

THE TarHelium



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

Vol. 20 No 3

January-February 1990

THE NORTH CAROLINA SECTION OF THE AMERICAN CHEMICAL SOCIETY



is pleased to announce

Dr. Raymond P.W. Scott
Perkin Elmer Corporation

will speak on

Optimum Column Design for Liquid Chromatography

| | |
|------|-------------|
| 5:30 | Social Hour |
| 6:30 | Dinner* |
| 7:30 | Lecture |

*Reservations: A reservation is a commitment; please cancel within 24 hours of the meeting to avoid being billed. The cost of the dinner is \$15.00 for members and guests and \$7.50 for students. Reservations must be made by 4:30 pm Tuesday, February 13, 1990.

In Chapel Hill, call Becky Smith, 962-2172; in Durham, Carolyn Bean, 684-2414; in Raleigh, Joyce Dunn 737-2545; in Fayetteville, Sandra Smith 486-1669.

If you have not received your 1990 dues bill CALL 1-800-333-9511. If you have any questions about membership CALL 1-202-872-4414. To CHARGE your dues payment, call 1-800-227-5558.

ABSTRACT

The principles of a chromatographic separation will be discussed and the Performance Criteria necessary to effect a given separation defined. The choices that remain with the analyst will be considered and his choice defined as the chromatographic Elective Variables. The limitations of any apparatus used for any chromatographic separation will be discussed and defined as Instrument Constraints.

The basic equations used in column design will be briefly given and by the use of a computer program, will be used to demonstrate the effect of different column variables on chromatographic performance. The effect of particle diameter, solvent viscosity, capacity factors and other factors on analysis time will be the theoretical column radius and optimal diameter to effect a given separation will be discussed and results of its use given.

BIOGRAPHY

RAYMOND PETER WILLIAM SCOTT was born in 1925 in Erith, Kent United Kingdom. He studied at the University of London, obtaining his B.Sc. degree in 1946 and his D.Sc. degree in 1958. After spending more than a decade at Benzole Producers, Ltd., where he became head of the Physical Chemistry Laboratory, he joined W.G. Pye in 1960. In 1961, he moved to Unilever Research Laboratories as Manager of the Physical Chemistry Department. In 1969, he immigrated to the United States, and at that time, Dr. Scott became the Director of the Physical Chemistry Department at Hoffman-La Roche, Inc., Nutley, NJ. In 1981, he accepted the position as Director of the Applied Research Department at the Perkin-Elmer Corporation, Norwalk, Connecticut.

Dr. Scott is the author and coauthor of over 150 scientific papers, largely involving the theory and practice of both gas and liquid chromatography. He edited the proceedings of the 1960 Edinburgh Symposium and is the author of two books.

NOTES FROM THE EDITOR

DEADLINE FOR THE TARHELIUM

MARCH 15, 1990

NORTH CAROLINA ACS POLYMER GROUP

Schedule of Programs 1990

NCSU Faculty Club

| | |
|--------------|---------|
| Social Hour: | 5:30 pm |
| Dinner: | 6:30 pm |
| Speaker: | 7:30 pm |

February 8 Dr. Ferdinand Rodriguez, Cornell University. Molecular Weight Dependency of Electron-Beam Resist Sensitivity.

March 8-9 Symposium on Recent Advances in Polymer Science, in honor of retirement of Professor Richard D. Gilbert, and in celebration of the first Ph.D. granted in the Fiber and Polymer Science Program at NCSU. Currently scheduled at NCSU Faculty Club

April 17** Dr. Charles K. Chiklis, formerly with Polaroid Corporation. Synthesis, Properties and Applications of Processable Intrinsically Conducting Composites Based on Polypyrrole. Joint with SPE Local Section.

May 10 Dr. Albert Highe, Raychem Corporation. Phase Equilibrium in Poly(dimethylsiloxane) Gel Systems.

Annual dues for the Polymer Group are \$5.00. Dinner at the NCSU Faculty Club is \$12.00 for members, \$6.00 for students

Officers:

| | | | |
|-------------|-----------------|---------------|----------|
| Chairman | Dr. Keith Dawes | Raychem Corp. | 552-3811 |
| Chair-Elect | Dr. Maury Balik | NCSU | 737-2326 |
| Secretary | Dr. Kirk Abbey | Lord Corp. | 469-3443 |
| Treasurer | Dr. Ray Chern | NCSU | 737-2328 |

THE NORTH CAROLINA SCHOOL OF SCIENCE AND MATHEMATICS

CHEMISTRY INSTRUCTOR

The North Carolina School of Science and Mathematics (NCSSM) offers a unique career opportunity in chemistry instruction and curriculum development. The position is full-time ten months, starting in mid-August 1990.

