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Diffusion Fundamentals I
Basic Principles of Theory, Experiment and Application
 September 22nd - 24th, 2005
 Leipzig

Scientific Programme

Wednesday, September 21st

- 15.30 Opening Conference Office (room 225)
 16.00 - 18.00 Business Meeting (for Editorial Board, Chairmen & Plenary Speakers; room SR225)
 18.00 - 22.00 Welcome party (water, beer, wine, sandwiches) and vernissage of paintings by Taro Ito (assembly hall)

Thursday, September 22nd

Chair: Jacques Fraissard (Paris)

- 08.30 - 09.10 Jean Philibert (Paris): One and a Half Century of Diffusion: Fick, Einstein, and some Figures before and after
 09.10 - 09.50 Yossi Klafter (Tel Aviv): From Diffusion to Anomalous Diffusion: A Century after Einstein's Brownian Motion
 09.50 - 10.30 Gero Vogl (Wien): Analogies in Diffusion of Atoms, Animals, Men and Ideas
 10.30 - 11.00 *Coffee break*

Chair: Jürgen Caro (Hannover)

- 11.00 - 11.40 Jacques Prost (Paris): Molecular Motors
 11.40 - 12.20 Alfred Leipertz (Erlangen): Diffusion Measurements in Fluids by Dynamic Light Scattering
 12.20 - 14.00 *Lunch break; lunch in the canteen "Liebigstraße"*
 14.00 - 15.00 Poster Presentations - Session I (Topics related to Lectures of Thursday morning)

Chair: Armin Bunde (Gießen)

- 15.00 - 15.40 Shlomo Havlin (Ramat Gan): Anomalous Transport in Complex Networks
 15.40 - 16.00 Group picture with all Conference Participants in the Lecture Hall
 16.00 - 16.40 Gunter Schütz (Jülich): Single-File Diffusion far from Equilibrium
 16.40 - 17.10 *Coffee break*

Chair: Harry Pfeifer (Leipzig)

- 17.10 - 17.50 Doros Theodorou, George K. Papadopoulos (Athens): Molecular Simulation Studies of Diffusion in Zeolites and Amorphous Polymers
 17.50 - 18.30 Paul Callaghan (Wellington): How two Pairs of Magnetic Field Gradient Pulses Give Access to New Information about Molecular Dynamics

19.00 - 21.00 [Jesco Frhr. v. Puttkamer \(NASA\): "Space Exploration - Bildungsmagnet und Wirtschaftsfaktor"](#), sharing a presentation for Leipzig's public (in German; optional, for those who simply remain in the large auditory)

19.00 - 24.00 Conference Dinner (organized as an informal get-together in the cellar rooms of the "Moritz-Bastei", an old fortification in Leipzig's former city wall). Dinner Speaker: Jürgen Caro (Hannover)

Friday, September 23rd

Chair: Josef Käs (Leipzig)

- 08.30 - 09.10 George H. Weiss (Bethesda): Diffusion of Photons in Human Tissues
09.10 - 09.50 William S. Price (Sydney): Solution Dynamics and Self-Organization
09.50 - 10.30 Ilpo Vattulainen (Helsinki): How Molecules Dance in Lipid Membranes

10.30 - 11.00 *Coffee break*

Chair: Dezső L. Beke (Debrecen)

- 11.00 - 11.40 David G. Norris (Nijmegen): Diffusion imaging of the brain: technical considerations and practical applications
11.40 - 12.20 Paul Heitjans (Hannover): Solid-State Diffusion and NMR

12.20 - 14.00 *Lunch break; lunch in the canteen "Liebigstraße"*

14.00 - 16.00 Poster Presentations - Session II (Topics related to the Lectures of Thursday afternoon and Friday morning) and *coffee break*

15.00 - 15.45 [Søren Bøwadt \(Brussels\): Towards the Seventh Framework Programme for Research 2007 - 2013 \(optional, sharing the Physics Colloquium of the Leipzig University\)](#)

Chair: Helmut Mehrer (Münster)

- 16.00 - 16.40 Alan Chadwick (Canterbury): Diffusion in Nanocrystals
16.40 - 17.20 Graeme E. Murch (Newcastle): Phenomenological Coefficients in Solid-State Diffusion

