March Meeting in San Diego

The largest meeting ever held by The American Physical Society will include poster sessions and discussions of integrated electronics and of affirmative action for the woman scientist.

Bruce C. Carr

Always eager to gather in warmer climates after the annual meeting, The American Physical Society has selected San Diego as the location for its second general meeting of the year. The meeting will be held 21–24 March and the headquarters hotel is the Town and Country Convention Center and Hotel.

The Society's second short course, "Spectroscopic Techniques for Polymers," has been scheduled for the weekend preceeding the March Meeting, 19–20 March. Organized by the Division of High Polymer Physics, the course is designed to acquaint participants with the fundamentals and recent developments in the spectroscopic studies of macromolecules. The course requires preregistration through Jack L. Koenig at Case Western Reserve University.

A highlight of the March Meeting is a concurrent conference entitled "Integrated Electronic Technology." Sol Triebwasser of IBM's Watson Research Center was primarily responsible for organizing the conference.

Registration fees for the March Meeting are as follows: $20 for APS members, $30 for non-members and $2 for full-time graduate students.

Traditionally the March Meeting of the APS has been known as the "Solid State Meeting." According to W. W. Havens Jr, Executive Secretary of the Society, the Solid State Meeting was begun in the 1940's at the request of solid-state physicists who desired a forum to discuss the physics of condensed matter. Subsequently this meeting has expanded in scope and the number of papers and meeting participants has increased substantially. Today the spotlight is shared among four divisions of the Society—Solid State Physics, High Polymer Physics, Chemical Physics and Biological Physics. Havens estimated (at press time) that this year's March Meeting will include some 1500 invited and contributed papers—in comparison with 1300–1400 invited and contributed papers at the last two March Meetings, this number represents the largest meeting ever held by the Society.

Bruce C. Carr is assistant editor on the staff of PHYSICS TODAY.

Concurrent conference

Integrated electronic technology, an area that offers may opportunities for basic research, will be the subject of a concurrent conference of the APS Committee on Applications of Physics. Presented in five parts, speakers from numerous research labs, such as Xerox, Bell, IBM and Texas Instruments, will discuss integrated electronics in both its general features and in the specifics of material properties and new integrated technologies.

The first session will introduce silicon integrated circuits and then proceed with a discussion of some applications of solid-state physics to integrated electronic technology—an overview will be presented by James M. Early of the Fairchild Camera and Instrument Corp (Palo Alto, Calif.). The second session on lithography—the basic technology of forming complex patterns on a silicon surface—includes papers on the optical physics of radiation control and the physics of radiation interacting with the other materials used in silicon circuits. The modification of silicon in particular regions is the topic of the third session on process phenomena and the fourth session will cover the problems associated the various materials, such as silicon dioxide and metal conductors, that are contained in integrated circuits.

Concluding the conference is a session devoted to fabrication technologies that have arisen from the needs of silicon electronics. Applications of these technologies include integrated optics, amorphous film devices, magnetic bubbles and integrated Josephson junction circuits. The session will be headed by Esther Conwell (Xerox Corp), and the speakers who are scheduled are Andrew Bobeck (Bell Laboratories), Amnon Yariv (California Institute of Technology), Juri Matisoo (IBM Watson Research Center) and David Adler (Massachusetts Institute of Technology).

Ceremonial Session

The Ceremonial Session of the Society will take place on Tuesday afternoon, 22 March. George E. Pake, APS President, will preside and bestow five prizes—one of which will be the first Earle K. Plyler Prize, which was established this year (see APS news, page 77).

Solid-state physics. The Oliver E. Buckley Solid State Physics Prize will be given to Leo P. Kadanoff, University Professor of Physics at Brown University, Providence, Rhode Island. The Buckley Prize, which is endowed by Bell Laboratories, consists of $5000 and a citation. Kadanoff was cited for "his contributions to the conceptual understanding of phase transitions and to the theory of critical phenomena."