Located in the heart of North Carolina's culturally rich Research Triangle, NCSSM is a statewide, residential, public high school for 11th and 12th grade students with exceptional talent in science and mathematics. The School draws its 550 students, one third of whom are National Merit Semifinalists, from all parts of the state. NCSSM also provides other statewide services, such as workshops for public school teachers.

General requirements: enthusiasm; high energy; master's degree required, doctorate preferred; interdisciplinary teaching experience preferably with extremely capable students; interest and experience in curriculum design; and a willingness to participate in a residential high school program at times other than usual school hours.

Interested applicants should submit a resume, a statement of their educational philosophy and how they foresee contributing to the school's mission to:

Personnel Office,
NCSSM,
P.O. Box 2418,
Durham, NC 27715

DEADLINE: January 30, 1990

Equal Opportunity Employer



PLAN FOR OUR FUTURE CONTRIBUTE TO PROJECT SEED

Your support has made possible more than 20 years of Project SEED, the Society's social action and career development program. Join the thousands of ACS members who plan for the future of chemistry by making a contribution now. Project SEED offers economically disadvantaged and minority high school students 10 weeks of research experience during the summer at an academic, industrial, or government laboratory. All contributions to Project SEED are used to support the modest stipends awarded to the students.

**THANK YOU
FOR YOUR HELP**

This research experience encourages students to consider wider educational and career possibilities, stimulates their imagination, and helps them to realize their potential. We need programs like Project SEED to produce tomorrow's leaders. Help America maintain its competitive edge.

Plan for our future now. Send your tax deductible contribution today or add it to your dues bill. Don't forget that many companies will match your donation.



American Chemical Society
Project SEED
Contribution Record 1990

Date _____
Check No. _____

\$50.00
 \$20.00
 \$10.00
 \$ 5.00
 Other \$ _____

—Buys one day in
the laboratory for a
SEED student

Retain for your records

Tarhelium Announcement

June 7 - 9, 1990

BUSA II - Boron USA Workshop addressing all aspects of fundamental and applied boron science. To be held at the Sheraton Imperial Hotel and Towers in research Triangle Park, NC, USA (Bernard Spielvogel, chairman)
Symposium and Poster Sessions

Contact for the meeting:

Dr. Bernard F. Spielvogel
Boron Biologicals, Inc.
2811 O'Berry St.
Raleigh, NC 27607
Telephone: 919-832-2044

ACS Program 1990

- | | |
|---------------|---|
| Feb. 15 | See front cover and page 2 |
| Mar. 8 & 9 | Polymer Symposium - Retirement Dr. Richard Gilbert NCSU |
| April 7 | NC Sectional Meeting (see above) Duke University |
| Sept. 14 & 15 | Challenges in Computational Chemistry Dr. Jeff Whittaker, co-chairman Dr. Myung Whangbo, co-chairman |
| Oct. 15 | Dr. Jeffrey Zink Triboluminescence Location: TBA |
| Nov. 14 | Dr. Roland Lehr Mechanisms of Chemical Carcinogenesis Location : TBA |

CALL FOR PAPERS: 104th North Carolina American Chemical Society Sectional Conference

This year, the North Carolina Sectional Conference will be held Saturday April 7 at Duke University. Again, we encourage participation of undergraduate and graduate students as well as postdoctoral associates. Last year's meeting at UNC was a great success with over 200 participants. This year, we would also like to encourage greater industrial research participation to match their generous financial support of previous years. Please note that this meeting is a wonderful opportunity for young scientists to informally present their research activities to their peers in either a poster or as an oral presentation. Furthermore, as traditional, the North Carolina Section will provide lunch to all presenters.

**NORTH CAROLINA SECTION
AMERICAN CHEMICAL SOCIETY**

104TH NC SECTIONAL CONFERENCE
(Formerly, *the Meeting-In-Miniature*)

April 7, 1990

**Paul M. Gross Chemical Laboratory
Duke University
Durham, NC**

Program

8:30 to Noon

***Lunch and Awards Presentation**

Noon Until...

