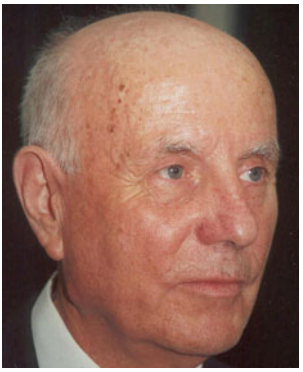
Hyperfine Interact (2013) 220:5–6
DOI 10.1007/s10751-012-0726-0

OBITUARY

In memoriam Robert Blinc (1933–2011)

Published online: 22 January 2013



Robert Blinc, professor of physics at the University of Ljubljana and scientific counselor at the "Jozef Stefan" Institute, Ljubljana, Slovenia, passed away on September 26, 2011.

He was born in Ljubljana, Slovenia, on October 31, 1933. After obtaining his PhD at the University of Ljubljana in 1959 he spent a postdoctoral year with Professor John Waugh at the Massachusetts Institute of Technology, Cambridge, MA, U. S. A. Back in Ljubljana he established a new NMR laboratory at the "Jozef Stefan" Institute, and developed it into one of Europe's leading NMR laboratories. Professor Robert Blinc was one of the founders of uses of nuclear magnetic resonance for investigations of phase transitions and liquid crystals. He established NMR, EPR and NQR spectroscopy in Slovenia.

The main scientific interest of Prof. Robert Blinc was ferroelectrics. He started with hydrogen bonded ferroelectrics and continued with incommensurate solids, ferroelectric liquid crystals, proton glasses, relaxor ferroelectrics and multiferroics. One of his great achievements is the tunneling model of the hydrogen bonded ferroelectrics, known also as the Blinc-de Gennes pseudospin model. He proposed and directed experiments that provided the first detection of phasons and amplitudons,

the excitations of the incommensurate modulation, by quadrupole perturbed NMR. Robert Blinc and coworkers made remarkable achievements in the study of liquid crystals. They predicted the phason Goldstone mode in helicoidal ferroelectric liquid crystals, and discovered a relaxation mechanism via nematic order fluctuation in liquid crystals—known as the Pincus-Blinc model. He and coworkers determined the Edwards-Anderson order parameter in proton and deuteron glasses and developed the spherical random bond-random field model of relaxor ferroelectrics. Prof. Robert Blinc discovered the origin of giant electromechanical effect in PMN-PZT relaxors via the existence of critical end point. He felt the power of nuclear quadrupole interactions in studying properties of solid materials. He established the double resonance laboratory and succeeded in obtaining the first nitrogen NQR spectra in nucleic acids and peptides.

The research of Prof. Robert Blinc was not only devoted to "pure science", but he also investigated the possibility of practical applications of NMR and NQR. This resulted in the application of NMR in plant breeding and cement research. He also applied NQR in the study and identification of the pharmaceutical substances and in the detection of explosives and illicit substances.

The scientific work of Prof. Robert Blinc is published in a large number of highly cited papers. In addition he published a synthesis of his research in several books. The book Soft Modes in Ferroelectrics and Antiferroelectrics, North-Holland, Amsterdam (1974), written together with Prof. Boštjan Žekš, was later transtated to Russian and Chinese language. In autumn 2011, just few months before his death, he published his last book entitled Advanced Ferroelectricity, Oxford Univerity Press (2011), covering the development of the ferroelectric materials in the last twenty years.

Robert Blinc became a professor of physics at the University of Ljubljana in 1970. He was the teacher of numerous generations of students and the supervisor of 67 diploma and 35 PhD students. Many of his students have made important contributions to solid state physics and are well-established professors of physics.

Prof. Robert Blinc collaborated with many scientists and was a visiting professor at the University of Washington in Seattle, the ETH in Zurich, the Federal University of Minas Gerais, Belo Horizonte, Brazil; the University of Vienna, the University of Utah (where he became an adjunct professor), Kent State University in Ohio, Argonne National Laboratory in Illinois, and others. He also made significant contributions to many scientific organizations. In 1990–96 he was President of the Groupement AMPERE, and in 1986–1999 he was President of the European Steering Committee on Ferroelectricity. He was a member of the Slovenian Academy of Sciences and Arts and served as its vice president from 1980 to 1999. He was a member of the European Academy of Sciences and Arts and several other academies of sciences.

The scientific work of Prof. Robert Blinc was highly respected and he received several Slovene and international prizes. He was a Fellow of ISMAR, the International Society of Magnetic Resonance, and received in 1977, along with Zavoiski, their prize. In 2004 at the joint 13th International Conference on Hyperfine interactions and 17th International Symposium on Nuclear Quadrupole Interactions, HFI/NQI 2004, in Bonn, Germany, Prof. Robert Blinc received the NQI award.

Professor Robert Blinc was a prominent scientist and he left a large impact on the NMR and NQR community. He remains an unforgettable personality.