

Anton Peterlin FREE

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Germany. He was also a visiting professor (1992–93) at the National Institute of Nuclear Physics in Catania, Italy.

Although physics was Strutinsky's first love, he was in fact a person of much broader interests. He had a vast knowledge of history, literature and the arts. He liked to take macro-photos, in particular of various small insects.

Strutinsky was an outstanding and influential figure in nuclear physics. His love of physics and of the teaching of physics was an inspiration to all those whose lives he touched. His disciples, colleagues and friends will long remember this extraordinary man.

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Anton Peterlin

Anton Peterlin died on 24 March 1993 in Ljubljana, Slovenia, where he had been born on 25 September 1908. Peterlin became interested in applying his mathematical skills to theoretical physics after receiving his MS in mathematics at the University of Ljubljana in 1930. For his work on streaming birefringence in dilute solutions of colloids and polymer molecules—developed in just one year with Hermann A. Stuart—Peterlin was awarded the DSc degree (1938) in physics from the Humboldt University in Berlin.

Peterlin's enchantment with polymer solutions would remain throughout his career, with his contributions on the subject appearing from 1938 through 1986. He was an inventive theorist interested in how one could combine results from experiments that involved birefringence, viscosity, sedimentation rate, light and x-ray scattering to form a consistent picture of polymer molecules in solution. Peterlin's major contributions in this area are based on molecular theories that couple chain orientation and flow.

After getting his doctorate, Peterlin returned to the University of Ljubljana, where he founded the physics department and served as both professor and chairman from 1939 through 1960. Amid the rubble of World War II, he was asked to establish an institute for physics research to complement the university's fledgling physics department. The Josef Stefan Institute was built in 1949 and directed by Peterlin until 1959.

In 1957 polymer physics received new direction from the discovery that

flexible macromolecules crystallized with abundant folding, made independently by Andrew Keller at the University of Bristol in England and Erhardt W. Fischer at the University of Mainz in Germany. In 1960 Peterlin and Fischer proposed a thermodynamic model to account for this folded-chain morphology; Anton Peterlin had now embarked on the second theme of his research career.

Peterlin moved briefly (1960–61) to the Technical University in Munich, Germany, and then went to the US as director of the Camille Dreyfus Laboratory at the Research Triangle Institute in North Carolina. There he recruited an international team of scientists, with whom he worked on solutions and semicrystalline polymers over a period of 12 years. He and his colleagues developed the "Peterlin model" for plastic deformation of partially crystalline polymers such as polyethylene and nylon.

On retiring from that laboratory in 1973, Peterlin joined the National Bureau of Standards (now the National Institute of Science and Technology), where he continued his research activities. He retired from NIST in 1990 and returned to his native city of Ljubljana in May 1992.

I first met Anton Peterlin when he presented a course at Duke University in 1964. His enthusiasm for polymer science lastingly infected me, and he similarly influenced many of the students and colleagues with whom he worked over the 50-plus years of his career. Peterlin was an imposing figure, both physically and intellectually, who blended his theoretical interests with those of experimentalists to advance greatly the field of high-polymer physics.

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Hannes Risken

Hannes Risken, professor of theoretical physics at the University of Ulm, Germany, died on 4 March 1994, at the age of 59. He was a leading scientist in the fields of laser theory, quantum optics and the Fokker-Planck equation.

Risken obtained his PhD in 1962 under the guidance of Helmut Gottlieb Reik at the University of Aachen, for work on the theory of hot electrons in many-valley semiconductors. His thesis was sought by many experts in this field. In 1962 he joined the group of Hermann Haken at the University of Stuttgart, where he began his seminal work on the statistical properties

of laser light. He was the first to predict the change in the photon statistics of the laser at and close to threshold. Subsequently he studied the time dependence of these statistical properties. This theory, published in two papers, laid the foundation for numerous experimental studies and verifications all over the world.

From 1967 to 1968 Risken was an associate professor at the University of Minnesota. While there he developed the theory of self-pulsing in lasers with his PhD student Kjell Nummedal. The resulting three papers have become classics. In 1972 Risken was offered two chair professorships and accepted the one at the University of Ulm, where his main field of research became the Fokker-Planck equation. He developed, with Hans Dieter Vollmer, the matrix continued-fraction method, which allowed a breakthrough in the solution of two-dimensional nonlinear diffusion problems.

Risken had the special ability to grasp the essentials of complicated systems by studying simple models. In recent years he turned to quantum optics, where he chose to focus on the Jaynes-Cummings model of the interaction between matter and light. He succeeded in finding an analytical solution to this model including damping, which had been considered impossible until then. At this point, his productive flow of contributions to science was brought to a halt by his untimely death. Risken will be forever associated with the theory of the Fokker-Planck equation. His results are summarized and his way of presenting physics is exemplified in his book *The Fokker-Planck Equation: Methods of Solution and Applications* (Springer 1984, 1988), still a standard text in this field.

Hannes was considered by his colleagues to be extremely friendly, kind, honest and cooperative. His death is a great loss to science, but he continues to live through his outstanding contributions.

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Richard H. Capps

Richard Huntley Capps died suddenly at his home in West Lafayette, Indiana, on the morning of 26 February 1994. He had served Purdue University for 27 years as a professor of physics, from 1967 to 1994.