***Speakers are the invited guests of the Section**

DEADLINE: March 2, 1990

Mail applications to:

**Dr. Jim Chao,
IBM Corp.,
P.O. Box 12195,
Dept. E62/061,
RTP, NC 27709.**

APPLICATION
104TH NC SECTIONAL CONFERENCE

Saturday, April 7, 1990
P.M. Gross Chemical Laboratory
Duke University
Durham, NC 27706

Author(s) _____
Phone # of senior author _____
Position(s) _____
Presented by _____
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 - FRIDAY MARCH 2, 1990

Mail application to:

Dr. Jim Chao,
IBM Corp.
P.O. Box 12195
Dept. E62/061,
RTP, NC 27709

CALL FOR POSTERS

SEVENTH ANNUAL CHROMATOGRAPHY SYMPOSIUM

Sponsored by

The Triangle Chromatography Discussion Group

May 24, 1990

McKimmon Center, NCSU, Raleigh, NC

The program will include invited talks on all facets of chromatographic science. In addition to the invited talks, up to thirty 4' X 8' posters will be accepted for presentation. Persons wishing to present a poster should send an abstract of not more than 150 words to the poster session chairman at the address below by March 1, 1990. Notification of acceptance will be given by March 15.

A prize of \$500 will be awarded for the best poster submitted by a student.

Poster Session Chairman:

Dr. Robert Whiton
NSI-Environmental Sciences
P.O. Box 12313
Research Triangle Park, NC 27709

CAROLYN MORSE WINS NATIONAL RECOGNITION

Carolyn J. Morse, chemistry teacher at Chapel Hill High School, received a 1989 Presidential Award For Excellence In Science Teaching. The Presidential Awards Program for Excellence in Science and Mathematics Teaching is sponsored by the National Science Foundation and is a national program of recognition designed to improve the image and status of teaching in mathematics and science. Carolyn was one of six North Carolina winners who was then selected by a national committee for the national award, which is given to one science and one mathematics teacher from each state. The award consists of a trip to Washington DC for the White House award ceremony, a plaque and a \$7,500 grant to Chapel Hill High School for use in their science programs. Carolyn is the Chairman of the NC/ACS High School Committee and we congratulate her for this national recognition of her dedication to science teaching.

**Executive Committee
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American Chemical Society
1990**

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| Safety | | |
| Scholarship | Dr. Irwin Vogler | 549-8641 |
| Section Symposium | Dr. Mike Whangbo | 737-3464 |
| | Dr. Jeff Whittaker | 850-7872 |

SUGGESTIONS REQUESTED FOR POSSIBLE NOMINEES FOR THE NATIONAL TECHNOLOGY MEDAL

All ACS members are invited by the Committee and Patents and Related Matters (CP&RM) to suggest possible candidates for nomination for the National Technology Medal. Recently funded by the United States Department of Commerce and established by the Stevenson-Wydler Innovation Act of 1980, the medal is awarded annually by the President. It may be awarded to individuals, groups, companies or to institutions within the United States for outstanding contribution to technology or for the promotion of the technological workforce.

Nomination documents may be obtained by contacting the staff liaison to CP&RM, Ms. Nancy Mullens (202/872-4479); they will need to be submitted to Ms. Mullens by March 1, 1990.

SUGGESTIONS REQUESTED FOR POSSIBLE NOMINEES TO INVENTORS HALL OF FAME

All ACS members are invited by the Society's Committee on Patents and Related Matters (CP&RM) to make suggestions to the Committee on possible candidates for induction into the National Inventors Hall of Fame. The inventor must be a U.S. citizen (naturalized or otherwise); and the invention upon which the nomination is based must be covered by a U.S. patent. The invention must have contributed greatly to the national welfare, and signified progress in science and the useful arts.

Nomination documents may be obtained by contacting the Staff Liaison to CP&RM, Ms. Nancy Mullens (202/872-4479); they will need to be submitted to Ms. Mullens by February 1, 1990.

The Tarhelium is a publication of the North Carolina Section of the American Chemical Society. The views expressed herein are not necessarily those of the Section.

B. A. Whittaker, Ph.D., *Editor*
Jeff Wilson, Ph.D., *Advertising Manager*
W. Switzer, Ph.D., *Mtg. Announcement Editor*

Please direct all correspondence and submissions to the attention of the editor:

B. A. Whittaker, Ph.D.
3108 Anderson Drive
Raleigh, NC 27609

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Next deadline for the Tarhelium will be March 15, 1990. Contributions should be on PC disk in WordPerfect, DW-4, RFT, DCA, Wordstar, XYWrite, Microsoft Word or ASCII format or on Macintosh disk in any format.

If you change your membership status or your *Tarhelium* mailing address, please submit your new address along with your old address in the form of a recent C&EN or *Tarhelium* address label to:
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