Rustem Valiullin

List of Publications by Year
in descending order

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128 papers	4,080 citations	117625 34 h-index	133252 59 g-index
135 all docs	135 docs citations	135 times ranked	3924 citing authors

#	Article	IF	Citations
1	On the Comparative Analysis of Different Phase Coexistences in Mesoporous Materials. Materials, 2022, 15, 2350.	2.9	3
2	Connecting dynamic pore filling mechanisms with equilibrium and out of equilibrium configurations of fluids in nanopores. Journal of Chemical Physics, 2022, 156, 134702.	3.0	2
3	Diffusion in nanopores: inspecting the grounds. Adsorption, 2021, 27, 267-281.	3.0	15
4	Pulsed field gradient NMR diffusion measurement in nanoporous materials. Adsorption, 2021, 27, 453-484.	3.0	40
5	Impact of Geometrical Disorder on Phase Equilibria of Fluids and Solids Confined in Mesoporous Materials. Langmuir, 2021, 37, 3521-3537.	3.5	12
6	Nuclear Magnetic Resonance Cryoporometry Study of Solidâ€“Liquid Equilibria in Interconnected Spherical Nanocages. Journal of Physical Chemistry C, 2021, 125, 26916-26926.	3.1	4
7	A novel approach for advanced thermoporometry characterization of mesoporous solids: Transition kernels and the serially connected pore model. Microporous and Mesoporous Materials, 2020, 309, 110534.	4.4	13
8	Sorption Isotherm Reconstruction and Extraction of Pore Size Distributions for Serially Connected Pore Model (SCPM) Structures Employing Algorithmic and Statistical Models. Journal of Physical Chemistry C, 2020, 124, 21591-21607.	3.1	13
9	Transport Properties of Mixed-Matrix Membranes: A Kinetic Monte Carlo Study. Physical Review Applied, 2019, 12, .	3.8	12
10	Comparative Gas Sorption and Cryoporometry Study of Mesoporous Glass Structure: Application of the Serially Connected Pore Model. Frontiers in Chemistry, 2019, 7, 230.	3.6	11
11	Capillary Condensation and Evaporation in Irregular Channels: Sorption Isotherm for Serially Connected Pore Model. Journal of Physical Chemistry C, 2019, 123, 16239-16249.	3.1	25
12	Collagen networks determine viscoelastic properties of connective tissues yet do not hinder diffusion of the aqueous solvent. Soft Matter, 2019, 15, 3055-3064.	2.7	60
13	Revealing the Transient Concentration of CO₂ in a Mixedâ€Matrix Membrane by IR Microimaging and Molecular Modeling. Angewandte Chemie - International Edition, 2018, 57, 5156-5160.	13.8	35
14	Einblicke in die Verteilung von CO₂â€MolekÃ¼len und deren zeitliche Entwicklung durch Mikroâ€Bildgebung mittels IRâ€Spektroskopie und molekulardynamische Modellierung. Angewandte Chemie, 2018, 130, 5250-5255.	2.0	0
15	Diffusive Spreading of Molecules in Nanoporous Materials. , 2018, , 171-202.		4
16	Transport-Optimized Nanoporous Materials for Mass Separation and Conversion as Designed by Microscopic Diffusion Measurement. , 2018, 19, 96-124.		0
17	Water Transport in Periodic Mesoporous Organosilica Materials. Journal of Physical Chemistry C, 2018, 122, 12673-12680.	3.1	6
18	Mesoporous Silicon. , 2018, , 133-147.		0

