

Tar^{He}lium



North Carolina Section
AMERICAN CHEMICAL SOCIETY

Vol. IV, No. 7

Raleigh, N. C.

April, 1974

"COHERENT LIGHT AND HOLOGRAPHY"

Speaker: Henry W. Morgan
Oak Ridge National Laboratory
Oak Ridge, Tennessee

Date: Wednesday, April 24, 1974

Place: Duke University
Durham, North Carolina

Time: 5:15 Happy Hour
President's Room (Second Floor)
Student Union

6:30 Dinner
Oak Room (First Floor)
Student Union

8:00 Lecture
Room 103, Paul M. Gross
Chemical Laboratory

MEETING-IN-MINIATURE ANNOUNCEMENT INSIDE

Henry W. Morgan is a Senior Physicist at Oak Ridge National Laboratory. After receiving his Ph.D. in physical chemistry from Minnesota, he joined Oak Ridge in 1948, where he has directed research in microwave, Raman, and infrared spectroscopy. Dr. Morgan has also been a faculty member of the Annual Fisk University Infrared Institute for more than 15 years.

In 1961 Dr. Morgan joined a group of atomic and optical physicists in a study of fundamental energy transfer processes in gas lasers. As a by-product of these efforts, simple lasers were designed which could be constructed by college students and used for experiments in physics, optics and simple holography.

"Coherent Light and Holography"

The continuous wave laser provided the first convenient source of coherent light. A brief history will be presented of the theory and experiments on stimulated emission of radiation, followed by a description of the He-Ne electrical excitation and the mechanisms of population inversion. An He-Ne laser will be assembled, and each of the components explained and its function demonstrated. Temporal and spatial coherence of radiation will be discussed, and illustrated by experiments with the laser beam. Interference phenomena will be treated in a general fashion, leading to the specific case of the hologram. Both experimental techniques and practical applications of holography will be explained.

HEAR YE! HEAR YE!

FIRST, (LATE!) AND LAST CALL FOR PAPERS

Our Meeting-in-Miniature will be held Wednesday, May 15, at Chapel Hill. Dr. William J. Bailey, Research Professor of Chemistry at the University of Maryland, College Park and President-Elect of the ACS, will be the plenary speaker. Help make our wind-up meeting a howling success by giving a paper. Send in the application form TODAY!

Application to Present Paper at Meeting-in-Miniature,
May 15, 1974, at the University of North Carolina at
Chapel Hill.

Author(s): _____

Position(s): _____

Institution: _____

Title of Paper: _____

Underline most appropriate section: Analytical,
Biological, Inorganic, Organic, Physical

To be presented by*: _____

Type of projector needed (if any) _____

NOTE: Application must be received by April 15, 1974

*If one of the authors is a student, it is urged that
the student present the paper.

Mail to: Dr. Maurice M. Bursey
Department of Chemistry
University of North Carolina
Chapel Hill, N. C. 27514

SIGNED _____

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