Kadanoff received his doctorate in physics from Harvard University in 1960. After a year as a National Science Foundation fellow, he joined the faculty of the University of Illinois at Urbana–Champaign where he served as professor of physics, 1964–69. During his tenure at Illinois, he was an Alfred P. Sloan Foundation Fellow, 1964–67. He took up a position as professor in the physics and engineering departments at Brown University in 1969, and became University Professor in 1970.

KADANOFF

KRIMM

HALL

Kadanoff's research interests include solid-state physics, many-particle theory, and phenomena near phase transitions; he has also worked on the development of urban-growth models.

High-polymer physics. The APS High Polymer Physics Prize recipient is Samuel Krimm, professor of physics at the University of Michigan, Ann Arbor. A certificate and $3000 honorarium comprise the award, which is sponsored by Ford Motor Co. Krimm was cited for "his outstanding experimental studies and theoretical developments in infrared and Raman spectroscopy and x-ray scattering from natural and synthetic polymers."

Krimm received his master's and his PhD in physical chemistry (1950) from Princeton University. He was a fellow at the University of Michigan for two years and became a faculty member in 1952 as instructor of physics. He attained his current position as professor of physics in 1963, after having served one year as a National Science Foundation senior fellow. Krimm was appointed dean of research, the College of Literature, Science and the Arts in 1972. Infrared spectroscopy, x-ray diffraction, high polymers and protein structure are among Krimm's research interests.

New materials. The 1977 American Physical Society International Prize for New Materials will be shared by four physicists—H. Tracy Hall of Brigham Young University, Francis Bundy, Herbert Strong and Robert H. Wentorf Jr, all of General Electric Research and Development Center, Schenectady, N.Y. The

Invited papers and special events

mon.

MORNING

Symposium of the Division of Solid State Physics: Structural Phase Transitions *Elliott; Batterman; Shirane; Klein; Phillips*

Symposium of the Division of Solid State Physics: Phase Transitions in Superionics *Mahan; Salamon; Burns; Boyce*

Symposium of the Division of Plasma Physics *Harting; Horak; Mitchell; Odette; Crandal*

Concurrent Conference on Integrated Electronics: Silicon Integrated Circuits *Early; Kennedy; Mead; Fowler*

Symposium of the Division of Biological Physics: Bioenergetics at the Molecular Level *Clayton; Pearlstein; Lozier; Kemeny*

Division of High Polymer Physics: Scattering *Knox*

Tunneling *Thompson*

AFTERNOON

Symposium of the Division of Solid State Physics: Helium *Mochel; Berthold; Wheatley; Skold; Ketterson*

Symposium of the Division of Electron and Atomic Physics *Tully; Thomas; Celli; Berry*

Symposium of the Forum on Physics and Society: Continuing Education for Professionals *Blanpied; Griesmer; Decker; Fetter; Munushian*

Concurrent Conference on Integrated Electronics: Lithography *Heidenreich; Dill; Everhart; Sullivan*

Division of High Polymer Physics: Spectroscopic, Electrical and General *Koenig*

Mixed Valence Compounds *Sales*

Poster Session: Phase Transitions and Critical Phenomena

Symposium of the Committee on the Status of Women in Physics: Affirmative Action and the Woman Scientist *Stark; Rossiter; Freeman*

tues.

MORNING

Symposium of the Division of Solid State Physics: Superconductivity *Geballe; Rowell; Sweedler; Chang*

Symposium of the Division of Solid State Physics: Electronic Properties of Semiconductor Inversion Layers *Kennedy; Quinn; Kamgar; Hartstein*

Symposium of the Division of Chemical Physics: The Role of Charge Density in Molecular Physics *Stewart; Bader; Fink; Harris*

Concurrent Conference on Integrated Electronics: Process Phenomena *Hu; MacRae; Plummer; Bean*

Symposium of the Division of Biological Physics: Electron Motion in Aqueous Systems *Mozumder; Hunt; Miller; Grossweiner*

