

# Diffusion Fundamentals I

UNIVERSITÄT LEIPZIG

## Basic Principles of Theory, Experiment and Application

September 22nd - 24th, 2005  
Leipzig, Germany



The talks will address a broad, interdisciplinary audience rather than only the specialists in the different fields.

- One and a Half Century of Diffusion: Fick, Einstein, and some Figures before and after (*Jean Philibert, Paris*)
- From Diffusion to Anomalous Diffusion: A Century after Einstein's Brownian Motion (*Yossi Klafter, Tel Aviv*)
- How two Pairs of Magnetic Field Gradient Pulses Give Access to New Information about Molecular Dynamics (*Paul Callaghan, Wellington*)
- Solution Dynamics and Self-Organization (*William S. Price, Sydney*)
- Diffusion Measurements in Fluids by Dynamic Light Scattering (*Alfred Leipertz, Erlangen*)

150 years after *Adolf Fick's* and 100 years after *Albert Einstein's* fundamental papers on diffusion, the world-wide community of researchers in the field of diffusion is invited to Leipzig, the place of publication of these papers, to highlight the current developments in the field.



- Analogies in Diffusion of Atoms, Animals, Men and Ideas (*Gero Vogl, Wien*)
- Molecular Simulation Studies of Diffusion in Zeolites and Amorphous Polymers (*Doros N. Theodorou, Athens*)
  - Anomalous Transport in Complex Networks (*Shlomo Havlin, Ramat Gan*)
- Single-File Diffusion far from Equilibrium (*Gunter Schütz, Jülich*)
  - Diffusion of Photons in Human Tissues (*George H. Weiss, Bethesda*)
- Molecular Motors (*Jacques Prost, Paris*)
  - How Molecules Dance in Lipid Membranes (*Ilpo Vattulainen, Helsinki*)
- Diffusion Imaging of the Brain: Technical Considerations and Practical Applications (*David G. Norris, Nijmegen*)
  - Diffusion in Nanocrystals (*Alan Chadwick, Canterbury*)
- Phenomenological Coefficients in Solid-State Diffusion (*Graeme E. Murch, Newcastle*)
  - Solid-State Diffusion and NMR (*Paul Heitjans, Hannover*)
- Effects of Pore Heterogeneity on Diffusion in Nanopores (*Marc-Olivier Coppens, Delft*)
  - Molecular Diffusion under Confinement (*Jörg Kärger, Leipzig*)
- Diffusion in Microporous Materials and its Technological Impact (*Douglas M. Ruthven, Orono*)

Sessions' chairmen and introduction to the posters:

*Dezső L. Beke* (Debrecen)  
*Armin Bunde* (Gießen)  
*Jacques Fraissard* (Paris)  
*Heiner Kaden* (Meinsberg)  
*Josef Käs* (Leipzig)  
*Freek Kapteijn* (Delft)  
*Helmut Mehrer* (Münster)  
*Harry Pfeifer* (Leipzig)

visit [www.diffusion-fundamentals.org](http://www.diffusion-fundamentals.org) for complete up-to-date information

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