

6:00 p.m.

*Dinner*

7:00 p.m.

*Lecture*

8:00 p.m.

The dinner cost is \$10 for members and guests and \$5 for students. Please make reservations for the dinner by phoning one of the following people by Wednesday morning, January 20: in Chapel Hill, Debbie Edwards, 962-2172; in Durham, Carolyn Bean, 684-2414; in Raleigh, Joyce Dunn, 737-2545; in Fayetteville, Sandra Smith, 486-1500. To cancel reservations for the meal, please call Debbie Edwards in Chapel Hill at 962-2172.

### **Directions to the NCSU Faculty Club**

The NCSU Faculty Club is located at the intersection of the Beltline and Hillsborough Street in Raleigh. It is directly across the Beltline from Meredith College and between the Beltline and the NCSU Veterinary School and fairground complex. If approaching from Durham or Chapel Hill on I-40 east, take the Wade Ave. exit to the Beltline heading south toward Sanford. Travel one exit to Hillsborough St. and turn right onto Hillsborough St. The Faculty Club is the first right turn off Hillsborough St. If approaching from Fayetteville or Clayton, take I-40 west from South Saunders St. to the Beltline. Head north on the Beltline toward Wake Forest. Hillsborough St. is the third exit off the Beltline. After following the exit loop, turn right onto Hillsborough St. The Faculty Club is the second right turn off Hillsborough St.

**Royce W. Murray**—Professor Murray was born in Birmingham, Alabama in 1937. He received a B.S. degree in chemistry from Birmingham Southern College in 1957 and his Ph.D. in analytical chemistry from Northwestern University in 1960 under the supervision of Professor Richard C. Bowers. His thesis dealt with the transport of electroactive ions through ion conductive membranes. Professor Murray joined the faculty at the University of North Carolina as Instructor in 1960, became Professor in 1969, and Kenan Professor in 1980. He has served as Chemistry Department Acting Chair (1970-71), Vice Chair (1971-75) and Chairman (1980-1985). Professor Murray is presently Natural Science Division Chairman and is Adjunct Professor of the Curriculum in Applied Sciences.

Professor Murray's research interests have included electroanalytical techniques and their theoretical principles; the chemistry, molecular design, and analysis of surfaces and of electrochemically reactive polymers; mass and electron transport phenomena in thin films; electrocatalysis; macromolecular electronics; and electrode-polymer film microstructures. He has published about 200 research papers in these areas. In 1975 Dr. Murray and his students described the chemical syntheses and electrochemistry of monomolecular layers of electroactive reagents covalently bonded to electrode surfaces. This theme of controlling electrode behavior by molecular design of the electrode surface is commonly known as chemically modified electrodes and has grown to encompass a large and vigorous range of research activities in molecular electrochemical science. Dr. Murray continues to contribute actively to the chemically modified electrode field. His most recent research includes applying polymer film microstructures to electron transport and solid state voltammetry in rigid and semirigid polymeric media. His research is supported by the National Science Foundation, the Office of Naval Research, the Department of Energy, and the North Carolina Biotechnology Center.

Dr. Murray has received the Sloan and Guggenheim Fellowships, the 1987 North Carolina Distinguished Chemistry Award of the North Carolina Institute of Chemists, and the 1987 Carl Wagner Memorial Award of the Electrochemical Society. He will receive the Charles N. Reilley Award at the 1988 Pittsburgh Conference on Analytical Chemistry.

Dr. Murray has been colleague to 51 Ph.D. post-graduate students, 16 of whom now hold academic appointments. He has been active in national organizations including serving as an Associate Editor for the *Journal of the Electrochemical Society*, NSF Program Director for Chemical Analysis (1971-72), on the Board of Directors of the Society for Electroanalytical Chemistry, and on the Advisory Panels for the National Science Foundation, Fulbright Foundation, Army Office of Research, Air Force Office of Research, North Carolina Energy Institute, and *Analytical Chemistry*. He is presently a member of the American Chemical Society Committee on Publications and is Program Coordinator of the ACS Division of Analytical Chemistry.

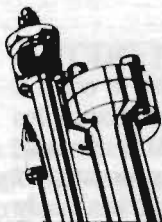
## MOLECULAR MECHANICS TOPIC OF UPCOMING SEMINAR AT UNC

Professor Norman L. Allinger of the University of Georgia will present a seminar entitled "Recent Work in the Area of Molecular Mechanics" Tuesday, February 2, 1988, at the University of North Carolina at Chapel Hill. Dr. Allinger, internationally known in the field, will speak at 4:00 p.m. in Beard Hall room 111. A reception will follow the seminar. Interested persons are invited to attend.