18.00 - 19.15 Recital in St. Thomas Church

19.30 - 24.00 get-together in the restaurant Bayerischer Bahnhof

Saturday, September 24th

- 08.30 - 09.30 Poster Presentations - Session III (Topics related to the Lectures of Friday afternoon and Saturday morning) and *coffee break*

Chair: Freek Kapteijn (Delft)

- 09.30 - 10.10 Marc-Olivier Coppens (Delft): Effects of Pore Heterogeneity on Diffusion in Nanopores
10.10 - 10.50 Jörg Kärger (Leipzig): Molecular Diffusion under Confinement
10.50 - 11.30 Douglas M. Ruthven (Orono): Technological Impacts of Diffusion in Nanopores
11.30 - 11.40 Conclusion
12.00 - 14.00 Business Meeting (for Editorial Board) in the restaurant "Das Fass"

Location:

Leipzig University, Faculty of Physics and Earth Sciences, Linnéstraße 5, 04103 Leipzig – in 20 min-walking distance to the centre (1 in the [City Map](#)).

The lecture hall (large auditory) is equipped with overhead projector and laptop (Windows) with beamer.

Conference Chairmen: [Jörg Kärger](#), Leipzig; [Paul Heitjans](#), Hannover

The [Editorial Board](#) of [diffusion-fundamentals.org](#) acts as **International Organizing Committee**.

Local Organizing Committee: [Christian Chmelik](#), [Tomas Binder](#)

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Diffusion Fundamentals I

Basic Principles of Theory Experiment and Application

September 21st - 24th, 2005 – Leipzig, Germany

POSTER PRESENTATIONS

Poster Presentation I, Thursday, September 22nd 14.00 – 15.00

Fluids

- 1 Residue Specific Studies of NH Exchange Rates Performed on Ubiquitin
T. Brand, G. A. Morris, E. J. Cabrita, H.-J. Hofmann, S. Berger
- 2 Diffusion Exchange NMR Spectroscopic Study of Dextran Exchange through Polyelectrolyte Multilayer Capsules
P. Galvosas, Y. Qiao, T. Adalsteinsson, M. Schönhoff, P. T. Callaghan
- 3 Theory and Simulation of Fick's Historical Verification of the 2nd Law
M. E. Glicksman, R. DiDomizio, A. Lupulescu
- 4 Molecular Motions of Calix[4]Arene and Thiacalix[4]Arene in Solution Studied by NMR Relaxation
J. Lang, K. Šetková, V. Deckerová, P. Lhoták, J. Czernek
- 5 Particle Diffusion Coefficient and Dynamic Viscosity in Non-Ideal Liquid Mixtures by Dynamic Light Scattering
C. Botero, H. Kremer, A. P. Fröba, A. Leipertz
- 6 Liquid Viscosity and Surface Tension by Surface Light Scattering
A. P. Fröba, C. Botero, H. Kremer, A. Leipertz
- 7 Mutual Diffusion Coefficient in Fluids by Dynamic Light Scattering
A. P. Fröba, C. Botero, H. Kremer, A. Leipertz
- 8 Thermal Diffusivity of Fluids by Dynamic Light Scattering
H. Kremer, C. Botero, A. P. Fröba, A. Leipertz
- 9 NMR Diffusion Experiments for Complex Systems
K. I. Momot, D. G. Regan, P. W. Kuchel
- 10 Molecular Motion in Thin Liquid Films near Surface Steps
A. Schob, F. Cichos
- 11 Self-Diffusion Slowdown in Liquid Indium and Gallium under Confinement
P. Sedykh, E. V. Charnaya, Cheng Tien, D. Michel, M.K. Lee, W. Wang
- 12 Multicomponent Diffusion Coefficients in Liquids from Model-Based Raman Spectroscopy
A. Bardow, V. Göke, H.-J. Koß, E. Kriesten, K. Lucas, W. Marquardt
- 13 Apparent Longitudinal Relaxation of Mobile Spins in Thin, Periodically Excited Slices
A. Gädke, N. Nestle

Theory and Modelling (part I)

