



Raymond F Boyer

RAYMOND F. BOYER

1910–1993

BY ALFRED E. BROWN

RAYMOND F. BOYER, world renowned polymer physicist, died on February 23, 1993, at the age of eighty-three.

Dr. Boyer was born on February 6, 1910, in Denver, Colorado, but was raised in Canton, Ohio. He attended Case Institute of Technology, where he received his B.S., M.S., and honorary D.Sc. degrees. Dr. Boyer joined the Dow Chemical Company in 1935, and in 1952 he became director of research in the newly formed Plastics Department. He then became assistant director of corporate research in 1969. He remained in that position until his retirement from Dow in 1975.

A pioneer in polymer physics and engineering, Dr. Boyer authored or coauthored more than 160 publications. He was also the inventor or coinventor of twenty-two U.S. patents. Particularly noteworthy were his contributions to styrene polymers and their utilization in styrene plastics. His pioneering work correlating thermal expansion and second-order transition temperature in polymers led to improved understanding of molecular motion in high polymers. He is widely known for his work in the development of stabilizers for polystyrene and the definition of mechanical properties of polymers. His work with plasticizers was instrumental in the development of Saran. His studies of solution viscosity led to better understanding of polymer interactions. He also pioneered in the light and heat stability of plastics and studies of the usefulness of plastics in

electrical applications. He also directed research groups that developed many new plastic products, including high-impact polystyrenes and Styrofoam.

Dr. Boyer participated in activities of diverse organizations, including those of the National Research Council (NRC) or the National Academy of Sciences (NAS), government agencies, professional societies, and universities. For the NRC Materials Advisory Board, he chaired the following two committees: the Panel on Polymers of the Committee on Characterization of Materials and the Ad Hoc Committee on Opportunities in the Basic Materials Industries. He also chaired the NRC Panel on Polymers, an evaluation panel for the National Bureau of Standards. He was a member of the NAS Committee on the Survey of Materials Science and Engineering and of the NRC Committee on Renewable Resources for Industrial Materials. He served the National Science Foundation (NSF) on the Advisory Panel on Funding of Polymer Science. He chaired the High Polymer Divisions of both the American Chemical Society (ACS) and the American Physical Society, and was twice chairman of the ACS Biennial Polymer Symposium. He was a member of the Macromolecular Committee of the International Union of Pure and Applied Chemistry and a member of the advisory boards of the *Journal of Applied Polymer Science*; *Journal of Macromolecular Science, Physics*; and the *Journal of Macromolecules*. In addition, Dr. Boyer was invited to lecture on polymer science and technology at many universities and conferences worldwide.

While at Dow, Dr. Boyer received the International Award—and its associated gold medal—of the Society of Plastics Engineers (1968); the ACS Award in the Chemistry of Plastics and Coatings sponsored by Borden Foundation, Inc. (1970); and the biennial Swinburne Award of the Plastics and Rubber Institute of Great Britain (1972). Also in 1972 he was named Dow Chemical's first research fellow, Dow's highest scientific honor.

In 1978 Dr. Boyer was elected to the National Academy of Engineering in recognition of his outstanding contributions to the field of high polymers and to the industrial development of plastics technology.

After retiring from Dow at age sixty-five, Dr. Boyer started a new career as an affiliate scientist at the Michigan Foundation for Advanced Research, now the Michigan Molecular Institute (MMI), of which he is a "founding father." In 1989 he was named the institute's first distinguished research fellow. Two years later he was inducted into the Plastics Hall of Fame.

In 1992 the MMI board of directors honored Dr. Boyer for his many years of interest and support in a special resolution:

[He] provided experience, insight, enthusiasm, and a rare blend of common sense and uncommon intelligence to his fellow researchers . . . as an inspired and inspiring teacher, [he] has enhanced the lives and careers of hundreds of scientists and engineers.

Dr. Boyer was loved not only for his research efforts but also for his unusual wit, humor, and compassion. I shall miss him very much as will many of his colleagues.