

**MEMORIAL RESOLUTION OF THE FACULTY OF THE
UNIVERSITY OF WISCONSIN-MADISON**

ON THE DEATH OF PROFESSOR EMERITUS HUGH N. POWELL

Hugh Nicholson Powell, emeritus professor of mechanical engineering, was born in Birmingham, Alabama, on June 16, 1922. He was the only child of Nina Nicholson and Hugh Audrey Powell, also an engineer. He received his undergraduate degree in chemical engineering from the Georgia Institute of Technology in 1943. Upon graduation he volunteered for naval duty, serving in the Pacific Theater as a lieutenant (jg) and chief engineer of the USS LST 856.

Upon returning from the war, he attended the University of Delaware where he received his PhD in Chemical Engineering in 1951. His doctoral thesis, dealing with flame temperature measurement, led to a lifelong interest in optical instrumentation and to his joining the Aircraft Gas Turbine Division of General Electric where he served as a research engineer for six years.

While at G.E. he published a number of papers on inhomogeneous combustion and a classic paper on first law analysis of combustion. He also coauthored a much used computer program for analysis of combustion products, published as the 1958 book, *Properties of Combustion Gases: System C_nH_{2n} -air*.

Powell left G.E. in 1958 to join Cornell University as an associate professor in the Sibley School of Mechanical Engineering. In 1961 he moved to Madison to take the position of full professor in the Mechanical Engineering Department. While at Cornell he had developed and published an analysis for maximization of inhomogeneous combustion heat release and a new design for a shock tube. At Madison he used these concepts to design and build a unique large-flow-cross-section shock tube of world-class quality. Powell then invented two entirely new methods of measuring thermal conductivity of high temperature gases using a shock perturbation method and applied them using his shock tube. An additional interest in magneto-gas-dynamics led to research on electric-arc-produced plasmas.

In his later years, including his years after retirement in 1989, he worked on a unique method of electric power production, which he called "the energy still." Sadly, ill health prevented a positive conclusion to this promising concept.

Powell taught undergraduate courses in thermodynamics and fluid mechanics and graduate courses in compressible flow. In 1970 he was called upon to take over the supervision of a required undergraduate instrumentation laboratory. Over the following years he made many innovative contributions to the lab syllabus, always insisting that the students have the opportunity to work with state-of-the-art equipment. This laboratory continues to be an important required course in the M.E. curriculum.

Hugh Powell was a man of many interests. When he said, "not to change the subject but . . .," one never knew what was coming, but it was certain to be interesting, with topics ranging from world politics and cultures, to literature, to obscure places he had visited, to basic science. His mineral collection served as a motivation for travel to remote locations; each rock had a story connected to its acquisition. An active Rotarian and scholar, he was a man for all seasons and a friend to treasure.

While in graduate school Hugh married Margaret Humphreys; they had sons Hugh, Maury, and Jonathan. Six years after his divorce in 1967, he married Julianne Bowman, acquiring step-children Mary-Ellen and John.

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Hugh passed away on June 27, 2000. He is remembered by his many friends, colleagues and students as an intellectual man of easy human and true southern charm, who showed great courage in fighting off numerous bouts with cancer, never becoming discouraged.

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