



William M. Fairbank

of superconducting metal produces a quantized magnetic flux. It was found in addition that the flux was only half of what was predicted, indicating that electrons in a superconductor's current move in pairs and in unison. The work also demonstrated that quantum effects can take place on a broad and macroscopic scale. Earlier, Dr. Fairbank and his co-workers carried out one of the first experimental investigations of second sound in superfluid helium and established the temperature dependence of the velocity of second sound. He has also received recognition for his research on the different properties of ^3He and ^4He , especially his study of the magnetic susceptibility of ^3He and the discovery of a phase separation in solutions of ^3He and ^4He .

Dr. Fairbank was born in Minneapolis and earned his doctorate from Yale University in 1948. Before joining the Stanford faculty as professor of physics in 1959, he taught at Duke, Amherst, and the University of Washington. A fellow of American Physical Society, he received the organization's Buckley Prize in 1963.

Instrument Society award

Warren P. Mason, head of mechanics research at Bell Telephone Laboratories, has received the 1964 Arnold O. Beckman Award of the Instrument Society of America. The award, which is given annually for work on a new principle or instrument design, spe-

cifically honored Dr. Mason's development of heavily-doped silicon semiconductor strain gages.

Through his research on stress analysis, Dr. Mason was led to apply the piezoresistance effect in silicon and germanium semiconductors to strain gages. Experiments with lightly-doped semiconductors proved to be inherently nonlinear because they were temperature dependent. However, when he increased the doping levels to the range between 5×10^{18} and 10^{20} boron atoms per cm^3 , Dr. Mason found that these highly-doped samples are not only nearly temperature independent but have sensitivities two orders higher than wire strain gages. Such semiconductor gages are now widely used in the instrumentation field, for in addition to measuring very small strains, they eliminate the need for expensive amplifying equipment for moderate strains.

Born in Colorado Springs, Colorado, Dr. Mason earned his doctorate in physics at Columbia University in 1928 and has been associated with the Bell System for more than 42 years. A fellow of the American Physical Society and the Acoustical Society of America, he served as ASA president in 1955-56.

Stearie Prize

The first award of the E. W. R. Steacie Prize in the Natural Sciences has been made to Jan Van Kranendonk of the University of Toronto for his work in molecular and solid-state physics. The fund from which the award is financed was founded by friends of the late Dr. Steacie to commemorate his contributions to chemistry and his service to Canadian science as president of the National Research Council of Canada for ten years prior to his death in 1962. The Steacie Prize carries an approximate value of \$1000 and is awarded from time to time for an outstanding contribution to the natural sciences in Canada by a scientist under forty years of age.

Dr. Van Kranendonk was born in Delft, Holland and received his PhD in 1952 from the University of Amsterdam. He was made a lecturer at the

Institute-Lorentz of the University of Leiden in 1954, joined the staff of the University of Toronto in 1958, and has been serving as professor of physics at Toronto since 1960. His work in molecular physics includes the development of the theory of induced infrared absorption and the impact theory of Raman line broadening. In solid-state physics, he has contributed to the theory of nuclear spin-lattice relaxation and the statistical properties of spin systems, and has developed the theory of rotational and vibrational excitons and its application to the infrared and Raman spectra of solid hydrogen.

Chemistry awards

Robert S. Mulliken, codirector of the Laboratory of Molecular Structure and Spectra at the University of Chicago, has been named recipient of two separate awards in chemistry. The 1964 John Gamble Kirkwood Medal, honoring the late director of the Division of the Sciences at Yale, was presented to Dr. Mulliken in November by the Yale University Chemistry Department and the New Haven Section of the American Chemical Society. The 53rd Willard Gibbs Award is scheduled to be presented to him in May, during a dinner ceremony of the Chemical Society's Chicago Section. Both awards pay tribute to Dr. Mulliken's pioneering work in molecular chemistry.

A member of the University of Chicago faculty for more than thirty-five years, Dr. Mulliken is currently the Ernest De Witt Burton distinguished service professor emeritus in the Department of Physics and Chemistry, where he is also under a continuing appointment as distinguished service professor of physics and chemistry.

Dr. Mulliken is known for his studies of chemical bonding and molecular orbital theory as well as for his interpretation of molecular spectra and donor-acceptor complexes. A fellow of both the American Physical Society and the American Chemical Society, he has been honored by the latter organization on previous occasions with its Debye, Lewis, and Richards awards.