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19	NMR Cryoporometry Characterization of Mesoporous Silicon. , 2018, , 601-609.		0
20	Mesopore Diffusion Within Porous Silicon. , 2018, , 331-340.		1
21	Scale-dependent diffusion anisotropy in nanoporous silicon. Scientific Reports, 2017, 7, 40207.	3.3	43
22	Ice Nucleation in Periodic Arrays of Spherical Nanocages. Journal of Physical Chemistry C, 2017, 121, 23788-23792.	3.1	10
23	Structure-correlated diffusion anisotropy in nanoporous channel networks by Monte Carlo simulations and percolation theory. European Physical Journal B, 2017, 90, 1.	1.5	1
24	Phase transitions in disordered mesoporous solids. Scientific Reports, 2017, 7, 7216.	3.3	14
25	Mesoporous Silicon. , 2017, , 1-15.		0
26	NMR Cryoporometry Characterization of Mesoporous Silicon. , 2017, , 1-9.		0
27	Diffusion in complementary pore spaces. Adsorption, 2016, 22, 879-890.	3.0	3
28	Transport properties of hierarchical microâ€“mesoporous materials. Chemical Society Reviews, 2016, 45, 3439-3467.	38.1	202
29	Chapter 12. Confined Fluids: NMR Perspectives on Confinements and on Fluid Dynamics. New Developments in NMR, 2016, , 390-434.	0.1	2
30	Mesopore Diffusion Within Porous Silicon. , 2016, , 1-10.		0
31	Mesoporeâ€Promoted Transport in Microporous Materials. Chemie-Ingenieur-Technik, 2015, 87, 1794-1809.	0.8	28
32	Freezing and Melting Transitions under Mesoscalic Confinement: Application of the Kosselâ€“Stranski Crystal-Growth Model. Journal of Physical Chemistry C, 2015, 119, 4312-4323.	3.1	34
33	Micro-imaging of liquidâ€“vapor phase transition in nano-channels. Microporous and Mesoporous Materials, 2015, 214, 143-148.	4.4	17
34	Improving mass-transfer in controlled pore glasses as supports for the platinum-catalyzed aromatics hydrogenation. Catalysis Science and Technology, 2015, 5, 3137-3146.	4.1	15
35	Field-Cycling Relaxometry as a Molecular Rheology Technique: Common Analysis of NMR, Shear Modulus and Dielectric Loss Data of Polymers vs Dendrimers. Macromolecules, 2015, 48, 7521-7534.	4.8	32
36	Diffusion and Molecular Exchange in Hollow Coreâ€“Shell Silica Nanoparticles. Langmuir, 2015, 31, 10285-10295.	3.5	12

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37	Modeling the Influence of Side Stream and Ink Bottle Structures on Adsorption/Desorption Dynamics of Fluids in Long Pores. Langmuir, 2015, 31, 188-198.	3.5	4
38	Mesoporous Silicon. , 2014, , 115-127.		0
39	Probing Mass Transfer in Mesoporous Faujasiteâ€Type Zeolite Nanosheet Assemblies. ChemPhysChem, 2014, 15, 1681-1686.	2.1	28
40	Mesopore Diffusion Within Porous Silicon. , 2014, , 1-10.		1
41	Mesoporous Silicon. , 2014, , 1-12.		0
42	NMR Cryoporometry and Estimation of Pore Sizes in Mesoporous Silicon. , 2014, , 1-8.		1
43	Filling Dynamics of Closed End Nanocapillaries. Langmuir, 2014, 30, 1290-1294.	3.5	28
44	Understanding Adsorption and Transport of Light Gases in Hierarchical Materials Using Molecular Simulation and Effective Medium Theory. Journal of Physical Chemistry C, 2014, 118, 14355-14370.	3.1	29
45	Diffusion properties of liquid crystal-based microemulsions. Colloid and Polymer Science, 2014, 292, 1961-1969.	2.1	0
46	Transport enhancement in binderless zeolite X- and A-type molecular sieves revealed by PFG NMR diffusometry. Microporous and Mesoporous Materials, 2014, 188, 126-132.	4.4	27
47	Waterâ€Mediated Proton Conduction in a Robust Triazolyl Phosphonate Metalâ€“Organic Framework with Hydrophilic Nanochannels. Chemistry - A European Journal, 2014, 20, 8862-8866.	3.3	35
48	Mesopore Diffusion Within Porous Silicon. , 2014, , 221-230.		1
49	NMR Cryoporometry and Estimation of Pore Sizes in Mesoporous Silicon. , 2014, , 439-447.		0
50	Diffusion in Nanoporous Host Systems. Annual Reports on NMR Spectroscopy, 2013, 79, 23-72.	1.5	15
51	Diffusion Study by IR Micro-Imaging of Molecular Uptake and Release on Mesoporous Zeolites of Structure Type CHA and LTA. Materials, 2013, 6, 2662-2688.	2.9	30
52	Diffusion in microporous materials with embedded mesoporosities. Microporous and Mesoporous Materials, 2013, 178, 84-89.	4.4	19
53	The interplay between inter- and intra-molecular dynamics in a series of alkylcitrates. Soft Matter, 2013, 9, 4681.	2.7	22
54	Improving structural analysis of disordered mesoporous materials using NMR cryoporometry. Microporous and Mesoporous Materials, 2013, 178, 15-19.	4.4	21