- 14 Metastability in the Zero-Range Process
R. J. Harris, J. Kaupužs, R. Mahnke
- 15 Deterministic Chaos and Diffusion: From Theory to Experiments
R. Klages
- 16 Anderson Localization and Generalized Diffusion
V. Kuzovkov, W. v. Niessen
- 17 Forced Oscillations in Self-Oscillating Surface Reaction Models
V. Kuzovkov, G. Zvejniece, O. Kortlüke, W. v. Niessen
- 18 Ion Diffusion in Mixed Alkali Glasses
P. Maass, R. Peibst, S. Schott
- Non-Fickian Interdiffusion of Dynamically Asymmetric Species:
- 19 A Molecular Dynamics Study
J. Yaneva, B. Dünweg, A. Milchev
- Parameter Dependence of Ballistic Velocity in Deterministic Diffusion
- 20 in the Form of Devil's Staircase
Syuji Miyazaki, Masaomi Yoshida, Hirokazu Fujisaka

Poster Presentation II, Friday, September 23rd 14.00 – 16.00**Theory and Modelling (part II)**

- 21 Molecular Traffic Control in Porous Nanoparticles
A. Brzank, G. Schütz
- 22 Anomalous Knudsen Diffusion in Simple Pore Models
A.J. Dammers, M.-O. Coppens
- 23 Potential Calculations and MD Simulations of *n*-Pentane in Silicalite-1
A. Loitsuangsin, S. Fritzsche, S. Hannongbua
- 24 Exploring the Extreme Transport Conditions through Membranes by Molecular Dynamics Simulations
J. Gulín-González, A. Schüring, S. Vasenkov, S. Fritzsche, J. Kärger
- 25 Rotational Motion of *n*-Pentane in H-ZK5
O. Saengsawang, P. C. M. M. Magusin, T. Remsungnen, A. Loitsuangsin, S. Fritzsche, A. Schüring, S. Hannongbua
- 26 Entropic Barriers for the Diffusion of Molecules under Confinement
A. Schüring, S. Fritzsche, S. M. Auerbach
- 27 Molecular Simulation of Gas Transport in Nanoporous Carbons
Qiong Cai, A. Buts, N. Seaton, M. Biggs
- 28 Diffusion between Interstitial Sites in the Hexagonal C14 AB₂ Structure
C. A. Sholl
- 29 Numerical Evidence for the Validity of the Local Equilibrium Hypothesis - The *n*-Octane Vapor-Liquid Interface
J.-M. Simon, S. Kjelstrup, D. Bedeaux
- 30 Kinetics of Adsorption of Linear and Branched C6 Alkanes onto ZSM-5 Zeolite - Experiments and Molecular Simulations
J.-M. Simon, E. Fardet-Lemaire, I. Bezverkhyy, J.-P. Bellat, F. Baras
- 31 Determining Binary Diffusion Coefficients for Mixtures in Zeolites from PFG NMR, MD Simulation, and Theory
Qi Zhao, Shaji Chempath, R. Q. Snurr
- 32 A CTRW Interpretation of Simulated Single-file Diffusion in Zeolites
P. Demontis, G. B. Suffritti
- 33 A "Coarse-grained" Model based on a Cellular Automaton for the Study of Diffusion in Microporous Materials
P. Demontis, F. G. Pazzona, G. B. Suffritti
- 34 Effects of Surface Roughness on Transport Properties of Porous Media
M. Kainourgiakis, T. Steriotis, E. Kikkinides, A. Stubos, S. Vasenkov
- 35 Self- and Transport Diffusion in Narrow Pores with Different Roughness
S. Zschiegner, S. Russ, A. Bunde, J. Kärger
- 36 Understanding the Loading Dependence of Self-Diffusion in Carbon Nanotubes
S. Jakobtorweihen, C. P. Lowe, F. J. Keil, B. Smit
- 37 A Molecular Dynamics study of the diffusion coefficients in water-tertbutyl alcohol mixtures: A comparison between All-Atoms and United-Atoms models.
F.H.R Leroy, A.D. Mackie, P. Miró, C. Bo and J. Bonet Avalos