Phonons in Amorphous Solids *Golding*

Division of High Polymer Physics: Mechanical Properties *Samulski*

Quantum Fluids *Vilches*

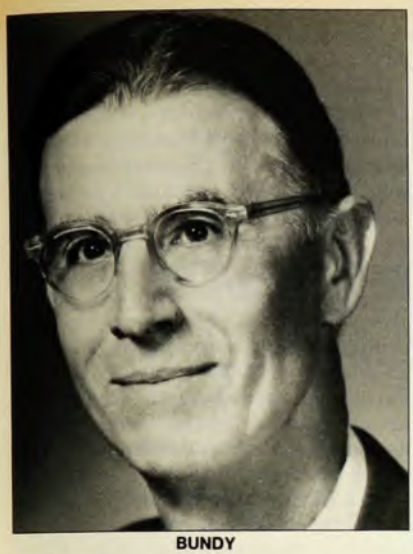
Poster Session: Radiation Damage

Business Session: Division of High Polymer Physics

AFTERNOON

Ceremonial Session: *Kadanoff; Krimm; Rahman; Bundy; Hall; Strong; Wentorf; Townes*

Magnetic Resonance *Hahn*



BUNDY

STRONG

WENTORF

prize, which is sponsored by International Business Machines Corp, consists of $5000 and a certificate. The recipients were honored for "their outstanding research contributions and inventions which include the first reproducible processes for making diamond; the synthesis of cubic boron nitride; and the development of the high-pressure processes that are required to produce these materials."

Hall, Distinguished Professor of Chemistry at Brigham Young University, studied as an undergraduate at the University of Utah and earned his doctorate there in 1948. From 1942 to 1944, he worked for the US Bureau of Mines. He began working at General Electric's Research and Development Center in 1948 and served as director of research, 1955–67. During this time, Hall developed the original design for the GE "belt"—an apparatus for large-scale work at high pressures. His work on this and later collaboration with Wentorf, Bundy and Strong led to the first synthesis of diamond in 1954. Hall left GE in 1967 to take up the position he now holds at Brigham Young University in his native state of Utah. He serves also as a consultant to government and industry.

Bundy earned his PhD in 1937 at Ohio State University and was a faculty member there until 1942. He worked for Harvard University's underwater-sound laboratory during the war and, in 1946, he joined the staff at GE as a research physicist. Since his collaboration with the other prize winners, he has continued his

Properties of Heme and Hemoglobin Compounds *Loew*

Quasi-One-Dimensional Theory *Emery*

Poster Session: Ultrasonics

Poster Session: LEED

EVENING

Cocktails

wed.

MORNING

Symposium of the Division of Solid State Physics: Chalcogenide and Tetrahedral Amorphous Semiconductors *Kastner; Street; Paul; Carlson*

Symposium of the Division of Solid State Physics: Electronic Structure of Metals, Mostly Magnetic *Shoenberg; Vosko; Williams; Callaway*

Symposium of the Division of Chemical Physics: X-Ray Absorption Spectroscopy and Its Applications *Citrin; Sayers; Sinfelt; Doniach*

Concurrent Conference on Integrated Electronics: Materials Properties *Kriegler; Black; Mayer; Cullen*

Symposium of the Division of Biological Physics: Membrane Associated Transport Phenomena *Eisenman; Montal; King; Rayfield*

Division of High Polymer Physics: Crystallinity and Morphology *Peterlin*

Business Meeting: Division of Biological Physics

AFTERNOON

Symposium of the Division of Solid State Physics: Electron–Phonon Interactions and Transport in Normal and Superconducting Metals *Swihart; Bass; Garland; Smith*

Symposium of the Division of Solid State Physics: Magnetism *Liu; Aton; Pomerantz; Erskine*

Symposium of the Forum on Physics and Society: Energy Conservation in Industry *Gunkler; Berg; Schipper; Williams; Comly*

Concurrent Conference on Integrated Electronics: New Integrated Technologies *Bobeck; Yariv; Matisoo; Adler*

Poster Session: Division of High Polymer Physics

Optical Properties of Biological Materials *Zewail; Hemenger*

Poster Session: Chemisorption and Physorption on Metal Surfaces

Business Meeting: Division of Solid State Physics

thurs.

