

MEETINGS

Gordon Research Conferences

Four New Hampshire schools, (Colby Junior College, New Hampton School, Kimball Union Academy, and Tilton School) will again be the locations of the annual Gordon Research Conferences, which are to be held this year from June 11 to August 31. Designed to stimulate research by fostering a free and informal exchange of ideas among persons actively interested in the subject areas selected for discussion, each conference is organized as a series of morning and evening sessions, with afternoons left free for recreation and informal discussions. The conferences are intended "to bring experts up to date on the latest developments, to analyze the significance of these developments, and to provoke suggestions concerning the underlying theories and profitable methods of approach for making progress".

Although the majority of the conferences are oriented toward chemistry and the biological and medical sciences, brief listings of topics to be covered are given below for sessions which may be of interest to physicists.

Colby Junior College, New London, N. H.

Catalysis (June 18-22): adsorption and collective paramagnetism, transport phenomena in solids and catalytic activity, physical and chemical studies on the catalysts and reactions of hydrosulfurization, effects of radiation on solid catalysts, significance of ionic and electronic defects for reactions at the surface of ionic crystals, and light scattering and the study of catalysts.

Nuclear Chemistry (June 25-29): nuclear reactions at low to medium energies, including compound statistical processes, direct interaction processes, nuclear-level densities and parameters, role of angular momentum in nuclear reactions, and recent advances in nuclear fission.

Polymers (July 2-6): high-resolution nuclear-magnetic-resonance spectroscopy of polymers, polymerization in the crystalline state, nature of the crystalline state in polymers, remarks on the nature of the crystalline state in polymers, and the physics of semicrystalline polymers.

Corrosion: Influence of Structure and Composition on the Reactivity of Metals (July 23-27): field-ion microscopy of surface structure and reactions, influence of lattice distortions on the initiation of corrosion in pure aluminum, imperfections of structure and their influence on the reactivity of metals, and the role of crystalline structure in the surface behavior of semiconductors.

Instrumentation (August 6-10): an ultraminiature pump, application of semiconductor strain-measuring elements to instrumentation, measurement of thermoelectric properties of materials, measurements of thermal conductivity, methods for evaluating spectrophotometric performance, remote manipulation, artificial intelligence, automatic processing of stress-strain data, applications of superconducting magnets, instrumentation for a nuclear rocket, magneto-optic positioning, photographic and underwater instrumentation, recent concepts in error and

uncertainties, recent developments in molecular amplifiers, and instrumentation in the excitation of Raman spectra.

Other conferences at Colby will include: Hydrocarbon Chemistry (June 11-15), Textiles (July 9-13), Elastomers (July 16-20), Medicinal Chemistry (July 30-August 3), Food and Nutrition (August 13-17), Separation and Purification (August 20-24), and Cancer (August 27-31).

New Hampton School, New Hampton, N. H.

Scientific Information Problems in Research (July 2-6): linguistic and semantic problems, man-machine interaction, machines of the near future, the basic tool, and goals and prospects.

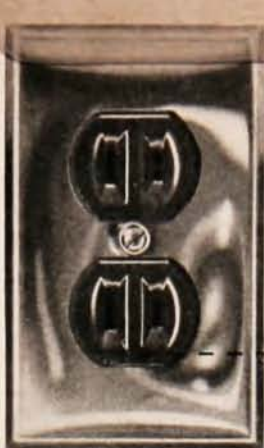
Chemistry and Physics of Isotopes (July 9-13): tunneling in reactions and kinetic isotope effects, nonequilibrium and transmission-coefficient problems in exchange reactions, study of isotope effects on molecular structure, isotope-separation coefficients in distillation processes, hydrogen isotope effects in gas-phase reactions, several factors controlling the proton kinetic isotope effects, the inductive effect of deuterium, and the temperature dependence of secondary deuterium isotope effects.

Adhesion (August 27-31): theoretical and experimental approach to some basic problems, constitutive effects in adhesion and adhesion, configuration of polymers in solution and in liquid-solid interfaces, role of electric double layer in the phenomena of adhesion of solid bodies, further studies on surface phenomena by frustrated total internal reflection, surface activation of solid polymers in electric discharges, fundamentals of adhesion, fracture theory applied to heterogeneous systems, and importance of the phenomenon of spontaneous diffusion and interchangeable diffusion for autohesion and adhesion of high polymers.