- 38 Self-diffusion of *n*-alkanes in MFI-type zeolites: A Molecular Dynamics study and a comparison to Quasi-Elastic Neutron Scattering experiments.
F.H.R Leroy, H. Jobic, B. Rousseau and A.H. Fuchs
- 39 Anomalous Diffusion in Ionically Conducting Glasses
J. Habasaki, K. L. Ngai, Y. Hiwatari
- 40 Modelling of Diffusion-Controlled Pattern Formation in Thin Metallic Film Growth on Crystalline Substrates
V. Kuzovkov, E. Kotomin, G. Zvejniaks
- 41 Calculation of the Effective Diffusion Coefficient for Heterogeneous Media
J.R. Kalnin, E.A. Kotomin, J. Maier, V.N. Kuzovkov
- 42 Molecular Dynamic Simulation on Adsorption of Chlorinated Hydrocarbon into High-Silica Zeolite
K. Chihara, H. Minaki, T. Sasaki
- 43 Theory of Diffusion under Stress
A. V. Nazarov, A. A. Mikheev
- 44 N-Body Potentials in Simulation of Point Defect Properties
A. S. Chirkov, A. V. Nazarov
- 45 Stimuli and Mechanisms of Diffusion Mass-Transport in the Processes of Structural-Phase Changes in Metallic Materials under High-Rate Deformation
Y.S. Nechaev
- 46 Mechanisms of Hydrogen Sorption, Solubility and Diffusivity in Carbon Nanomaterials, Relevance to the On-Board Storage Problem
Y.S. Nechaev
- 47 On the Physics of the Apparent Solubility and Diffusivity of Hydrogen in Metals and Alloys, Relevance for Revealing the Hydrogen-Assisted Damage Micromechanisms
Y.S. Nechaev
- 48 Anomalies of the Diffusion Mass-Transfer during 2D-Decomposition of Superconducting Yba₂Cu₃O_{6+x}/Y₂BaCuO₅ Composites
Y.S. Nechaev
- 49 Calculation of Diffusivities in Ordering f.c.c. Alloy by the Kinetic Data about Short- and Long-Range Order Parameters' Relaxation
T. Radchenko, V. Tatarenko, S. Bokoch
- 50 Boundary-Value Problems for the Diffusion Equation in Domains with Disconnected Boundary
S. D. Traytak
- 51 Simulation of Diffusion under Pressure in BCC Metals
I. Valikova, A. Nazarov
- 52 Oxygen Transport and Association in Ytria Stabilised Zirconia
M. Kilo, R. A. Jackson
- 53 Modelling of Anion Transport in YZrON
M. Kilo, T. Bredow
- 54 Diffusion of Methanol in Zeolites: a Molecular Dynamics Study
D. F. Plant, G. Maurin, R. G. Bell

Solids

- 55 Computer Simulation of the Formation of Hollow Nanocrystals
I. V. Belova, G. E. Murch
- 56 Carbon Interstitial Diffusion in γ -Fe
I. V. Belova, G. E. Murch
A Microscopic Flow Model Based on Brownian Dynamics for Simulating Ionic
- 57 Diffusion in Glasses
G. Darricarrere, J. Dutour, F. Henn
- 58 Surface Diffusion and Growth of Alloy Nanoclusters: A Monte Carlo Study
S. Heinrichs, M. Einax, W. Dieterich, P. Maass, A. Majhofer
- 59 Numerical Study of Grain Boundary Diffusion: Size Effects
D. Gryaznov, J. Fleig, J. Maier
- 60 Li Diffusion in LiAlO₂ Single Crystals Studied with NMR Spectroscopy
S. Indris, R. Uecker, P. Heitjans
- 61 BaTiO₃ Formation by Solid State Reactions on Rutile Single Crystals
A. Lotnyk, S. Senz, D. Hesse
- 62 Proton Diffusion and Mobility in Condensed Matter
K. D. Kreuer
- 63 Diffusion of Nano-Sized Liquid Pb Inclusions in Thin Aluminum Foils
S. Prokofjev, V. Zhilin, E. Johnson, U. Dahmen
A Theoretical Model of Interaction between Titanium and Binary Rarified Gas Media
with Taking into Account the Segregation of Impurities on the Interface and in the
- 64 Bulk of the Metal
Ya. Matychak, A. Prytula, V. Fedirko, I. Pohreljuk
- Dynamics in FePt Thin Films Studied by Grazing Incidence Synchrotron
Reflexion on Isotopic Multilayers
- 65 *M. Rennhofer, M. Sladeczek, D. Kmiec, S. Stankov, B. Sepiol, G. Vogl, R. Ruffer,
A. Vantomme, J. Meersschaut*
- 66 Fundamentals of Self-Diffusion in Amorphous Si-(B-)C-N
H. Schmidt
- 67 Enhanced Ionic Conductivity in Heavily Doped Ceria Nanoceramics
M. G. Bellino, D. G. Lamas, N. E. Walsöe de Reca
- 68 Ultraslow Cation Diffusion in Li Intercalated Cubic TiS₂
M. Wilkening, P. Heitjans
- 69 Interdiffusion in Quasi-Ternary Semiconductor Systems of GeTe/SnTe/PbTe
L. V. Yashina, V. Leute, H. M. Schmidtke, V. I. Shtanov
- 70 Formation Mechanism of Plateau, Rapid Fall and Tail in Phosphorus Diffusion
Profile in Silicon Based on the Pair Diffusion Models of Vacancy Mechanism and
Interstitial Mechanism
Masayuki Yoshida, Masami Morooka, Shuji Tanaka, Manabu Takahashi

