William Streifer

William Streifer passed away on 1 October 1990 after an extended illness. He was a pioneer in the fields of semiconductor lasers and integrated optics.

Born in 1936 in Przemysl, Poland, Streifer emigrated to the United States with his family in 1938. He attended Bronx High School of Science and received his bachelor's degree in electrical engineering from the City College of New York in 1957. After receiving a master's in electrical engineering from Columbia University in 1959, he went on to earn his PhD in electrical engineering from Brown University in 1962.

Streifer then was a faculty member in the department of electrical engineering at the University of Rochester for ten years, rising to the rank of full professor. He published groundbreaking papers on beam-wave propagation, laser resonators, propagation in gradient index materials, coherence theory, diffraction and the theory of halftone screens. In 1972 he left Rochester to become a principal scientist at the Xerox Corporation's newly formed Palo Alto Research Center.

During his 13 years with Xerox, Streifer made seminal contributions to the development of the semiconductor laser. He published papers on the theory of distributed-feedback semiconductor injection lasers, the theory of phase-locked diode laser arrays, and analyses of single-mode semiconductor lasers as well as many other semiconductor-based integrated optic devices. He also made significant contributions to the field of mathematical ecology. Toward the end of this period he participated in the formation of Spectra Diode Laboratories, a joint venture of Xerox and Spectra Physics that became a leading manufacturer of semiconductor lasers.

In early 1985 Streifer became the director of the Center for High Technology Materials and professor of electrical engineering and physics at the University of New Mexico, occupying an endowed chair. He built the center into a nationally recognized research institution. He joined Spectra Diode Laboratories in late 1986 as research manager, but continued significant individual research activities. He was an associate editor of the *Journal of the Optical Society of America* for four years, as well as editor of the *IEEE Journal of Quantum Electronics* from 1982 through 1988.

Bill Streifer will be remembered by his many friends as a man of great warmth, sense of humor and integrity. He was a humble person who accomplished much in many fields by a combination of brilliance and extraordinarily hard work. He always had time for his family and friends and participated enthusiastically in such activities as folk dancing and hiking. He inspired us all.

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Yoshio Tanaka

Yoshio Tanaka, who was a major contributor to the spectroscopy of the vacuum ultraviolet during the second half of this century, died in Santa Fe, New Mexico, on 5 July 1991.

Tanaka was born in Okayama, Japan, on 1 September 1906. He took his first degree in 1935 at the Tokyo University of Literature and Science. He then joined the Institute for Physics and Chemical Research in Tokyo to work with Toshio Takamine, a pioneer of vuv spectroscopy in Japan. By the mid-1930s a lull had commenced in world activity in optical spectroscopy in general. The small, slenderly equipped Japanese group remained among the handful of workers active in vuv work. In 1939 Takamine and Tanaka took their handmade 0.2-m vacuum spectrograph to Mount Wilson, but their effort there was curtailed by the start of World War II.

After receiving his doctor of science degree in physics from TULS in 1944, Tanaka was appointed a professor of physics there. He remained at the university until 1950, when he moved to the US as a visiting professor at the University of Chicago. In 1952 he joined the staff of the Air Force Cambridge Research Laboratories in Bedford, Massachusetts. A revival of activity in optical spectroscopy, especially in the vuv, had already begun. Tanaka was able to establish quickly a first-class laboratory and invite coworkers from abroad, especially from Japan. For well over 20 years, the laboratory flourished.

Tanaka's research focused on the electronic spectra of the simpler atmospheric molecules and the van der Waals molecules of the rare gases, and he and his colleagues achieved progressively improved spectral resolution. For example, with Kouichi Yoshino and Daryl E. Freeman he observed the absorption bands of the rare gas dimers, leading to the determination of their electronic ground states. Work at high resolution included obtaining the vuv spectra of CO and O_2 with Masaru Ogawa, of H_2 and NO with Sanzo Takezawa, and of N_2 with Yoshino. Their work on rare gas dimers later had important consequences for the development of excimer lasers, and the continuous spectra emitted by rare gas discharge that they developed as sources of vuv radiation are still in wide use.

After retiring from the Cambridge Research Labs in 1976, Tanaka continued work on rare gas spectra with William C. Walker at the University of California, Santa Barbara, for several years. He spent his last few years of a long and productive life in peace and quiet in Santa Fe with his family.

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John Dowling

John Dowling died of cancer on 14 September 1991, at the age of 53. He served The American Physical Society and the APS Forum on Physics and Society in many capacities, among them editor of *Physics and Society* for six years and chair of the forum's study group on civil defense. At the time of his death, he was a professor of physics at Mansfield State University, where he had taught since 1970. He served as department chair from 1981 to 1984.

Dowling dedicated his professional career to promoting public understanding of the impact of physics on vital social issues. An expert on the use of films in physics instruction, Dowling served as film review editor of the *Bulletin of the Atomic Scientists* (1979–84) and the *American Journal of Physics* (1976–82). He published the *War Peace Film Guide* in 1980 and coauthored with Karen Sayre the *1984 National Directory of A V Resources on Nuclear War and the Nuclear Arms Race.*

Those of us who had the privilege of working with John Dowling will miss his common sense and personal kindness as well as his seemingly unlimited supply of really terrible physics-related jokes.

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