

Personalia



Joseph L. McCarthy
* October 19th, 1913.
† May 5th, 2000.

Joseph L. McCarthy In Memoriam

After a brief illness, Professor Joseph L. McCarthy has passed away at age 86 in Seattle, Washington. He belonged to a group of privileged few who have remained active, not only in science but also in civic causes, well beyond his official retirement. His achievements have been recognized repeatedly, in *Holzforschung* and elsewhere¹⁾.

It was only four years ago that McCarthy won the prestigious Anselme Payen Award of the Cellulose, Paper and Textile Division of the American Chemical Society (see *Holzforschung* 51, 584 [1997]). At the Award's Symposium held in Dallas, Texas, in April 1997, he impressed the audience with his eloquence of speech, his outstanding presence of mind, and, despite being confined to a wheelchair, his tireless attendance of all symposium sessions. In the resulting monograph entitled "Lignin: Historical, Biological, and Materials Perspectives" (ACS Symposium Series # 742, 2000) he (with the assistance of his associate A. Islam) composed a unique historical perspective of the lignin field with nearly 700 references. In the matter true to his nature, McCarthy delineated the progression of the science of lignin chemistry as an activity in sync with the development of delignification (pulp) technology. This is reflective of an intelligent equally astute in scientific and engineering matters. The ability to find practical (engineering) applications to scientific advances has been one of the trademarks of J. L. McCarthy throughout his career.

Born in Spokane, Washington, Joe McCarthy was educated at the University of Washington, the University of Idaho, and McGill University. He received a bachelor's degree in Chemical Engineering from Washington before earning research degrees in Chemistry from Idaho (M.S.) and Montreal (Ph.D.). Joe owed his induction into the cellulose field to his graduate advisors, Ed Jahn (Idaho) and Harold Hibbert (McGill). Although Joe got his start as academic lecturer at McGill, he soon switched into the corporate world by becoming research director of Fraser Company, Ltd. At Fraser, he worked on converting dissolving pulp production into the manufacture of pulp for guncotton as part of Canada's war time effort.

In 1941, Joseph McCarthy accepted a position in the Department of Chemistry and Chemical Engineering of the University of Washington. He advanced in rapid succession from Research Associate to Instructor to Assistant, Associate and Full Professor (1952) before spending a sabbatical term at the University of Cambridge (U.K.) and taking the reins in 1959 of the University of Washington's Graduate School of the University. Without ever relinquishing his research program in Chemical Engineering, Joe served the University of Washington as Graduate Dean for 16 years, providing leadership during a turbulent period wherein the number of advanced degree programs nearly doubled. After returning to Chemical Engineering full-time in 1975, Joe continued to teach and research before accepting emeritus status in 1983. This has not, however, kept Joe away from the laboratory. Joe continued to work with graduate students; he published prolifically and continued to attend most meetings of the American Chemical Society (ACS). When the University of Washington lost its long-time instructor of polymer chemistry, Joe graciously accepted the challenge of teaching a course which he had founded long ago – now (he reported) he had to study at least as hard as his students.

Joe has made significant contributions on a wide range of topics dealing with the chemistry and chemical process technologies of wood. Ever since transferring the results of his dissertation on "The Mechanism of Chlorination of Lignin" to a new kraft pulp bleaching process that was patented and put into full-scale practice immediately (at a Howard Smith Papermill near Montreal), Joe's research contributions have met the requirement of being of practical relevance while providing excellence in graduate education. During World War II, Joe's research on ethanol production from spent liquor, and his later work with lignin sulfonates, quickly became the basis for the Bellingham (in Washington) plant's commercial leadership in both the ethanol and (lignin sulfonate-based) drilling mud markets. A "Pulp Mills Research" (PMR) program was started at the University of Washington with support from industry in response to the objectivity by fishermen and oyster growers in the Puget Sound area against the discharge of spent sulfite liquor from pulp mills. Over a period of 13 years (1944–1957) the PMR program became the cornerstone of funding for Joe's initial contribution to the science and engineering of chemical wood processes by focusing on kraft mill odor reduction and spent sulfite liquor minimization. Today, no sulfite mill in the Pacific Northwest discharges spent sulfite liquor into the Puget Sound.

Other research elements leading to substantial changes in the industrial practice of pulp and paper making dealt with (a) the thermodynamics and the recovery of heat and chemicals from combustion of spent sulfite liquors with various bases; (b) the purification of kraft mill effluents by steam stripping; and (c) the recovery of heat and by-products from spent kraft (black) liquors by ultrafiltration.

¹⁾ Dedication of a special issue of the Journal of Wood Chemistry and Technology, 4,(3), 1984; *Holzforschung* 47, 534 (1993), *Holzforschung* 51, 584, (1997).

Contributions to the knowledge of the structure and reactions of lignins and lignin sulfonates (LS) included the purification of LS by dialysis and ultrafiltration; the characterization of LS by molecular weight and NMR; the recognition of lignin as a "gel" with low frequency cross-linking; and the realization that pulping is depolymerization by cleavage of α and/or β -O-4 ethers.

McCarthy has participated actively in the affairs of the Cellulose, Paper and Textile Division of ACS where he held several offices, including chair (1952). He organized a major symposium in New York in 1957 on "The Lignin Problem." Joe was honored by the American Institute of Chemical Engineers (AIChE), Tappi, The American Association for the Advancement of Science (AAAS), the International Academy of Wood Science, and the University of Washington with numerous awards and recognitions. In addition to his scientific and engineering achievements, Joe has served as President (1966) of the Association of American Graduate Schools. His committee developed policy

statements on graduate degree programs which remain in effect today at more than 350 graduate schools nationwide. In addition, Joe has served the Seattle community as President and Board Chair of the Pacific Science Center Foundation; as board member of the Seattle Opera Association; as board member and President of the Seattle Public Library Foundation; and of many other civic organizations. Through these activities, Joe has served as a valuable role-model and personal mentor for students and junior colleagues over more than five decades. Nearly 50 M.S. and Ph.D. students have graduated from his laboratory and more than 25 post-doctoral research associates have been guided by Joe into fruitful careers.

The many friends and colleagues of Joseph L. McCarthy will remember him as an example of the pleasures of excelling at one's actions. His motto "don't do it unless it's fun" will continue to inspire generations of wood chemists whose lives he touched, directly or indirectly.

W. Glasser, U.S.A.