Soft Matter: From (Bio-)Molecules to Man

- 71 Spatial Redistribution of Boron Implanted into Poly-(Di-n-Hexyl Silane), (PDHSi)
D. Fink, M. Müller, M. Behar, R. M. Papaleo
- 72 Entropic Forces Generated by Grafted Semi-flexible Polymers
A. Gholami, J. Wilhelm, Erwin Frey
- 73 Probing Pore-Structure within Porous Polymer Particles by NMR
E. W. Hansen, H. C. Gran
- 74 Ultraslow Molecular Dynamics of Organized Fluids: NMR Experiments and Monte-Carlo Simulations
F. Grinberg
- 75 Drug penetration studied by FTIR methods
B. D. Hanh, U. Günther, M. Hartmann, S. Wartewig, R. Neubert
- 76 Fast Optical Tracking of Diffusion in Brain Extracellular Space
J. Hrabe, S. Hrabetova
- 77 Dead Spaces Hinder Diffusion and Contribute to Tortuosity of Brain Extracellular Space
S. Hrabetova, Lian Tao, J. Hrabe, C. Nicholson
- 78 Modelling Aroma Release from Silica Sol-Gel Particles Using Self-Diffusion Data Obtained Under Magic Angle Spinning Conditions
S. R. Veith, F. M. Berruex, E. Hughes, S. E. Pratsinis
- 79 Fluid Self-Diffusion in Scots Pine Sapwood and Silica Wood Replicas
E. H. Johannessen, E. W. Hansen, J. B. Rosenholm
- 80 How to Measure Subdiffusion Coefficient
T. Kosztolowicz
- 81 Computer Simulation - Influence of Corset Effect
M. Kroutieva, T. Shakirov, N. Fatkullin, R. Kimmich
- 82 Subdiffusive Reaction Front in the Enamel Caries Process
T. Kosztolowicz, K. D. Lewandowska
- 83 Studies on Diffusion of Rhodamine B Labeled Polystyrene in Dilute and Semidilute Solutions by Fluorescence Correlation Spectroscopy
Ruigang Liu, W. Oppermann
- 84 Lateral Diffusion of Proteins in Cell Membrane: The Anomalous Case
A. Lubelski, J. Klafter
- 85 Uptake of the Herbicide 2,4-Dichlorophenoxyacetate (2,4-D) by *Delftia acidovorans* MC1 - Complex Kinetic Characteristics in Dependence of pH and Growth Substrate
R. H. Müller, D. Hoffmann
- 86 Measurement of Local Diffusion Properties in Brain Tissue
C. Nicholson, Lian Tao, S. Hrabetova, R. G. Thorne
- 87 ESRI Study of Diffusion Processes in Poly(2-Hydroxyethyl Methacrylate) Gels and Concentrated Solutions
A. Marek, J. Labský, J. Pilař
- 88 Diffusivity of Water in a Biological Model Membrane: an NMR Study
M. Rudakova, A. Filippov

