

Obituary

Helmut Knapp (1923 to 2009)

Helmut died peacefully on January 13, 2009 at home surrounded by his devoted family following two years of declining physical and mental health. A brief celebration of his life followed his funeral in Berlin on February 6.

In addition to his splendid reputation as a major contributor to the experimental database for fluid phase equilibria, Helmut's charm, generous hospitality, and delicious sense of humor made him a much-loved member of the international community of chemical engineering thermodynamicists.

Helmut was born in Heilbronn (Southern Germany) on April 26, 1923. His father died early. Although the family lived in limited financial circumstances, Helmut received a very good primary and secondary education. Following graduation from a Gymnasium, Helmut joined the German Air Force where he served in reconnaissance in the Mediterranean area. In 1944, his plane was shot down. Fortunately not injured, Helmut was taken prisoner and remained in a British prisoner-of-war camp in North Africa for 4 years.

After his return to Germany, Helmut started study at the University of Stuttgart. He received a Doctor's degree (physics) from that University in 1954 with a thesis on metallic solutions. He then accepted a position with Messer-Griesheim (Frankfurt) where he worked on design and construction of natural-gas plants. It was this work that stimulated Helmut's interest in the thermodynamic properties of nonelectrolyte fluid mixtures.

In 1956, Helmut married Dorothee Liebendörfer, the niece of his doctoral thesis supervisor. Shortly thereafter, he and Dorothee came to New York where Messer-Griesheim had formed a subsidiary, American Messer. Helmut remained in America for 11 years, designing and constructing natural-gas plants all over the U.S. It was during this time that four children were born: Ulrike, Christiane, Carola, and Helmut Jr.

Helmut and Dorothee loved living in the U.S. where they made many friends. As later in Berlin, their home near New York City was a center of hospitality. Because American Messer built chemical process plants throughout the U.S., Helmut became acquainted with many parts of the country. Later, on the wall of his Berlin office, Helmut had a large map of the U.S. with red pins showing the locations of plants that he had designed. He was a specialist in gas absorption; I recall that his face always lit up when someone mentioned *Gaswäsche* (gas washing).

In the late 1950s, Helmut spent several months in Oakland, a few miles from my office in Berkeley. But we did not meet until Susie and I briefly visited Berlin in 1973. Immediately we formed a fond friendship with Helmut and Dorothee that deepened in 1976 during my first of several visiting professorships in Berlin.

Shortly after his return to Frankfurt, Helmut accepted a position as professor and director at the Institute for Thermodynamics in the faculty for Verfahrenstechnik (literally, Process Technology, in effect, Chemical Engineering) at the Technical University of Berlin, a position he held from 1969 until his retirement in 1992. During this period, he supervised several dozen Dipl. Ing. and doctoral theses and published numerous articles reporting high-quality thermodynamic data for fluid mixtures of interest in the chemical and related industries. He also published studies on mass transfer in a high-pressure absorption column and a compendium of high-pressure vapor–liquid equilibria data, primarily at low temperatures. About 15 of Helmut's Dr.-Ing. alumni are now leading executives in the German chemical industry.

Helmut was an enthusiastic traveler. Often accompanied by Dorothee, he attended conferences all over the world. He served as visiting professor at the University of California, Berkeley, and at the University of Canterbury in Christchurch, New Zealand.

Many years ago, John Rowlinson pointed out the strong correlation between thermodynamicists and mountaineering; he and Joel Hildebrand are good examples. Helmut was an enthusiastic hiker in the Alps, the Rockies, the Black Forest, and the Sierra. I was fortunate to hike with him in the North-Italian Dolomiti Mountains where he climbed with the ease of a mountain goat.

In recognition of his professional achievements, Helmut received the Emil Kirschbaum Medal and the Ehrenpalette (Certificate of Honor) from IChE, the international organization of applied chemistry. To stimulate communication among European chemical engineers concerned

with chemical thermodynamics, Helmut founded ESAT, the European Society of Applied Thermodynamics. Every year, ESAT meets in a different European country. The first meeting was held in Berlin in 1974. The program of the 2009 meeting in Santiago de Compostela includes a special symposium in his memory.

At the Technical University of Berlin, Helmut's research interests centered on experimental studies of equilibrium properties (especially phase equilibria) of fluid mixtures. His publications have contributed strongly to the database for design of separation operations.

Helmut will be fondly remembered by his former co-workers and by his large circle of admiring colleagues and friends. His criticism or advice, always with a smile, was consistently helpful, never destructive. His generosity, hospitality, and charm made him a beloved companion at technical meetings as well as at parties and public events. He enjoyed telling stories and talking humorously about politics and the latest social fads. His letters and notes were often accompanied by clever illustrations with stick figures.

Helmut was warmly devoted to his adoring wife and children. In short, Helmut was a delightful companion who added zest and *Gemütlichkeit* to any group or to any conversation. Greatly respected as an engineer, mentor, and researcher, his universal popularity was a direct reflection of his benevolent character and his congenial personality.

The guild of chemical engineering thermodynamicists has lost a beloved colleague with an unusual gift for convivial friendship. Our heartfelt sympathy goes to his family.

John Prausnitz
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