# ENSA

The European Neutron Scattering Association

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# 2009 Walter Hälg Prize of the European Neutron Scattering Association (ENSA)

Every two years the European Neutron Scattering Association, ENSA, awards the prestigious Walter Hälg Prize to a European scientist for an outstanding programme of research in neutron scattering with a long term impact on scientific and/or technical neutron scattering applications. The Prize of 10'000 Swiss Francs is donated by Professor Walter Hälg, the founder of neutron scattering science in Switzerland. In 2009 the Walter Hälg Prize is to be presented at a special session of the International Conference on Neutron Scattering, to be held in Knoxville, USA, between 3-7 May.

The nominations received for the 2009 Walter Hälg Prize were examined by an international selection committee consisting of authorities representing the major scientific disciplines, both within and beyond the field of neutron scattering. After considerable deliberations the selection committee is now delighted to announce that the recipient of the 2009 Walter Hälg Prize will be

## Professor Dieter Richter

of the Research Center Jülich, Germany, in recognition of his coherent work towards understanding the dynamics of polymers and biological macromolecules using high-resolution neutron scattering techniques.

Dieter Richter's work is best known for his seminal contributions to the understanding of the dynamics of polymers on various length and time scales. In his early work the scaling predictions of the Zimm model were verified unambiguously, and relevant deviations from the Rouse model were found indicating the importance of topological constraints (Walter Schottky Award 1987). Later he succeeded to prove the molecular existence of reptation of polymer chains, which was predicted theoretically by the Nobel laureate de Gennes. Further work dealt with the understanding of the glass transition by identifying the relevant dynamic processes such as local motions, vibrations, and relaxation effects. Conveying his polymer dynamics approach to proteins, recently he successfully observed functionally important collective protein motions in space and time. His work also had an impact on industrial applications; in particular, the study of polymer aggregates with crystalline cores has lead to the development and microscopic explanation of the function of new diesel additives, which prevent the formation of large wax crystals in diesel vehicles in winter. Another important exploit was the discovery and molecular understanding of the efficiency boosting effect of amphiphilic polymers in microemulsions, which led to environmentally friendly industrial cleaners (Schrödinger Award 2002). In the course of his scientific work he continuously pushed high-resolution neutron spectroscopy to its limits, culminating in a spin-echo spectrometer reaching the micro-second time scale, which will open new horizons in the study of large macromolecules relevant for biology.

Dieter Richter graduated from the Technical University of Aachen, Germany, in 1977. Afterwards he spent one year as postdoctoral scientist in the group of Gen Shirane at the Brookhaven National Laboratory (USA). From 1979-1984 he held a scientist position at the Research Center Jülich, and from 1985-1989 he was senior scientist at the Institute Laue-Langevin Grenoble where he developed high-resolution neutron spectroscopic techniques. In 1989 he was appointed as a director at the Institute for Solid State Research of the Research Center Jülich, combined with a chair in physical chemistry at the University of Münster. He was one of the founders of the European Neutron Scattering Association and its first chairman from 1994-1997.