- Water Diffusion through Asymmetric Polymer Membranes and Polyelectrolyte
89 Multilayers
A. Sagidullin, J. Meier-Haack, U. Scheler
- Study of diffusion coefficient of water and homologous series of primary alcohols in
90 PEBA membranes by NMR
N. Scharnagl, Norbert Stribeck, Veroni Barbi
- Comparing the Biophysical Properties of Sterols in Lipid Membranes – What is
91 Special about Cholesterol?
H. A. Scheidt, P. Müller, A. Herrmann, K. Arnold, K. Gawrisch, D. Huster
- Varying the Gradient Pulse Length Gives Valuable Information in NMR Diffusometry
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O. Söderman, D. Topgaard
- Ultra fast processes for solvent evaporation in thin polymer films below T_g
93
M. Souche, D. Long
- Effects of Ion Pairs on Mass and Charge Transport in a Crosslinked Amorphous
94 Polymer Electrolyte
S. Obeidi, S.J. Pas, N.A. Stolwijk
- PFG NMR Studies of Diffusion in Sulfonic Acid Based Systems
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A. Telfah, G. Majer
- MRI Study of Fickian, Case II and Anomalous Diffusion of Solvents into HPMC
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J. Tritt – Goc, J. Kowalczyk
- Pulsed Field Gradient NMR in Combination with Magic Angle Spinning - New
97 Possibilities for Studying Diffusion in Lipid Membranes and Heterogeneous
Materials
A. Pampel
- Influence of Phase Transitions on the Mobility of Organic Pollutants in
98 Synthetic and Natural Polymers
U. Roland, K. W. Fomba, F. Stallmach, P. Galvosas, J. Kärger, F.-D.-Kopinke
- Anisotropic Solute and Solvent Diffusion in Protein Crystals
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R. Archipov, A. Cvetkovic, F. Stallmach, A. J.J. Straathof
- Influence of Domains on Lateral Diffusion in Lipid Bilayers: PFG NMR Study
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S. Vasenkov, K. Ulrich, C. Selle, J. Kärger, J. Käs
- Emulsion Droplet Size Distribution by PFG NMR: High Concentrations, Small Radii,
101 and Suspo-Emulsions
Jianqin Zhuang, R. Voelkel
- Ionic Aggregation of Metallocene Olefin Polymerization Catalysts: A PFG NMR
102 Study
B. Endeward, P. Brant, M. Bernardo, H. Thomann
- Lattice and Grain Boundary Diffusion of Cations in Tetragonal Zirconia
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S. Swaroop, M. Kilo, Ch. Argirusis, G. Borchardt, A. H. Chokshi
- Monte Carlo Study of Transport Phenomena in Surface Binary Alloys
104
A. De Virgiliis, K. Binder
- Static and dynamic properties of absorbed water in Chabazite: A molecular
105 dynamics study
S. Jost, P. Biswas, S. Fritzsche, A. Schüring, J. Kärger, R. Heberlandt

Poster Presentation III, Saturday, September 24th

08.30 – 09.30

Holes and Channels

- 110 Diffusion of Cyclohexane and Cyclopentane Confined in Mesoporous MCM-41
D. W. Aksnes, K. Førland
- 111 Evidence for Subdomains in Large Crystals of NaX Zeolite
Z. Adem, F. Guenneau, M.-A. Springuel-Huet, A. Gédéon
- 112 From "Fast" to "Slow" Liquid-vapor Exchange in Partially Filled Porous Media. A Field-gradient NMR Diffusometry Study
I. Ardelean, G. Farrher, C. Mattea, R. Kimmich
- 113 Synthesis and Catalytic Performance of Large Zeolite Y Crystals
C. Berger, R. A. Rakoczy, R. Gläser, J. Weitkamp
- 114 Diffusion of n-Alkanes in MFI-Type Zeolites: a Comparative Study with Different Measuring Techniques
V. Bourdin, S. Brandani, A. Gunadi, H. Jobic, C. Krause, J. Kärger, W. Schmidt
- 115 Effect of Water Adsorption on the Thermodynamics and Dynamics of the Extra-Framework Cations in Zeolite Systems
B. Coasne, G. Maurin, A. Nicolas, S. Devautour-Vinot, J.-C. Giuntini, F. Henn
- 116 Molecular Transport in Inorganic Membranes: CO₂ / CH₄ Separation
E. W. Corcoran
- 117 Moments Method Applied to the In-Situ Characterisation of Normal Butane Mass Transfer in MFI Zeolite Membranes
L. Courthial, A. Baudot, E. Jolimaitre, M. Tayakout, C. Jallut
- 118 Coefficients in Solid-State Diffusion by Inverse Gas Chromatography
A. V. Dremetsika, P. A. Siskos, N. A. Katsanos
- 119 Effect of the Acid Properties on the Diffusion of C₇ Hydrocarbons in UL-ZSM-5 Materials
Hoang Vinh-Thang, Qinglin Huang, A. Ungureanu, M. Eić, Do Trong-On, S. Kaliaguine
- 120 Transport Properties of Catalyst Supports Derived from a Catalytic Test Reaction
F. Friedel, F. Janowski, T. Hahn, D. Enke
- 121 Time dependent diffusion studies in partially filled porous glasses using the MAGROFI technique
German Farrher, Ioan Ardelean, Rainer Kimmich
- 122 NMR Imaging as a Tool for Studying the Diffusion and Co-Diffusion of Gases in Zeolite Catalysts
J. Fraissard
- 123 Diffusion in Multicomponent Gas Adsorption on MSC5A, Chromatographic Study
Kazuyuki Chihara, Yosuke Kaneko, Takuya Terakado, Hisashi Mizuochi
- 124 Single Molecule Spectroscopy: Translational and Rotational Diffusion of Single Fluorescent Dyes in Nano-Structured Porous Materials
J. Kirstein, C. Jung, C. Hellriegel, C. Bräuchle

