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MICHAEL THEIL

JOHN FERRARO

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MICHAEL H. THEIL

Michael H. Theil was born in Brooklyn, New York. He majored in chemistry at Cornell University and received an A.B. degree from that institution. After two years in the U.S. Army Chemical Corps, he enrolled in the polymer chemistry curriculum at the Polytechnic Institute of Brooklyn. Upon receiving his Ph.D. from that institution, he worked as a research chemist for the Texas-U.S. Chemical Company. From 1964 to 1966 he was a postdoctoral research associate in the laboratories of Professor Leo Mandelkern at Florida State University. He then joined the faculty of the Department of Textile Chemistry at North Carolina State University were today he is a professor. His research interests include the physical chemistry of polymers with emphasis on phase transitions, copolymerization and copolymer properties.

PHASE TRANSITIONS AND LIQUID CRYSTAL FORMATION IN CELLULOSE SOLUTIONS

Cellulose, an abundant renewable resource, is the attention of some enthusiastic research efforts these days. A major cause for this renewed interest has been the development of several new solvent systems for this material. One or more of these solvents may be the basis for a cleaner, more efficient way of producing cellulose textile fibers than is possible via the classical viscose rayon system. To facilitate this accomplishment, the interactions of cellulose with various solvent systems must be clearly understood. This talk reports on studies of two systems. The first describes the precipitation of cellulose from diluted solutions of a cadmium based Werner complex called cadoxen and deductions about the mode of dissolution that can be made therefrom. The second is concerned with cellulose solutions in ammonia/ammonium thiocyanate. Studied extensively at North Carolina State University in recent years, this system has now yielded liquid crystalline solutions. The prospects of efficiently spinning high performance fibers from such mesophases are discussed.

JOHN R. FERRARO

John R. Ferraro is presently Professor Emeritus of Chemistry at Loyola University, Chicago, IL. He was a Senior Scientist at Argonne National Laboratory from 1948-1980; Searle Professor of Chemistry, Loyola University, Chicago, IL. 1980-1985. He now is on a consulting basis at both institutions as well as IBM, Rolling Meadows, IL. He received his B.S. degree at IIT, his MS at Northwestern University, and his Ph.D. at IIT. He was a visiting professor at the University of Rome in 1966 and 1984, the University of Arizona in 1973 and the University of Florence in 1978.

Dr. Ferraro has been the National President of the Society for Applied Spectroscopy and has served as the Editor of its Journal, "Applied Spectroscopy", 1968-1974. He has received numerous awards and recognitions, and has published over 275 papers and author, co-authored, edited or co-edited 14 books.

His major interests have centered on Molecular Spectroscopy, Vibrational Spectroscopy at Utlra-High Pressures and Fourier Transform Interferometry. At present, his research interests deal with the spectroscopic characterization of synthetic metals.

OCTOBER MEETING

DATE & PLACE:

October 15, 1986
W.R. Grace Research Center
Rte. 32 west of rte. 29
Clarksville, Maryland

SPEAKERS & TOPICS:

5:30 Michael Theil
North Carolina
State University
"Phase Transitions and
Liquid Crystal Formation
in Cellulose Solutions"

8:00 John Ferraro
Loyola University
"Synmetals - New Developments in Charge-Transfer
Organic Superconductors"

COCKTAILS & DINNER:

Social Hour 6:30
Sponsored by W.R. Grace
Dinner 7:00

Dinner price $11.00 per person, but spouses, retired chemists and students may attend for $9.00.

Dinner reservations should be made by mailing checks, payable to Maryland Section of ACS, to

John Corliss
P.O. Box 20899
Baltimore, MD 21209

by October 6. Late reservations may be made by calling John Corliss at (301) 235-6612 or Nolan Phillips at (301) 939-3500.

It is not necessary to be a member of the American Chemical Society to attend. You may attend the lectures without attending the dinner.

SYNMETALS - NEW DEVELOPMENTS IN CHARGE-TRANSFER ORGANIC SUPERCONDUCTORS

The first organic superconductors (synmetals) were discovered in the family of $(TMTSF)_2X$, where TMTSF is tetramethyltetraselenafulvalene, and X = inorganic anion. With the exception of $(TMTSF)_2ClO_4$ all of the materials demonstrating superconductivity required pressure up to ~ 12 kbar. The highest critical temperature (T_c) reached was ~ 1.4 K. A new novel class of materials have been found in the $(B\text{-}BEDT\text{-}TTF)_2X$ family where BEDT-TTF is bisethylenedithiotetrathiafulvalene, X = linear, symmetrical anion. For this family ambient pressure superconductors have been synthesized for $X = I_3^-$, IBr_2^- and AuI_2^- with T_c = 1.4, 2.8, 5 K, respectively. These materials are 2-D metals above T_c, at which temperature they become superconductors. Effects of the anions as well as the interactions between *inter*stacks (cross-talk) in creating additional dimensionality and subsequent superconductivity will be discussed.

REMSEN AWARD

The Remsen Award committee is accepting nominations for the 1987 Remsen Award. The nomination should be accompanied by a curriculum vita and a list of the nominee's publications together with any other information that will help the committee to make its selection.

Nominations should be sent to Timothy J. McNeese, Department of Chemistry, Loyola College, 4501 North Charles Street, Baltimore, MD 21210.

Twenty years ago, the question was "Why can't Johnny read?" Today, Johnny has grown up. The problem is that Johnny still can't read.

FUTURE MEETINGS

Next month's meeting, featuring Harry R. Snyder, Jr., of Norwich Pharmaceutical, will be November 19 at Edgewood. The Maryland Chemist Award meeting will be held at Notre Dame on December 17.

MARM AWARDS

Two Middle Atlantic Region awards were made at the recent 20th MARM in Baltimore. The E. Emmett Reid award, for a teacher in an undergraduate institution, went to Sr. Helen Burke of Chestnut Hill College in Philadelphia, while the High School Chemistry Teacher of the Year Award went to Mr. John Lieberman, Jr., of the T.C. Williams High School in Alexandria.

THE AUSTIN M. PATTERSON - E. J. CRANE AWARD

The Dayton and Columbus Sections of ACS are soliciting nominations for the 1987 Austin M. Patterson - E.J. Crane award for achievement in chemical information and documentation. Closing date for nominations is January 31, 1987. The award, consisting of an honorarium of $2,000 and a personalized commendation, will be presented at a dinner on June 25, 1987 in Columbus.

Further information may be obtained from The Patterson-Crane Award Committee, Priscilla Ratliff, chairman, Ashland Chemical Company, P.O. Box 2219, Columbus, Ohio 43216.

INVENTORS HALL OF FAME

The ACS Committee on Patents and Related Matters invites ACS members to make suggestions on possible candidates for induction into the National Inventors Hall of Fame.

Nomination documents may be obtained by contacting the Staff Liaison to the CP&RM, Ms. Nancy Mullens (202) 872-4479. Nominations must be submitted by November 1, 1986.

EMERGENCY INFORMATION

Emergency handling information on 1,016 hazardous chemicals is now available from a new database on the Chemical Information System (The CIS).

CHRIS (Chemical Hazard Response Information System), developed by the US Coast Guard, provides data on such subjects as identification of substances, health and fire hazards, and physical and chemical properties. Designed to aid spill-response personnel in emergency situations, the system can also be used in the development of procedures for avoidance of emergencies.

Information on CHRIS and The CIS is available from CIS, 7215 York Road, Baltimore, MD 21212 USA, 301-821-8440.

When did YOU last attend a Maryland Section meeting?