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early frequency control activities—many of which activities he himself had helped to mold. Gerber never lost his enthusiasm and zest, whether he was describing his own work—for example, showing the influence of crystal plate parallelism on mode spectrum purity (1943–44)—or recounting stories of Arnold Sommerfeld's lectures or of the patent rivalry between Bechmann-Telefunken and Straubel-Zeiss over the discovery of the first temperature-stable quartz cuts.

ARTHUR BALLATO
*US Army ET&D Laboratory
Fort Monmouth, New Jersey*

Stanley Corrsin

Stanley Corrsin, an internationally known specialist in turbulence, died of cancer 2 June at his home in Ridgewood, Maryland. He was 66 years old.

Corrsin was born in Philadelphia, Pennsylvania, and was a graduate of the University of Pennsylvania. He did his graduate work at Caltech, where he studied in the Guggenheim Aeronautical Laboratory under Theodore von Kármán. Corrsin received his PhD in 1947, the first advisee of Hans W. Liepmann. In 1947 he was hired by the fledgling department of aeronautics of Johns Hopkins University; he was at various times affiliated with the departments of chemical engineering, mechanics and materials science, mechanical engineering and biomedical engineering.

Corrsin was awarded the 1983 Fluid Dynamics Prize by the division of fluid dynamics of The American Physical Society. Just before his death, the aerospace, engineering mechanics and hydraulics divisions of the American Society of Civil Engineers awarded him the von Kármán Medal for his contributions to the study of turbulence.

Corrsin made a number of fundamental contributions to the study of turbulence, profoundly increasing our understanding of turbulent mixing, the interfaces between turbulent and non-turbulent fluid, and the deformation of material lines and surfaces by turbulence. In addition, Corrsin interested himself in various problems in biomechanics, notably human locomotion, maternal blood flow in the human placenta, arterial flutter, the pumping of mucus by cilia, the restoration of the pre-corneal tear film after blinking, and the aerodynamics of the albatross and of formation flying in bird flocks.

During the course of nearly 40 years at Johns Hopkins, Corrsin had 25 PhD students and dozens of postdoctoral associates and visitors. He was a particularly gregarious and cheerful man,

as well as being sensitive and perceptive. His students and colleagues will remember especially the regular morning coffee hours and receptions for successful PhD candidates where, with Corrsin's considerate encouragement, they mixed without regard for rank and learned to view their work seriously but lightheartedly. Corrsin's informal style of research management (which he would never have referred to in those words) has become a model in many institutions for the management of what Einstein referred to as "this delicate flower."

JOHN LUMLEY
*Cornell University
Ithaca, New York*

Serge Nikitine

Serge Nikitine died on 30 June 1986. He was born in 1904 in Odessa, Russia. After the October Revolution his parents emigrated to Yugoslavia and then to France, where Nikitine graduated in both literature and the sciences. He obtained his doctorate from the University of Paris in 1941. During the war he escaped to Switzerland, where he was a *Privatdozent* at the University of Zurich from 1943 until 1946. Between 1946 and 1950, he was professor and director at the Physical Institute of the University Farouk I, in Alexandria. After his return to France in 1950, he became *Maître de Recherches* at CNRS and then director at the same agency. In 1957 he became a professor at the University of Strasbourg, France.

Nikitine is considered, jointly with the Japanese physicist Hagashi and the Russian physicist Evgeni Gross, to be the father of experimental exciton physics. With great enthusiasm and enormous scientific understanding and skill, he devoted his research activities to the study of the optical properties of semiconductors. Since 1951, Nikitine and his group had studied a variety of substances, in particular the oxides and halogenides of copper, but also mercury iodide, cadmium sulfide, lead iodide, silver chloride and related substances. He discovered a variety of new optical transitions that he attributed to excitons. In numerous detailed experiments and theoretical studies he clarified the various excitonic states observed in absorption and emission spectroscopy.