MORNING

Symposium of the Division of Solid State Physics: The Physics of SiO_2 *Chelikowsky; Joannopoulous; Weinberg; Hughes*

Symposium of the Division of Chemical Physics: Laser Induced Processes I *Hochstrasser; Freed; Freund*

Organic Conductors *Epstein*

Many-Body Theory *Lundqvist*

Poster Session: Band Structure and Fermi Surface of Metals

Poster Session: Plasma Physics and General Physics

Business Meeting: Division of Chemical Physics

AFTERNOON

Symposium of the Division of Chemical Physics: Laser Induced Processes II *Goodman; Kompa; Mukhamel*

Division of High Polymer Physics: Rheology and General *Pearson*

RAHMAN

research in ultra-high pressure physics. His other interests include the physics of rocket gases, turbine-shaft and bearing vibration and the physics of vacuum thermal insulation systems.

Strong retired from GE in 1973 and now holds a position at Union College as research associate of physics. He earned his PhD at Ohio State University and, prior to joining the staff of GE in 1946, he worked for ten years as a research physicist with Kendall Co in Illinois. Strong collaborated with Wentorf in the late 1950's on single-crystal growth. His specialities include technological and industrial use of diamonds, measurements and phase equilibria and the synthesis of gem diamond.

Wentorf is currently a research associate in chemistry at GE. He studied chemical engineering as an undergraduate of the University of Wisconsin and received his doctorate in chemistry in 1952. The same year he joined GE's Research and Development Center. In 1957 Wentorf achieved the synthesis of cubic boron nitride—the diamond form of boron nitride. He and Strong wrote an article in 1970 on the technique of growing high-quality single crystals. In addition to his work in high-pressure chemistry and physics, Wentorf has done research in energy systems and solar-energy utilization.

Chemical physics. Aneesur Rahman, associate physicist at Argonne National Laboratory (Argonne, Illinois), has been chosen to receive the 1977 Irving Langmuir Prize in Chemical Physics. The Langmuir Prize, which is donated by the General Electric Foundation, consists of $5000 and a citation. Rahman's citation reads as follows: "For his contribution to our understanding of the liquid state through computer studies of the structure and dynamics of realistic models of liquids."

Rahman, a native of India, studied for his master's at Cambridge University and received his doctorate from the University of Louvain in 1953. He worked as a lecturer of physics at Osmania University, India, 1949–57, and was a research scientist at the Tata Institute of Fundamental Research in India from 1957 to 1959. He joined the staff of Argonne in 1960, where he now holds his current position. In addition to his studies of liquids, Rahman has done work on the computer simulation of solids; his other research interests include neutron inelastic scattering, plasma simulation and dynamical correlations in water and ice.

Each of these award recipients, along with Charles H. Townes (University of California–Berkeley), the Plyler Prize winner, has been invited to present a talk at the Ceremonial Session of the March Meeting.

Special Interest

The APS Forum on Physics and Society has arranged two special symposia for the March Meeting. On Monday afternoon invited speakers will present papers on "Continuing Education for Professionals." "Energy Conservation in Industry" is the subject of the Forum's second symposium, which will be held Wednesday afternoon.

The Committee on the Status of Women in Physics has organized an informal symposium for the late afternoon on Monday. "Affirmative Action and the Woman Scientist" is the topic for the three invited speakers—Nola N. Stark (University of California, Los Angeles), Margaret Rossiter (University of California, Berkeley) and Jo Freeman (State University of New York, College at Purchase).

Equipment exhibit

An equipment exhibit, organized by the American Institute of Physics, will be located in the Presidio Room of the Mission Ballroom, which is a newly completed addition to the Town and Country Hotel. Some 50 companies had reserved space in 56 exhibit booths by press date. Laser, x-ray and photon spectroscopy devices will be displayed as well as a variety of NMR, EPR and ESR equipment. State-of-the-art components and systems that are used in many analytic approaches for advancing knowledge of matter will also be shown. Other products include cryogenic instrumentation, electro-optical equipment, wide-band power amplifiers, spectrophotometers and surface-physics gear. Books and journals will be displayed.

Show hours are from noon to 7:00 pm on Monday, 10:000 am to 5:00 pm on Tuesday and from 10:00 am to 4:00 pm on Wednesday. Show guides may be obtained at the registration desk. □