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Liquid Crystals

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Obituary

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OBITUARY

Alfred Saupe

Alfred Saupe, a key theorist and experimentalist in the field of liquid crystals, died on 3 August 2008.



Saupe was born on 25 February 1925 in Badenweiler, Germany. World War II interrupted his early interests in mathematics and the physical sciences. In 1955, he obtained his Diploma in Physics from the Albert-Ludwigs University in Freiburg for his work on UV spectroscopy of para-azoxyanisole. His advisor was Wilhelm Maier. Saupe became interested in theory, and developed the mean field theory of nematic liquid crystals, a singular achievement. Even today, nobody has done it better.

Saupe also worked on methods of determining the orientational order parameter for liquid crystals, measured their absorption of ultrasound, density changes as a function of temperature, and specific heats at phase transitions. In 1958 he received his Doctor of Science degree *cum laude*. After the death of Maier, Saupe worked with H. Cantow at the Institute of Macromolecular Chemistry on PMR spectra of polymers, and obtained his Habilitation in Chemical Physics in 1967. In 1968, he joined Kent State University's Liquid Crystal Institute and Department of Physics.

In addition to the Maier–Saupe theory, Al Saupe laid the groundwork for most liquid crystal research in elastic theories, defects and blue phases. Highlights of his many scientific contributions include the determination of the temperature dependence of the Frank elastic constants, the development of the theory of NMR in the nematic state and the discovery of biaxial nematic phases in lyotropic liquid crystals. A hallmark of his work is the combination of experiment and theory; his theoretical predictions were always followed by definitive experiments, while observations of new phenomena were theoretically modelled.

As noted by Pierre Gilles de Gennes, Saupe was generous in sharing his time, insights and humour with colleagues, and delighted in solving outstanding fundamental problems. His quiet but incisive questions at conferences formed the basis of much subsequent research. He was an inspiring teacher both in the classroom and in the laboratory. During his tenure at Kent State, he advised 21 graduate students. Al Saupe enjoyed scientific discussions a great deal, often more than writing papers.

In 1974 Saupe was awarded the Nernst Prize, and received the Humboldt Prize in 1987. He was awarded the Kent State President's Medal in 1992 and the Fredericksz Medal in 1999. In 1998, he was recognised as one of the first Honoured Members of the International Liquid Crystal Society.

In the fall of 1992, Saupe retired from Kent State University, and became director of the Max Planck Research Group on Liquid Crystalline Systems at Martin Luther University in Halle. After moving back to Badenweiler in 1996, he continued his scientific collaborations, and held emeritus and honorary professorships at Kent State and Martin Luther Universities.

Although his research was driven by curiosity and the pleasure of solving scientific riddles, his discoveries made possible the liquid crystal display technology that has changed our world.

Our hearts go out to his wife Brigitte and his loving family. We shall miss him very much.

Patricia E. Cladis and Peter Palffy-Muhoray