With the advent of the laser, it became possible to generate high densities of excitons. Nikitine and his co-workers were also pioneers in exploiting this capability and, for example, discovered biexcitons—molecules of excitons—whose kinetics of formation Nikitine studied in great detail. He



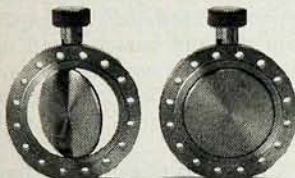
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also investigated jointly with his co-workers various kinds of laser action from excitons and biexcitons.

When Nikitine published his first results on exciton spectra, they were met with skepticism by many physicists who believed that the reported absorption or emission lines were due to crystal impurities. But Nikitine's physical insight and tenacity led to the many skillful experiments and deepening theoretical developments that demonstrated the correctness of his interpretation. Undoubtedly, he founded a new branch of condensed matter physics, which is still in a stage of intense activity, as witnessed by the numerous publications on excitons worldwide.

Nikitine founded the study group on solid-state spectroscopy within the framework of the Council of Europe. This study group meets twice annually to discuss progress in different aspects of semiconductor spectroscopy, attracting many leading European scientists in the field.

Until very recently, Nikitine remained active in organizing and animating these meetings. Those who attended these international conferences will long remember his striking personality, his youthful enthusiasm and his precise thinking, but also his vast culture, his nobility and his warm-heartedness.

HERMANN HAKEN

University of Stuttgart

Stuttgart, West Germany

ANDRE MYSYROWICZ

Centre National de la Recherche

Scientifique

Paris, France

Walter Gordy

Walter Gordy, James B. Duke Professor Emeritus of Physics at Duke University, died on 6 October 1985 at the age of 76. He was reared on a farm in central Mississippi, where he was born in 1909. He gained his elementary and high school education in the rural schools of Newton County—the first seven grades in a one-teacher school with only five-month terms. He was graduated from Mississippi College in 1932. In that year he came to the University of North Carolina at Chapel Hill as a graduate student and teaching assistant in physics. From this institution he received an MA (1932) and his PhD (1935).

While teaching at Mary Hardin-Baylor College in central Texas (1935–41) he spent his summers studying hydrogen bonding with infrared spectrometers at the University of North Carolina and Ohio State University. In

1941 he received a National Research Fellowship—one of two given in physics that year—to work with Linus Pauling at Caltech. His fellowship was interrupted by World War II: In February 1942 he joined the staff of the Radiation Laboratory of the Massachusetts Institute of Technology. At the end of the war, in February 1946, he became a member of the physics department of Duke University.

Gordy did many of the earliest infrared studies of hydrogen bonding. He obtained the first spectroscopic evidence that hydrogen bonds form between unlike molecules, a type of bonding now known to control many physical, chemical and biological phenomena, such as solubility, capillary action and the formation of films on surfaces. He found a systematic relationship between hydrogen-bonding strength and basicity and using this relationship measured spectroscopically the basicities, or electron donor powers, of a large number of organic substances.

Gordy significantly extended the range of applicability of the electronegativity scale of the elements. He proposed that electronegativity can be considered as the electric potential of the atom at a distance of the covalent radius from the nucleus and showed how to calculate from this concept an electronegativity scale consistent with the Pauling scale derived from bond energies.

Gordy was one of the leaders in the small group of scientists who opened up the field of microwave spectroscopy immediately after the war, authored the first review article on the subject (in *Reviews of Modern Physics*, 1948) and was senior coauthor (with William V. Smith and Ralph Trambarulo) of the first book on the topic, *Microwave Spectroscopy* (Wiley, 1953). He contributed to or improved many of the experimental techniques and instruments for microwave spectroscopy. With his students, he extended the precise microwave electronic methods of spectroscopy throughout the millimeter wave region and to wavelengths below a half-millimeter, effectively overlapping the far infrared region. From microwave spectral measurements Gordy derived molecular structures, electric dipole moments and nuclear quadrupole couplings for many molecules. He used these properties, especially nuclear quadrupole coupling, to obtain information about chemical bonds. Gordy measured the nuclear moments of several isotopes, including I^{129} and I^{131} , and showed that the spin of the B^{10} nucleus is 3 rather than 1, as had previously been thought. He also demonstrated a relationship of