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55	Transport properties of gas-expanded liquids in bulk and under confinement. Journal of Supercritical Fluids, 2013, 75, 43-47.	3.2	10
56	Mass transfer in mesoporous materials: the benefit of microscopic diffusion measurement. Chemical Society Reviews, 2013, 42, 4172.	38.1	221
57	The Mechanism of Pseudomorphic Transformation of Spherical Silica Gel into MCM-41 Studied by PFG NMR Diffusometry. Materials, 2013, 6, 3688-3709.	2.9	26
58	Exploring Internal Structure of Nanoporous Glasses Obtained by Leaching of Phaseâ€Separated Alkali Borosilicate Glasses. Chemie-Ingenieur-Technik, 2013, 85, 1734-1741.	0.8	1
59	Exploring the hierarchy of transport phenomena in hierarchical pore systems by NMR diffusion measurement. Microporous and Mesoporous Materials, 2012, 164, 273-279.	4.4	61
60	Probing mesopore connectivity in hierarchical nanoporous materials. Carbon, 2012, 50, 4804-4808.	10.3	18
61	Tracing Molecular Propagation in Dextran Solutions by Pulsed Field Gradient NMR. Journal of Physical Chemistry Letters, 2012, 3, 1854-1857.	4.6	11
62	Monitoring Molecular Mass Transfer in Cation-Free Nanoporous Host Crystals of Type AlPO-LTA. Journal of the American Chemical Society, 2012, 134, 7725-7732.	13.7	45
63	Diffusion in Hierarchical Mesoporous Materials: Applicability and Generalization of the Fast-Exchange Diffusion Model. Langmuir, 2012, 28, 3621-3632.	3.5	60
64	Enhanced charge transport in nano-confined ionic liquids. Soft Matter, 2012, 8, 289-293.	2.7	119
65	Exploring Mass Transfer in Mesoporous Zeolites by NMR Diffusometry. Materials, 2012, 5, 699-720.	2.9	18
66	RÃ¼cktitelbild: Single-Particle and Ensemble Diffusivities-Test of Ergodicity (Angew. Chem. 5/2012). Angewandte Chemie, 2012, 124, 1308-1308.	2.0	1
67	Intracrystalline Diffusion in Mesoporous Zeolites. ChemPhysChem, 2012, 13, 1495-1499.	2.1	41
68	Singleâ€Particle and Ensemble Diffusivitiesâ€"Test of Ergodicity. Angewandte Chemie - International Edition, 2012, 51, 1152-1155.	13.8	43
69	Back Cover: Singleâ€Particle and Ensemble Diffusivitiesâ€"Test of Ergodicity (Angew. Chem. Int. Ed. 5/2012). Angewandte Chemie - International Edition, 2012, 51, 1282-1282.	13.8	0
70	Rotational and translational diffusion in glass-forming N,N,-diethyl-3-methylbenzamide (DEET). Soft Matter, 2011, 7, 10565.	2.7	10
71	How to compare diffusion processes assessed by single-particle tracking and pulsed field gradient nuclear magnetic resonance. Journal of Chemical Physics, 2011, 135, 144118.	3.0	23
72	Guest Diffusion in Interpenetrating Networks of Micro- and Mesopores. Journal of the American Chemical Society, 2011, 133, 2437-2443.	13.7	30

