



JOHANNES KEPLER
UNIVERSITÄT LINZ | JKU

Institut für Anorganische Chemie



Univ.-Prof. Dr. G. Knör
Tel. +43-732-2468-8801
Fax +43-732-2468-9681
anorganik@jku.at
www.anorganik.jku.at

GÖCH-OBERÖSTERREICH PROGRAMMVORSCHAU

01.12.2015

Prof. Miloslav Pekar

Brno University of Technology
Institute of Physical and Applied Chemistry
and Materials Research Centre

**“Colloids Systems in Biological
Applications”**

Johannes Kepler Universität Linz
17.15 Uhr, Hörsaal 12 (TNF-Turm)



Univ.-Prof.Dr. Günther Knör
Leiter GÖCH – Oberösterreich

Miloslav Pekař received his MSc. and PhD in organic technology from Prague Institute of Chemical Technology. After spending some years in academia, regional analytical chemistry laboratory, and industrial research he joined Brno University of Technology in 1992. Currently, he is head of Institute of Physical and Applied Chemistry and Materials Research Centre. He teaches physical and applied colloid chemistry. His scientific activities are focused on applied physical chemistry, particularly thermodynamics, kinetics, and rheology; nonenergetical applications of lignite, humic substances; physical chemistry of polysaccharides, particularly hyaluronan, and their applications; relationships between chemical kinetics and non-equilibrium thermodynamics.

Colloids Systems in Biological Applications

First, a basic overview of two important biocolloids of completely different origin and structure will be given – hyaluronan and humic acids. Despite their difference, both play a significant role in “movement”, transport properties in environments of their natural occurrence. This role is one of foundation stones of their practical application. The lecture will present two aspects of their transport involvement – passive, as a transporting or moving medium, and active, as the transporter (carrier). Micro- and nanorheology studies of hyaluronan systems will be present as an example of the former, and transport of humic substances through plant leaves as of the latter. Finally, a combination of passive and active view will be demonstrated on hydrogels incorporating humic acids.