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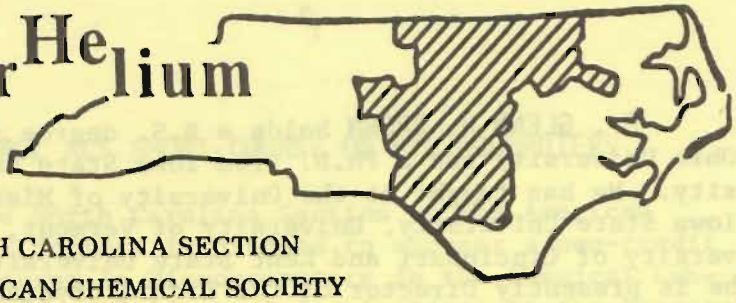

NORTH CAROLINA SECTION
AMERICAN CHEMICAL SOCIETY

Vol. 11, No. 3 Raleigh, N.C. November 1980

STRUCTURE, PROPERTIES AND APPLICATIONS OF LIQUID CRYSTALS

Speaker: Dr. Glenn H. Brown
Kent State University

Date: Thursday, November 20, 1980

Place: Duke University
Durham, North Carolina

Time: 5:30 Happy Hour
Acron Room
2nd Floor, Student Union

6:30 *Dinner
Varsity "D" Room ($7.00 full members; $3.50 student members)

8:00 Lecture
Room 103
Gross Chemical Laboratory

* Please make reservations no later than Monday, November 17, 1980. Call Barbara Hannah at 966-1566 in Chapel Hill, Terry Laing at 684-2414 in Durham and Linda Archer at 737-2548 in Raleigh.

Dr. GLENN H. BROWN holds a B.S. degree from Ohio University and a Ph.D. from Iowa State University. He has taught at the University of Mississippi, Iowa State University, University of Vermont, University of Cincinnati and Kent State University where he is presently Director of the Liquid Crystal Institute and Regents Professor of Chemistry. Dr. Brown is the founder and director of the Liquid Crystal Institute. He was given the Distinguished Service Award by the Akron Section of the American Chemical Society and he received the 1977 Morley Award for distinguished service to the field of Chemistry. Dr. Brown is co-editor of the journal MOLECULAR CRYSTALS AND LIQUID CRYSTALS, Editor-in-Chief of MOLECULAR CRYSTALS AND LIQUID CRYSTALS LETTERS, and is on the Editorial Advisory Board of BULLETIN ON MATERIAL SCIENCES and IRANIAN JOURNAL OF SCIENCE.

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Study of the liquid crystalline state of matter has undergone a renaissance starting in 1957. Liquid crystals, which exhibit interesting structural characteristics, are present in both inanimate and animate materials. The types of materials which show liquid crystallinity when heated will be discussed as well as those systems which show the properties of liquid crystallinity when prepared from two or more components (lyotropic). The properties of liquid crystals will be related to molecular packing in the different kinds of liquid crystals. The uses of liquid crystals include: 1) non-destructive testing in industrial and clinical laboratories, 2) the manufacture of new fibers, 3) the manufacture of graphite fibers and 4) displays. Liquid crystals have been used in the research laboratory as solvents in chromatography, nmr and organic synthesis. The lecture will close with a brief "journey" into the role of liquid crystals in living systems.

FALL ACS SHORT-COURSE ON MICROCOMPUTERS

The North Carolina Section of the American Chemical Society is pleased to sponsor a non-credit short course in Microcomputers in the Chemical Laboratory for all interested scientists in the Research Triangle Area. This course will include one 3-hour laboratory in addition to two 4-hour lectures. Because of the laboratory, enrollment must be restricted to 40 participants. Also because of added costs of offering a laboratory, the normal tuition has been increased by $10 to $50 and $60 for members and non-members respectively. A detailed course description is enclosed as well as a registration form. All profits from the short course program support the ACS Centennial Scholarship.

FUTURE SECTION MEETINGS

Date	Speaker/Affiliation	Topic
December 9	Dr. J. Huisingh EPA/RTP	Bioassay
January 13	Dr. Alan Clifford VPI & SU	Fluorine Chemistry
February 10	Dr. Walt McChrone McChrone Inst.	Microscopy

MICROCOMPUTERS IN THE CHEMISTRY LABORATORY

LECTURE DATES: Friday, December 5, and December 12 (1 to 5 PM), in the Burroughs Wellcome Auditorium, 3030 Cornwallis Road, Research Triangle Park, NC 27709.

LABORATORY DATE: Saturday, December 6 (9 AM to 12 noon) in 12-1 Venable Hall (Chemistry Department), University of North Carolina, Chapel Hill, NC 27514

PREREQUISITE: A bachelor's degree in a science, or equivalent; some familiarity with computers would be useful.

