William J. Bailey

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1921-1989

By James Economy

Professor William. Bailey died on December 17, 1989, after collapsing at the opening reception of the 1989 International Chemical Congress of Pacific Basin Societies in Honolulu.

During his career Dr. Bailey made a number of major contributions to the field of polymer science and technology. Professor Bailey invented a new class of monomers that expand during polymerization, resulting in high-strength adhesives, strain-free composites, and strongly adhering coatings. These monomers, which are now commercially available, solve the basic problem of shrinkage during curing, a phenomenon that acts to greatly weaken the bond at the interface. He discovered and developed new methodologies for preparing completely biodegradable polyethylene, polystyrene, and polyamides. These processes are now actively being evaluated in many industrial laboratories. He developed a general procedure for free radical-ring opening polymerization that uniquely incorporates hydrophilic units in the backbone, thus providing a general route to preparation of biocompatible addition polymers. He carried out pioneering studies on the pyrolysis of organic and polymeric materials leading to (1) a general preparative route for sensitive olefins by rapid heating of esters and (2) the first interpretation of thermal degradation of vinyl polymers via

a unique cyclic mechanism. He also prepared and characterized the first complete ladder polymer and thus laid the groundwork for the massive effort that followed on the development of thermally stable, ladder polymers.

Professor Bailey was very active in the American Chemical Society (ACS) and was a member of the ACS board from 1973 to 1982. He was chairman of the board in 1979 and 1981 and president of ACS in 1975. He was an ACS member since 1945, chairman of the ACS Washington, D.C. Section in 1961, and a councilor for that section for many years. He was active in the ACS Division of Polymer Chemistry, which he chaired in 1968, and served as a member of the ACS Division of Professional Relations.

His contributions were recognized by a number of major awards from the American Chemical Society including the ACS Award in Polymer Chemistry in 1977, the ACS Award in Applied Polymer Science in 1986, and the Henry Hill Award of the ACS Division of Professional Relations in 1988. He was also the recipient of the Fatty Acid Producers Award in 1955, an Outstanding Achievement Award from the University of Minnesota in 1976, the Hillebrand Prize from Washington's Chemical Society in 1984, and a Distinguished Polymer Scientist Award from the ACS Polymer Division in 1985. He was invited to present honorary lectures at a number of universities and organizations.

Dr. Bailey was a native of East Grand Forks, Minnesota. He earned a B.S. in chemistry at the University of Minnesota in 1943 and a Ph.D. in organic chemistry at University of Illinois in 1946 with Professor C. S. Marvel. After a year as a post-doctoral fellow at Massachusetts Institute of Technology with Professor Cope, he joined the faculty of Wayne State University in Detroit. He was an associate professor of organic chemistry there when he left in 1951 to join the Maryland faculty.

He is survived by his wife, the former Mary Caroline Worsham, a son, two daughters, and a brother. Former students of Bailey planned a symposium in his memory at

the ACS national meeting August 1990 in Washington, D.C., to be followed by a reception for colleagues and friends. A scholarship fund has been established in his name at the University of Maryland.

On a more personal note Professor Bailey was considered one of the two or three dominant figures in the field of polymer synthesis during the past forty years. He was an outstanding human being, open and friendly, willing to take time with anyone who wished to chat and especially to provide help, advice, and encouragement. There is little question that he will be missed by his former students and associates not only as a colleague and mentor but above all as a dear and close friend.