

MEETINGS

High Polymers

A FIVE-DAY symposium on high polymers, opening on April 30 and continuing through May 4, will be presented by Pennsylvania State University under the chairmanship of Arthur E. Woodward, associate professor of physics at Penn State.

In addition to selected topics concerning the preparation of new types of polymers, the symposium will offer lectures and demonstrations dealing with methods of investigating physical-chemical behavior in the bulk state and in solution. The following subjects will be discussed: (1) polymer preparation and kinetics; (2) dynamic properties of high polymers; (3) the crystalline state of high polymers; (4) infrared investigation of high polymers; (5) effects of irradiation on high-polymer properties; (6) flow of amorphous polymer melts and concentrated solutions; and (7) dilute solution properties.

Further information can be obtained by writing to the Conference Center, Pennsylvania State University, University Park, Pa.

High-Resolution NMR Spectroscopy

CURRENT problems and recent research in high-resolution nuclear magnetic resonance spectroscopy will be reviewed at a symposium to be held at the University of Colorado in Boulder from July 2 to 4. The sponsoring organization is the Division of Physical Chemistry of the American Chemical Society.

The program will include about two dozen invited papers covering the theory of chemical shifts and spin-spin interactions, solvent effects, nuclear magnetic double-resonance methods, relaxation methods, hindered internal rotations and conformational isomerism, analysis of spectra, organic structure analysis, hydrogen bonding, solutions of macromolecules, etc.

A complete program is expected to be available sometime this month. The conference chairman is Dr. Max T. Rogers, Department of Chemistry, Michigan State University, East Lansing, Mich.

Glass Technology

THE Sixth International Congress on Glass will be held at the Sheraton-Park Hotel in Washington, D. C., during the week of July 8-14. Arrangements for the event are being made by the American Ceramic Society, which is acting as the secretariat for the sponsoring organization, the International Commission on Glass. More than 600 specialists in glass technology from countries in Europe, Asia, and the Americas are expected to attend.

A technical program of 47 papers will explore process principles in continuous glass melting and forming, the structure and mechanical properties of glass, diffusion phenomena, metal-glass interaction during conditioning and forming, and properties of new glasses. A supplementary program will deal with the form, art, and history of glass.

The International Commission on Glass was established in 1933 to promote and stimulate the international exchange of information on the science, technology, and art of glass. It derives its support from participating national organizations in the United States, Germany, Norway, Sweden, Denmark, Finland, Italy, England, Japan, Spain, Poland, and Egypt.

Registration and program information concerning the congress can be obtained by writing to the American Ceramics Society, 4055 North High Street, Columbus 14, Ohio.

X-Ray Diffraction and Crystal Structure

ON the occasion of the fiftieth anniversary of the discovery of x-ray diffraction, the Ludwig Maximilians University of Munich, the Bavarian Academy of Sciences, and the International Union of Crystallography will sponsor a meeting entitled Fifty Years of X-Ray Diffraction. Following the meeting, which will take place at the University from July 25 to 27, the IUCr and the Section of Crystallography of the German Mineralogical Society will hold a symposium on recent advances in the experimental and theoretical methods of crystal-structure research, which will also be held at the University and will continue through July 31.

The commemorative session of the first meeting will include addresses on the early history of x-ray diffraction by P. P. Ewald, W. Friedrich, and Sir Lawrence Bragg. Invited papers on subsequent developments in the field will be presented in the remaining sessions. The following program has been announced: Instrumentation, M. J. Buerger; Inorganic Structures, G. Menzer; Silicates, W. H. Taylor; Metal Structures, J. S. Kasper; Organic Structures, J. M. Robertson; Structures of Biological Interest, L. Pauling; Structure of Haemoglobin and Myoglobin, M. F. Perutz; Fluids, Gases, and Macromolecules, P. J. W. Debye; Diffusion of X Rays by Thermal Agitation in Crystals, J. Laval; Background Scattering due to Disorder, B. E. Warren; Technical Application of X-Ray Analysis, R. Brill, A. Guinier, F. Laves; Refraction by an Ideal Crystal, G. Borrmann; and Spectroscopy of X Rays, Y. Cauchois.

The second symposium will commence on July 27

EXHIBIT

ACOUSTICAL SOCIETY OF AMERICA

Spring Meeting

May 23-26, 1962

Hotel New Yorker, N.Y.

The 1962 Spring Meeting of the Acoustical Society of America will feature a comprehensive EXHIBIT of the latest developments in acoustical instruments, devices and applications. It is anticipated that approximately 1000 acoustical scientists and engineers will attend the 1962 Spring Meeting.