Other conferences scheduled at New Hampton School: Environmental Sanitation—Waste Water Reclamation (June 11-15), Biochemistry and Agriculture (June 18-22), Nucleic Acids (June 25-29), Steroids and Other Natural Products (July 16-20), Organic Reactions and Processes (July 23-27), Statistics in Chemistry and Chemical Engineering (July 30-August 3), Inorganic Chemistry (August 6-10), Analytical Chemistry (August 13-17), and Metals and Metal Binding in Biology (August 20-24).

Kimball Union Academy, Meriden, N. H.

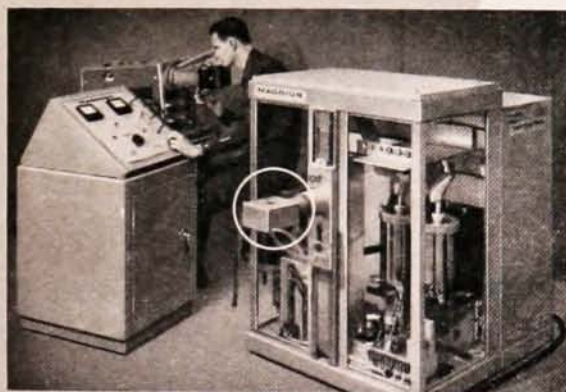
Physical Metallurgy—Structure and Properties of the Partially Periodic State (June 25-29): structural arrangements in the partially periodic state, x-ray structural analysis of the partially periodic state, transformation mechanisms and transformation kinetics, the growth of crystals into supercooled liquids, band structure in the partially periodic state, nuclear resonance in the liquid and solid states, electronic transport properties of liquid metals, influence of order on transport properties in Cu₃-Au, nature of diffusion in liquids, effects of structural order on atomic diffusion in silica glass, creep and viscosity of ice, structure of the interface separating solid and liquid states, structure and properties of amorphous films obtained from the melt,



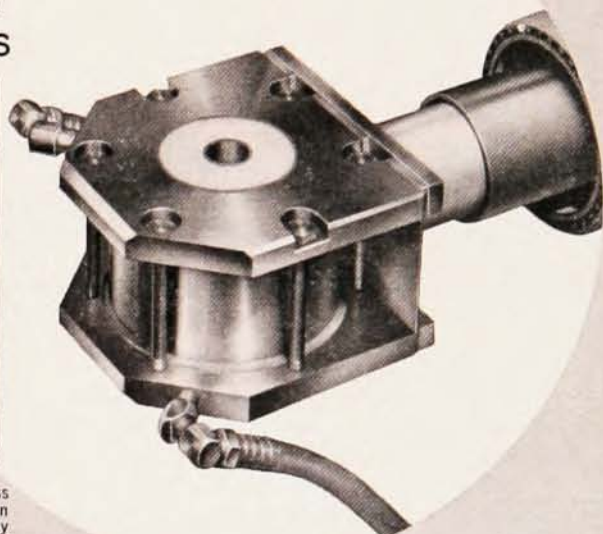
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Solid-State Studies in Ceramics—Structural Aspects (July 30-August 3): kinetics of ceramic reactions, study of sintering by resistivity methods, sintering of nuclear ceramics, permeability of alumina to gases, inclusions in brittle matrixes, microstresses in synthetic crystal-glass systems, some effects of grain boundaries on strength properties, effect of structure on properties of ceramics made by nucleation of homogeneous glasses, crystal chemistry and structural anomalies of SiO_2 and AlPO_4 , and interaction of point defects and dislocations in ceramic crystals.

Chemistry and Physics of Solids—Optical Properties of Solids (August 13-17): optical and ultraviolet properties of semiconductors, impurity levels in semiconductors, localized states in insulators, alkali halides, silver halides, fine points in x-ray energy-level diagrams in solids, magneto-optical effects in semiconductors, optical experiments in metals, optical properties of the noble metals, lattice vibrations, magneto-optical effects in metals, nonlinear effects in solids, infrared experiments in ferrimagnetics, excitons.

