

THE

TarHelium



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

Vol. 18, No. 1

September 1987

**INTERNATIONAL SYMPOSIUM
ON HIGH TEMPERATURE
SUPERCONDUCTING MATERIALS:
Preparations, Properties, Processing**

September 17-19, 1987

Morehead Planetarium

University of North Carolina

Chapel Hill, North Carolina

Sponsored by

the N.C. Section American Chemical Society

in collaboration with

Departments of Chemistry and Physics

at Duke University

North Carolina State University,

and University of North Carolina at Chapel Hill;

Curriculum in Applied Sciences, UNC-CH;

Army Research Office; IBM

See Page 2 for information on September Section Meeting

September Section Meeting
Tutorial on
HIGH TEMPERATURE
SUPERCONDUCTING MATERIALS

September 17
207 Venable Hall

PROGRAM

Superconductivity: Chronology of Events

William E. Hatfield
Department of Chemistry
University of North Carolina

The Physics of Superconductivity

John H. Miller
Department of Physics
University of North Carolina

**Structural and Electronic Properties
of High T_c Superconductors**

M.H. Whangbo
Department of Chemistry
North Carolina State University

Social Hour

5:30—Old Well Room, Carolina Inn

Dinner

6:30—Old Well Room

Business Meeting

8:00—Old Well Room

Tutorial

8:15 -207 Venable Hall, UNC

The dinner cost is \$14 for members and guests and \$7 for students. Please make a reservation by phoning one of the following people by Monday, September 14 at 3:00 p.m.: 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.

HIGH TEMPERATURE SUPERCONDUCTING MATERIALS: Preparations, Properties, Processing

Ballroom, Morehead Planetarium

Listed below are the speakers and their affiliations for each session of the symposium.

The Friday morning session will begin at 9:00 with opening remarks by the session chairman.

Speakers for this session include: *A.W. Sleight*, du Pont Central Research; *B. Raveau*, University of Caen; *M.K. Wu*, University of Alabama; and *F.J. DiSalvo*, Cornell University.

Lunch will begin at 12:30. A list of restaurants will be available at registration.

The Friday afternoon session will begin at 1:45. Speakers include: *D. Murphey*, AT&T Bell Laboratories; *Peter Day*, Oxford University; *Jack Williams*, Argonne National Laboratory; *A. Zettl*, University of California, Berkeley; and *Richard Blaugher*, Westinghouse Electric.

At 6:00 a Poster Session will be held in the State Dining Room, Morehead Planetarium.

Saturday's session will start at 9:00 in the Ballroom, Morehead Planetarium. Speakers will include: *M. Cohen*, Exxon Research and Engineering Co.; *M. Devoret*, French Atomic Energy Commission; *B. Batlogg*, AT&T Bell Laboratories; and *Merrill Shafer*, IBM.

At 1:00 the concluding remarks will be given by *Thomas J. Meyer*, Chairman, Department of Chemistry, University of North Carolina.

FUTURE PROGRAMS

October 20 *Dr. Dorit Noether*, ChemTech
Star Wars, Technical Aspects
North Carolina State University Faculty Club

November 17 *Dr. Janos Fendler*, Syracuse University
Photochemical Solar Energy Conversion
Hubbard Chemistry Auditorium
North Carolina Central University

December 15 *Dr. Pedro Cuatrecasas*
Vice President, Glaxo Inc.
North Carolina Distinguished Speaker
Meredith College

1987 FALL SHORT COURSE SET

HIGH-RESOLUTION NMR IN THE SOLID STATE

Lecture Dates: Wednesdays, October 21, 28, November 4, 11, 18, 1987

Time: 5:00—6:30 p.m.

Place: Dreyfus Auditorium, Research Triangle Institute

Instructor: Edward O. Stejskal, Ph.D.

Department of Chemistry, North Carolina State University

Dr. Stejskal received a B.S. degree in 1953, and a Ph.D. in 1957 from the University of Illinois. He was a NSF Post-doctoral Fellow in the Department of Chemistry at Harvard University prior to accepting a instructor position at the University of Wisconsin. In 1964 Dr. Stejskal joined Monsanto Company as a Research Specialist and later advanced to Fellow. In 1986 Dr. Stejskal joined the staff at NCSU. Dr. Stejskal has ninety professional papers to his credit.

Course Description:

High-resolution ^{13}C and ^{15}N -NMR spectra in many types of organic solids are obtained by use of cross polarization (CP) high-power resonant proton decoupling and magic-angle sample spinning (MAS). Such CP/MAS spectra, and the relaxation times derived from them, can be particularly useful in the characterization of the chemical and physical structure of solids that may be difficult to analyze by other means. Solids that are noncrystalline, opaque, and impossible to melt or dissolve without altering their structure fall into this category.