## SPRING SHORT COURSE: "TOXICOLOGY FOR CHEMISTS" IS PLANNED FOR APRIL

"Toxicology for Chemists," a spring short course to be offered by the local ACS section, is being developed by Dr. Frederick de Serres, Director for Life Sciences and Toxicology at Research Triangle Institute.

The course is expected to address the areas of mutagenesis, carcinogenesis, and reproductive effects of toxic substances. The education committee will attempt to secure a site in the Research Triangle Park during April, 1988 for the course. Further details will be published in future *TarHelium* issues.



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## THE CENTENNIAL SCHOLARSHIP AWARD

The North Carolina Section of the ACS announces its CENTENNIAL SCHOLARSHIP AWARDS for 1988. 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 include research accomplishments, excellence of academic record, and quality of the application.

Eligibility requirements are attendance at a college or university within the NC section territory and research in a department of chemistry, biochemistry, or chemical engineering.

Applications should include full name, address, and daytime telephone number; should be typed in duplicate; and must include the following information:

- a summary, up to 1000 words, written by the applicant describing research accomplishments or progress,
- a letter of recommendation from the student's research director,
- a copy of the appropriate transcript(s) (graduate or undergraduate), and
- a description of how the award will be used.

Restrictions for use of the award require the student chosen to consult with his or her research advisor about how to use the award. Examples of appropriate uses of the award include travel to a national ACS meeting, tuition for an ACS short course, purchase of technical books, or support of research. The award must not be used to support research already funded by other sources.

The deadline for submitting applications is Friday, March 18, 1988. Submit applications to the Centennial Scholarship Award chair:

Dr. Monica Nees  
Research Triangle Institute  
P.O. Box 12194  
Research Triangle Park, N.C. 27709

Award recipients will be announced at the Meeting-in-Miniature on April 9, 1988.

## DAHL TO SPEAK AT POLYMER GROUP MEETING

The next meeting of the Polymer Group will be held Thursday, February 11 at the North Carolina State University Faculty Club. The speaker will be Dr. Klaus J. Dahl, who will present a lecture on "Polyether Ketones." The social hour begins at 5:30 p.m. followed by a buffet dinner at 6:30 p.m. The presentation begins at 7:30 p.m. Dinner reservations are required. Call Beverly Maxwell at 552-3811 by February 9. The Faculty Club is located on the north side of Hillsborough St. in Raleigh between the beltline and the State Fairgrounds.

## FUTURE PROGRAMS

**Speaker:** Anne Wilson **Date:** February 13  
**Program:** Planning Retreat  
**Location:** UNC, Kenan Faculty Conference Room

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**Speaker:** Round Table Discussion **Date:** March  
**Program:** Academic Industrial Interface  
**Location:** Undetermined

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**Program:** Meeting-in-Miniature **Date:** April 9  
**Location:** NCSU, McKimmon Center

## TCDG BECOMES DISCUSSION GROUP OF THE SECTION

At its November meeting, the Executive Committee voted to allow the Triangle Chromatography Discussion Group (TCDG) to become a discussion group of the North Carolina Section of the ACS. This brings to three the number of discussion groups associated with the Section. The other two are the Polymer Discussion Group and the Mass Spectroscopy Discussion Group. The Executive Committee felt that discussion groups such as these serve an important role for the chemistry community in offering technical programs that are not generally available from other organizations or institutions in the area. The motion formalizing the association with the TCDG required that the Section's bylaws be amended to clarify the relationship between all discussion groups and the local Section. A committee, which is being chaired by William L. Switzer, is being formed to draft this bylaw. The membership should expect to hear more about this matter in the future.

## APPLICATION

*Meeting-in-Miniature*  
*Saturday, April 9, 1988*  
*McKimmon Center*  
*North Carolina State University*

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

Phone number of senior author: \_\_\_\_\_

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

Presented by:  Ms.  
 Mr.  
 Dr. \_\_\_\_\_

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

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

Session: \_\_\_\_\_ Analytical \_\_\_\_\_ Inorganic  
\_\_\_\_\_ Biochemical \_\_\_\_\_ Organic  
\_\_\_\_\_ Chemical Education \_\_\_\_\_ Physical  
\_\_\_\_\_ Polymer \_\_\_\_\_ Other

Regular session \_\_\_\_\_ \*Poster session \_\_\_\_\_ \*Either Session \_\_\_\_\_

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

*Deadline for submission — Monday, February 22, 1988*

Mail Application To: Dr. Alvin Crumbliss  
Department of Chemistry  
Duke University  
Durham, NC 27706

\*If enough people are interested, the poster session will be added.

## CHEMIST

BS or MS with 2 or more years of experience, preferably in data analysis or quality assurance/quality control for full time, permanent position in QA/QC in Greensboro area, 919-272-9713.

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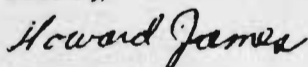
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Changes in membership status also should be submitted to the above address.

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