Infrared Spectroscopy (August 27-31): rotational barriers, rotational isomerism, infrared spectra of solid solutions, quantitative Raman spectroscopy, masers as spectroscopic sources, recent developments in infrared detectors, potential functions, potential functions in hydrogen bonding, effects of high pressure on infrared spectra, group frequencies and the transference of force constants, utility of normal coordinate calculations, and infrared chemiluminescence.

Also included in the Kimball program are conferences on Lipid Metabolism (June 11-15), Cell Structure and Metabolism (June 18-22), Coenzymes and Metabolism (July 2-6), Chemistry, Physiology, and Structure of Bones and Teeth (July 9-13), Radiation Chemistry (July 16-20), Chemistry at Interfaces (July 23-27), Toxicology and Safety Evaluations (August 6-10), and High-Temperature Chemistry (August 20-24).

Tilton School, Tilton, N. H.

Chemistry and Physics of Space (July 2-6): small bodies and particles in space, including such topics as origin and development of meteorites, anomalous isotopic compositions of meteorites, cosmic-ray-exposure ages of meteorites, tritium in solar cosmic rays, element abundances in meteorites and stars, experimental studies of hypervelocity impacts, shock propagation in solids, shock transformations of minerals, results of the Ranger lunar experiments (if successful), nature of particles in comet tails, the zodiacal light, the gegenschein, measurements of interplanetary dust particles with satellites, examination of interplanetary dust collected from high altitudes, space erosion by dust particles, properties of interstellar grains, formation of H_2 on interstellar grain surfaces, diffuse interstellar lines and their interpretation.

Theoretical Chemistry—Molecular Quantum Mechanics (July 9-13): self-consistent calculations on atoms and molecules, qualitative applications of quantitative calculations (population analyses and the magic formula), configuration interaction calculations on atoms and small molecules, applications of quantum-mechanical calculations to organic chemistry, pair functions and

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density matrixes, nonbonded atom-atom interactions, hyperfine and external field interactions (theory and small molecules; larger systems), and experimental areas inviting theoretical work.

Additional conferences at Tilton will be held on Basic Chemistry of Aging (June 11-15), Chemistry of Carbohydrates (June 18-22), Friction, Lubrication, and Wear (June 25-29), and Organic Coatings (July 16-20).

Attendance at each conference will be limited to about 100 persons. Requests for application forms and other correspondence should be sent to W. G. Parks, Director, Gordon Research Conferences, University of Rhode Island, Kingston, R. I. After June 11, Dr. Parks can be reached at Colby Junior College, New London, N. H.

Nuclear Physics

The second annual University of Michigan conference on nuclear physics will be held June 11-16 at Boyne Mt. Lodge, Boyne Falls, Mich. As was the case last year, this six-day meeting is sponsored by the National Science Foundation and will be devoted to selected topics in nuclear physics as developed by six invited speakers. The lecture program includes papers by N. R. Corngold on neutron thermalization, L. L. Foldy on electron-neutron interaction, S. N. Gupta on theory and application of meson-baryon interactions, A. C. Kolb on experiments with high-temperature plasma, Albert Simon on plasma and thermonuclear theory, and Roman Zelazny on application of singular eigenfunction expansions to problems in plasma oscillations. Travel expense funds may be available to support some participants who could not otherwise attend.

Interested persons should contact the conference secretary, Prof. John S. King, Pheonix Memorial Laboratory, University of Michigan, Ann Arbor, Mich.

Physics Teachers

For its 1962 summer meeting, June 26-28, the American Association of Physics Teachers will be the guest of Carleton College in Northfield, Minn., where sessions will be held in Carleton's new Olin Hall of Science. In addition to the program of contributed and invited papers, a joint session will be held on the 28th with the Commission on College Physics, which is planning to conduct a review conference at St. Olaf College in Northfield during the last part of the week.

Requests for additional information concerning the AAPT meeting should be sent to the Association's secretary, Prof. Ralph P. Winch, Williams College, Williamstown, Mass.

High-Energy Physics

Theoretical problems in high-energy physics, including those arising in and above the highest energy ranges attainable with existing particle accelerators,