DEADLINE: December 1, 1980

INSTRUCTORS: Dr. Charles N. Reilley, Kenan Professor of Chemistry, University of North Carolina, Chapel Hill, NC 27514

Dr. Jerry Koontz, Automation Specialist, Burroughs-Wellcome, Research Triangle Park, NC 27709

Dr. David F. Smith, Automation Specialist, Burroughs-Wellcome, Research Triangle Park, NC 27709

Charles N. Reilley joined the UNC Chemistry faculty in 1952. His research interests are in application of computers to chemistry; surface analysis by XPS; interfacial processes, including electrochemistry; coordination chemistry and multinuclear NMR.

Jerry P. Koontz received his Ph.D. in Analytical Chemistry in 1979, from the University of North Carolina, Chapel Hill. He has been employed by Burroughs-Wellcome since 1976. His research interests are in large-scale laboratory automation systems, interprocessor communications, and local area networks.

David F. Smith received his Ph.D. in Analytical Chemistry in 1978, from the University of North Carolina, Chapel Hill. He was Assistant Professor of Chemistry at Carleton College From September 1978 to June 1980. He is presently employed by Burroughs-Wellcome. His research interests are in the applications of microcomputers to analytical chemistry, and to chemical education.

COURSE DESCRIPTION: This course is designed for persons who have not had previous experience with microcomputers in the chemistry laboratory but who wish to learn the essential principles and develop appreciation for their utility. In the first day's lectures, hardware, software, and general areas of application will be discussed. The laboratory will consist of hands-on experience with microcomputers and a set of demonstrations where microcomputers are attached to laboratory instruments. The course will conclude with lectures on data enhancement techniques (including Fourier transform processes), intercomputer communications, and advanced applications.

TEXTS:

A. Osborne, An Introduction to Microcomputers, Volume 1: Basic Concepts, Osborne Associates Inc., 630 Bancroft Way, Berkeley, CA 94710 (~$12.00), 1976.

B. Carrick, Computers and Instrumentation, Heyden and Sons, Inc., Philadelphia, PA, 1979.

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Enclosed is a check (payable to the North Carolina Section, American Chemical Society), as registration fee for Microcomputers in the Chemistry Laboratory. A check must accompany registration. Billing cannot be arranged, but receipts will be given to aid registrants in obtaining reimbursment.

_____$50.00 I am ACS member _____$60.00 I am not ACS member

NAME_____ HIGHEST DEGREE_____ TELEPHONE_____

BUSINESS ADDRESS_____

SEND TO: Dr. Robert Izydore, Department of Chemistry, N. C. Central University, Durham, N. C. 27707

Nov. 12 Dr. ROBERT A. MOSS, Rutgers University, "Micellar Control of Esterolysis Reactions," 3:30 pm, Room 103 Gross Chemical Laboratory, Duke.

14 Dr. DAVID E. KRANBUEHL, The College of William and Mary, "Simulation of the Dynamic Reactions of Small-Ring Compounds," 3:30 pm, Room 103 Gross Chemical Laboratory, Duke.

17 Dr. WOLFGANG BERTSCH, University of Alabama, "A Systematic Approach to Sorbent Evaluation for Analysis of Volatile Organics," 3:30 pm, Room 124 Dabney Hall, NCSU.

17 Dr. WOLFGANG BERTSCH, University of Alabama, "Recent Development in Glass Capillary Chromatography," Chromatography Group, 8:00 pm, Room 103 Gross Chemical Laboratory, Duke.

20 Dr. PATRICK THADDEUS, Goddard Institute for Space Studies, "The Identification of Large Ions and Radicals in the Interstellar Gas," 11:00 am, Room 308 Venable Hall, UNC-CH.

20 Dr. GLENN H. BROWN, Kent State University, "Structure, Properties, and Applications of Liquid Crystals," ACS Lecture, 8:00 pm, Room 103, Gross Chemical Laboratory, Duke.

21 Dr. KAREN W. MORSE, Utah State University, "Copper Hydroborate Complexes: Structure, Behavior and Applications," 3:30 pm, Room 103 Gross Chemical Laboratory, Duke.

24 Dr. THOMAS HARRIS, Vanderbilt University, "Biomimetic Syntheses of Phenolic Natural Products," 3:30 pm, Room 124, Dabney Hall, NCSU.

Dec 1 Dr. JOHN ENDICOTT, Wayne State University, "Inorganic Photochemistry," 3:30 pm, Room 124 Dabney Hall, NCSU.

5 Dr. JAMES W. JORGENSON, University of North Carolina, Chapel Hill, "Capillary Liquid Chromatography," 3:30 pm, Room 103 Gross Chemical Laboratory, Duke.

TARHELIUM IS PUBLISHED BY THE NORTH CAROLINA SECTION OF THE AMERICAN CHEMICAL SOCIETY. THE VIEWS EXPRESSED HEREIN ARE NOT NECESSARILY THOSE OF THE SECTION. DIRECT ALL CORRESPONDENCE TO DR. WILLIAM L. SWITZER, EDITOR, C/O CHEMISTRY DEPARTMENT, NORTH CAROLINA STATE UNIVERSITY, RALEIGH, N. C. 27650.

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