Approximately 200 papers will be presented at the Meeting, covering such areas as

- aerospace noise
- architectural acoustics
- audio engineering
- ear and hearing
- electroacoustics
- instruments and apparatus
- noise control
- shock and vibration
- ultrasonics
- underwater sound
- and related fields

You are probably aware that informal exhibits were previously held at both the Spring and Fall Meetings. The Society has now decided to limit exhibits to the Spring Meeting *only* and to place the management of the Show with the American Institute of Physics. Please forward your inquiries to:

Mr. T. Vorburger, Exhibit Manager

AMERICAN INSTITUTE OF PHYSICS

335 East 45th Street, New York 17, N.Y.

TECH NEWS

for Scientists, Mathematicians

Operations Evaluation Group, M.I.T.

"Operations research"—the term itself—has attained full status in the recently published Webster's Third International Dictionary. OEG takes particular pleasure in this recognition because of our background as the oldest military operations research organization in the country.

Now when someone asks, "But what do you do?" we can refer him to Webster's.

OEG advises the Chief of Naval Operations, the Commandant, U. S. Marines, and certain Fleet and Force commanders regarding operational problems susceptible to quantitative analysis. A recent example is collected under the title, "The Selection of Cargo for Air Transport." Here the objective was to determine criteria for shipping the myriad replacement parts stocked by the Navy's Yokosuka (Japan) Supply Depot.

It was found, for example, that the items which are candidates for air transport from Oakland, California, to Yokosuka

can be selected on the bases of dollar volume of annual shipments and value per pound. Under the assumptions in the study, \$7.00 per pound was the break-even point. That is, there will be transportation savings if items with a higher value per pound go to Yokosuka by air.

The more sobering content of another study can be deduced from its title: "The Effects of Radiation on Populations," a two-part work considering (1) the effects on individuals exposed to radiation today and (2) the genetic consequences for future generations. One of many conclusions: The continued detonation of nuclear weapons in the stratosphere, at a 100-megaton-yearly rate, would result in reducing individual life expectancy by approximately 20 days. Although human survival would not be endangered by this testing rate, radiation from a nuclear war—involving the detonation of 100,000 to 1,000,000 megatons—would constitute a definite hazard to the mortality of the human race.

Assisting in the creation of a stable U. S. deterrent posture is one of the major aims of OEG's research program. Permanent career positions are available to scientists and mathematicians with advanced degrees who are interested in problem-solving and want to contribute substantively to the national purpose. These positions are in Washington, D. C. Please send your inquiry to the Director, Dr. Jacinto Steinhardt.

OEG

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with a lecture on phase determination by W. Hoppe. The remainder of the program will include the following papers: Low-Temperature Structure Analysis, C. S. Barrett; Structure Imperfections, H. Jagodzinski; Symmetry, B. N. Delaunay; Electron Microscopy as a Means for Structure Analysis, H. Ruska; and Automatic Instrumentation, R. Pepinsky.

Additional information concerning the meetings can be obtained by contacting the chairman of the local committee, Dr. F. Bopp, Institute for Theoretical Physics, University of Munich, Schellingstrasse 4-8, Munich 13, Germany.

Electromagnetic Scattering

PRREREGISTRATION by May 15 is required for attendance at an interdisciplinary conference on electromagnetic scattering which will be held August 13-15 at Clarkson College of Technology under the sponsorship of the American Chemical Society's Division of Colloid and Surface Chemistry and the Air Force Cambridge Research Laboratories. Participants in the conference are expected to include astronomers, chemists, mathematicians, physicists, meteorologists, radio engineers, geophysicists, biochemists and other scientists working in one or another area of the field.

The program lists sessions on scattering by spherical particles, scattering by nonspherical particles, scattering by charged species in solution, interactions in solids and liquids as determined by electromagnetic scattering, and multiple and incoherent scattering. As much time as possible will be allowed for discussion. Preregistration forms and further information can be obtained from M. Kerker, Clarkson College of Technology, Potsdam, N. Y.

Electromagnetic Measurements

SPONSORED jointly by the Radio Standards Laboratory of the National Bureau of Standards, the Professional Group on Instrumentation of the Institute of Radio Engineers, and the Instrumentation Division of the American Institute of Electrical Engineers, the 1962 Conference on Precision Electromagnetic Measurements will be held August 14-16 in Boulder, Colo.

Formerly called the Conference on Standards and Electronic Measurements, the meeting will be concerned with the strictly technical aspects of electromagnetic measurement. The title of the 1962 meeting was changed in order to emphasize the basic goal: the advancement of standards and accuracy throughout the coherent frequency spectrum. In addition, it is planned to give more emphasis this year to the impact of quantum electronics and space physics on electromagnetic measurements.

As in previous conferences, it is expected that the papers presented will be published in an issue of the *IRE Transactions on Instrumentation*. Specific areas