



IN MEMORIAM: Siegfried Bauer (1961–2018)

Siegfried Bauer, an internationally renowned applied physicist, who was also a prolific materials scientist and engineer, died on December 30, 2018, in Linz, Austria, after a one-year battle with cancer. He was professor of soft matter physics at Johannes Kepler Universität (JKU) Linz, Austria. He was a well-known scientific leader and innovator across many fields, but mainly in the areas of electroactive materials (including electrets) and stretchable and imperceptible electronics.

Siegfried was born on May 15, 1961, in the village of Berghausen (Pfinztal) near Karlsruhe, Germany. He was the youngest son of a locksmith and a seamstress. His parents were also part-time farmers who owned a small plot of land, including a vineyard. In the rural environment of his home village, he quickly developed a curiosity about almost everything around him and a deep love of nature.

During a long illness in his youth, where he was bedridden for months, he studied mathematics and physics intensely and subsequently became an excellent student. He was fortunate to find deep inspiration and support from his physics teacher, who further motivated him to study physics at the University of Karlsruhe (now Karlsruhe Institute of Technology). Wolfgang Ruppel, professor of applied physics, accepted Siegfried as a PhD student and encouraged him to pursue his own research direction and to start working on ferroelectric polymers. This area at that time was seen as an oddity and even considered “dirty physics” by the solid-state physics community.

In 1990, Siegfried successfully defended his PhD thesis on ferroelectric polymers and continued work as a post-doctoral scientist. He also started to teach at the Fachhochschule Karlsruhe and began research projects at the universities of Karlsruhe, Marburg, and Stuttgart in southern Germany. At this time, he also met his wife, Simona Gogonea, and they became close companions in life and science.

In 1992, he joined the Heinrich Hertz Institute for Telecommunications in Berlin-Charlottenburg as a scientist and project manager. Within his team, he initiated and developed several new experimental techniques and achieved a wide range of remarkable results that yielded seminal publications in nonlinear optics and photonics with electro-optical polymers. Siegfried’s productive and successful years in Berlin and Potsdam culminated in his habilitation on “Poled Polymers for Applications in Sensorics and Photonics,” which he defended in 1996 at the Universität Potsdam. In 1997, he received the Karl Scheel Award of the Physikalische Gesellschaft zu Berlin (PGzB) within the German Physical Society.

After his appointment as lecturer (Privat-Dozent) at the Universität Potsdam, he received offers from a number of universities and accepted a position as associate professor at JKU Linz in October 1997. In 2002, Siegfried was appointed full professor of experimental physics and established the Department of Soft Matter Physics at his university. He soon became one of the most successful, influential, and recognized scientific researchers and academic teachers at JKU Linz.

Siegfried’s approach overcame boundaries among disciplines: theory and application, different cultures and countries, arts and sciences, philosophy and engineering, and seriousness and playfulness. Because of his unconventional approach, Siegfried sometimes caused anger and resistance among his scientific peers, since he questioned beloved certainties and authoritative conventions in a playful manner and often used Socratic probing in his thinking and teaching. When he felt that creative, well-founded new approaches were ruled “nonsense,” he stepped in and defended the right to think differently and to err, as there is no absolute truth. This unusual approach and deep insights yielded many highly cited and internationally recognized publications, as well as several awards and honors, such as the Advanced Investigator Grant by the European Research Council in 2011, and appointments as Fellow by the Institute of Electrical and Electronics Engineers (IEEE) and SPIE, the International Society for Optics and Photonics in late 2015 and late 2018, respectively.

Siegfried was active within the Materials Research Society (MRS). He served as a guest editor in March 2012 for *MRS Bulletin*, was a MRS symposium organizer (2008–2009), served on the Symposium Committee (2011–2012), and participated in the 2017 MRS/Kavli Workshop on stretchable biomaterials. He was an active contributor to several learned societies, international conferences, and to leading scientific and technical journals (*Applied Physics A*, *Applied Physics Reviews*, *Extreme Mechanics Letters*, *IEEE Transactions on Dielectrics and Electrical Insulation*, and *Proceedings of the Royal Society A*).

Siegfried is survived by his wife, his daughter Lara, his son Lukas, his mother, and two brothers. He will be remembered as a special person full of humor and empathy and as an inspiring and supporting companion and guide. His memory, his philosophy, and his work will remain alive in and through all who met him.