- 125 Mass Transport in the Hierarchical Porous Structure of Zeolite-Based Composite Membranes
A. Zikánová, P. Hrabánek, M. Kočířík, L. Brabec, K. Juristová, P. Čapek, B. Bernauer, V. Hejtmánek, O. Šolcová, P. Uchytíl
- 126 Concentration Dependence of Transport and Corrected Diffusivities of n-Hexane in Silicalite Measured by QENS
N. Laloué, C. Laroche, H. Jobic
- 127 Azeotropic Adsorption of Organic Solvent Vapor Mixture on High Silica Zeolite, Mass Transfer Dynamics
Kazuyuki Chihara, Takashi Matsumoto, Kazunori Hijikata
- 128 The Release Properties of the Mesoporous Materials SBA-15 and PHTS for their Use in the Controlled Release of Ibuprofen and Vancomycin
K. J.F. Lievens, V. Meynen, P. Cool, E. F. Vansant, G. V. Baron, J. F.M. Denayer
- 129 The Sorption Dynamics of C₃ Hydrocarbons over Carbon Nanotubes
G. Onyestyák, Z. Ötvös, J. Valyon, I. Kiricsi, L. V. C. Rees
- 130 The working range of static field gradient NMR illustrated by measurements of the intracrystalline diffusion of water in NaA-zeolites
H. Pahlke, B. Geil, D. Kruk, F. Fujara
- 131 Measurement of Diffusivities of Helium and Argon in Silicalite by Static Single Crystal Membrane Technique
E. Chalhoub, D.B. Shah
- 132 Diffusion of BTX in MSC5A in Supercritical CO₂
Kazuyuki Chihara, Ryota Suzuki, Naoki Omi
- 133 Gas Diffusion in Polycrystalline MFI-Type Zeolite Membranes
Hiromitsu Takaba, Atsushi Yamamoto, Kikuko Hayamizu, Shin-ichi Nakao
- 134 Adsorption and Self-Diffusion of Water and Benzene Molecules Adsorbed in Synthetic Opal Samples
R. Vartapetian, E. Khozina, I. Bardyshev
- 135 Synthesis and Characterization of Carbon Nanotube Arrays
E. Vermisoglou, G. Pilatos, V. Georgakilas, E. Topoglidis, N. Kanellopoulos
- 136 Innovative Methods for the Characterization of Ceramic Nanofiltration Membranes Modified by TEOS/O₃ Chemical Vapor Deposition
G.E. Romanos, A. Labropoulos, N. Kanellopoulos
- 137 Effect of carbonization process on the structure and the gas permeation properties of polyimide hollow fiber membranes.
E. P. Favvas, G. C. Kapantaidakis and N. K. Kanellopoulos
- 138 Transport Diffusivity in Zeolites: Possible Reasons for Misleading Results of Macroscopic Techniques
C. Chmelik, P. Kortunov, S. Vasenkov, T. Ito, J. Kärger, J. Konatowski, J. Weitkamp, D. M. Ruthven
- 139 New Options for Measuring Molecular Diffusion in Zeolites by MAS PFG NMR
M. Fernandez, A. Pampel, D. Freude, J. Kärger
- 140 PFG NMR Measurement of Molecular Diffusion in Cation-Free Zeolites of Type LTA
A. Corma, J. Kärger, C. Krause

- 141 A Remarkable Non-Monotonical Chain-Length Dependence: Diffusion of n-Alkanes in Zeolites LTA
S. Brandani, J. Caro, H. Jobic, C. Krause, J. Kärger, A. Möller, D. M. Ruthven, R. Staudt, Xiaobo Yang
- 142 Separation Based on Molecular Level Using Zeolitic Membranes
S. Khajavi, F. Kapteijn, J.C. Jansen
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