Applications of CP/MAS include fossil fuels, biological macromolecules and membranes, cross-linked materials, and studies of molecular motion in the solid state.

This course is designed for individuals having some familiarity with liquid NMR. It will begin with an introduction to those basic principles of NMR most useful to understanding solid-state NMR and will move on to an examination of the cross-polarization/magic-angle spinning (CP/MAS) experiment and the process it involves. More complex experiments designed to study relaxation phenomena and solid-state line shapes will be introduced and examined. The presentation will be descriptive rather than mathematical. Solid state methods and processes will be compared with those in the liquid state. Applications to macromolecular systems will be used to illustrate most of the principles.

An attempt will be made to tailor the course to the interest of the class. For additional information phone Michael Rose, Glaxo Inc., (919) 296-1173.

Registration: CLOSE DATE IS OCTOBER 9, 1987.

REGISTRATION FORM

Enclosed is a check (payable to the NC Section, ACS) as registration fee for HIGH-RESOLUTION NMR IN THE SOLID STATE

- No charge to unemployed ACS members.
 \$50 ACS members.
 \$25 high school teachers; full-time students; post-doctoral fellows; retired ACS members.
 \$75 non ACS members.

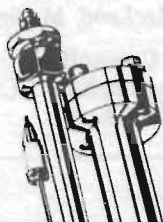
Name _____ Phone _____

Address _____

Business Address _____

Possible areas of Solid State NMR interest _____

Mail to: Dr. Joan Bursey,
101 Longwood Place
Chapel Hill, NC 27514.



WE SPECIALIZE IN CHROMATOGRAPHY LC - GC - TLC

Call Your Analytical Specialist at ANSPEC:
Drake Dowler, 800-521-1720 or 919-282-5836

- **Complete Selection**
Anspec stocks everything needed for your work in HPLC, GC and TLC. We have thousands of supplies and instruments from hundreds of leading manufacturers.
- **Technical Assistance**
Anspec's experts will answer your technical questions on our wide range of chromatography products.
- **Efficient Service**
Most Anspec orders are shipped from our warehouse within 24 hours.
- **Informative**
Anspec's newsletters, bulletins and representatives can help keep you up-to-date on new developments in the separation sciences.

ANSPEC 1905 Gracewood Dr. • Greensboro, NC 27408
company, inc. P. O. Box 7730 • Ann Arbor, MI 48107

NMR CONCEPTS

The Traficante Series

1987-1988 COURSE SCHEDULE

OPERATING TECHNIQUES LABORATORY

Traficante
22-23 Sept 87 _____ URI/Rhode Island

2D NMR FOR ORGANIC CHEMISTS

Rodger & Traficante
5-8 Oct 87 _____ Cincinnati OH

2D NMR FOR ORGANIC CHEMISTS

Rodger & Traficante
8-9 Oct 87 _____ Cincinnati OH

ELECTRONICS FOR NMR TECHNICIANS

Simms & Traficante
19-21 Oct 87 _____ Rhode Island

INTERPRETATION OF NMR SPECTRA

Lichter & Traficante
1-5 Nov 87 _____ *WPC/ Rhode Island
6 Nov 87, Lab _____ URI/Rhode Island

STRUCTURAL NMR OF BIOPOLYMERS

Cowburn, Patel & Prestegard
16-18 Nov 87 _____ *WPC/ Rhode Island

SOLID STATE NMR

Maciel & Frye
16-20 Nov 87 _____ Fort Collins CO
18 Nov 87, Lab _____ Fort Collins CO
21 Nov 87, Lab _____ Fort Collins CO

INTRODUCTION TO SOLID STATE NMR

Maciel
16-17 Nov 87 _____ Fort Collins CO

QUANTUM MECHANICS OF SOLID STATE NMR

Maciel
18 Nov 87 _____ Fort Collins CO

ADV. TECH. & APPL. OF SOLID STATE NMR

Maciel
19-20 Nov 87 _____ Fort Collins CO

NMR CONCEPTS & OPERATING TECHNIQUES I

Traficante
6-10 Dec 87 _____ *WPC/ Rhode Island
11 Dec 87, Lab _____ URI/Rhode Island

IN-VIVO & IN-VITRO BIOLOGICAL NMR

Ackerman, Balaban & Satterlee
11-15 Jan 88 _____ Sr. Louis MO
16 Jan 88, Lab _____ Wash. Univ. MO

2D NMR FOR ORGANIC CHEMISTS

Rodger & Traficante
1-4 Feb 88 _____ *WPC/ Rhode Island
5 Feb 88, Lab _____ URI/Rhode Island

ELECTRONICS FOR NMR SPECTROSCOPISTS

Simms, Traficante & Ziessow
21-26 Feb 88 _____ Rhode Island

2D NMR FOR SPECTROSCOPISTS

Rodger, Traficante & Ziessow
28 Feb - 3 Mar 88 _____ *WPC/ Rhode Island
4 Mar 88, Lab _____ URI/Rhode Island

NMR CONCEPTS & OPERATING TECHNIQUES II

Ellis & Traficante
7-10 Mar 88 _____ Rhode Island
11 Mar 88, Lab _____ URI/Rhode Island

NMR CONCEPTS & OPERATING TECHNIQUES I

Traficante
9-13 May 88 _____ Rhode Island
14 May 88, Lab _____ URI/Rhode Island

On Site Customized Courses Also Available

* - Whispering Pines Conference Center in Rhode Island

For more information
call or write

NMR CONCEPTS

The Traficante Series

P.O. Box 1577, Kingston, RI 02881-1577
401-792-2876



NOMINATIONS FOR LOCAL CHAPTER OFFICERS

The Nominations Committee, headed by Dr. John Myers, has announced a preliminary list of nominees for the November election. Nominations for all offices will be solicited at the September 17 meeting; however, persons planning to nominate candidates should have the nominee's consent beforehand.

Office and Candidates

Chairman Elect

Alvin Crumbliss, Duke
second candidate to be
nominated at meeting

Secretary

Michael Crimmins, UNC-CH
Reginald Shiflett, Meredith

Councilor

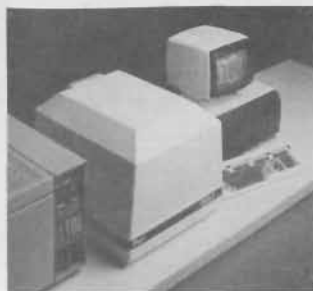
Maurice Burse, UNC-CH
Kathryn MacLeod, Mallinckrodt

Alternate Councilor

Halbert Charmichael, NCSU
Ivy Carroll, RTI

NATIONAL CHEMISTRY DAY

Mark your calendar for November 6, which is being recognized as National Chemistry Day. The Section is planning some special activities to commemorate the event. Our aim is to educate the public about the role of chemistry in everyday life.



Meet The INCOSTM 50

**The Benchtop Mass Spec
With EI, CI, Solids Probe,
Desorption Probe, And More**

at

OMNI Europa
**Europa Drive
Chapel Hill, NC 27514**

October 9, 1987

**Registration / Continental Breakfast
8:30 a.m. - 9:00 a.m.**

**Program / Demonstration
9:00 a.m. - 3:00 p.m.**

**To register, please call Erna Straw
(301) 948-1067**



Headquarters: 355 River Oaks Parkway, San Jose,
CA 95134 ☐ (408) 433-4800
Eastern Zone Office: 1383 Piccard Drive, Suite 100,
Rockville, MD 20850 ☐ (301) 948-1067

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.

Hannah Green, *Editor*
Allen Jones, *Co-Editor*
Jeff Wilson, *Advertising Manager*

Please direct correspondence to the attention of the editor:

Hannah Green
Burroughs Wellcome Co.
3030 Cornwallis Road
Research Triangle Park, NC 27709

If you wish to change your *TarHelium* mailing address, please submit your old address, your new address and a recent C&EN or *TarHelium* address label to:

Manager, Membership and Subscription Services
American Chemical Society
P.O. Box 3337
Columbus, Ohio 43210

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

Executive Committee:

William Switzer, NCSU, Chairman
William Hatfield, UNC, Chairman-Elect
Carolyn Foust, RTI, Secretary
Joan Bursey, Radian, Treasurer
Hannah Green, BW, *TarHelium* Editor
William Little, UNC, Councilor
Maurice Bursey, UNC, Councilor
Marcus Hobbs, Duke, Councilor
William Gutknecht, RTI, Alternate Councilor
Halbert Carmichael, NCSU, Alternate Councilor
Henry Bent, NCSU, Alternate Councilor
Bernard Spielvogel, ARO, Past Chairman
Robert Izydore, NCCU, Past Chairman
Eric Bigham, BW, Past Chairman

PRE-SORTED
FIRST CLASS MAIL
U.S. POSTAGE PAID
RALEIGH, NC

PERMIT NO. 491

FIRST CLASS MAIL

01378 35L 09/87 ZM 426 1
DR ROBERT GEORGE GHIRARDELLI
US ARMY RES OFFICE
POB 12211
RES TRIANGLE PARK NC 27709