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73	How Hydrogen Bonds Influence the Mobility of Imidazolium-Based Ionic Liquids. A Combined Theoretical and Experimental Study of 1-n-Butyl-3-methylimidazolium Bromide. Journal of Physical Chemistry B, 2011, 115, 15280-15288.	2.6	118
74	Phase State and Dynamics of Fluids in Mesoporous Solids. , 2011, , .		2
75	Diffusion NMR of Fluids Confined to Mesopores under High Pressures. , 2011, , .		4
76	Diffusion in ionic liquids: the interplay between molecular structure and dynamics. Soft Matter, 2011, 7, 1678.	2.7	104
77	Diffusion and phase equilibria of binary fluids inÂmesopores. Adsorption, 2011, 17, 69-74.	3.0	0
78	Diffusion of cyclohexane in native and surface-modified mesoporous glasses. Adsorption, 2011, 17, 93-99.	3.0	5
79	The Impact of Mesopores on Mass Transfer in Nanoporous Materials: Evidence of Diffusion Measurement by NMR. Chemie-Ingenieur-Technik, 2011, 83, 166-176.	0.8	38
80	Guest Diffusion in Binderless Highâ€Performance NaX Molecular Sieves. Chemie-Ingenieur-Technik, 2011, 83, 2251-2259.	0.8	4
81	The evidence of NMR diffusometry on pore space heterogeneity in activated carbon. Microporous and Mesoporous Materials, 2011, 141, 184-191.	4.4	11
82	Dynamics of water diffusion in mesoporous zeolites. Microporous and Mesoporous Materials, 2011, 142, 236-244.	4.4	62
83	Structural characterization of porous solids by simultaneously monitoring the low-temperature phase equilibria and diffusion of intrapore fluids using nuclear magnetic resonance. New Journal of Physics, 2011, 13, 015008.	2.9	18
84	Role of stringlike, supramolecular assemblies in reentrant supernematic liquid crystals. Physical Review E, 2011, 83, 051704.	2.1	9
85	Probing Pore Connectivity in Random Porous Materials by Scanning Freezing and Melting Experiments. Langmuir, 2010, 26, 6380-6385.	3.5	29
86	A new view of diffusion in nanoporous materials. Chemie-Ingenieur-Technik, 2010, 82, 779-804.	0.8	57
87	Entropy-Driven Enhanced Self-Diffusion in Confined Reentrant Supernematics. Physical Review Letters, 2010, 105, 227802.	7.8	18
88	Comment on â€œComputer Simulation of Static and Dynamic Properties During Transient Sorption of Fluids in Mesoporous Materialsâ€• Journal of Physical Chemistry C, 2010, 114, 9187-9188.	3.1	0
89	Comment on â€œSingle-File Diffusion of Confined Water Inside SWNTs: An NMR Studyâ€• ACS Nano, 2010, 4, 3537-3537.	14.6	9
90	Charge transport and diffusion of ionic liquids in nanoporous silica membranes. Physical Chemistry Chemical Physics, 2010, 12, 13798.	2.8	109

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91	Understanding adsorption and desorption processes in mesoporous materials with independent disordered channels. Physical Review E, 2009, 80, 031607.	2.1	67
92	Pulsed field gradient NMR study of surface diffusion in mesoporous adsorbents. Microporous and Mesoporous Materials, 2009, 125, 58-62.	4.4	30
93	Correlating phase behaviour and diffusion in mesopores: perspectives revealed by pulsed field gradient NMR. Physical Chemistry Chemical Physics, 2009, 11, 2833.	2.8	83
94	Tracing pore connectivity and architecture in nanostructured silica SBA-15. Microporous and Mesoporous Materials, 2008, 110, 37-40.	4.4	36
95	Normal and anomalous diffusion of non-interacting particles in linear nanopores. European Physical Journal: Special Topics, 2008, 161, 109-120.	2.6	10
96	Estimation of pore sizes in porous silicon by scanning electron microscopy and NMR cryoporometry. Journal of Surface Investigation, 2008, 2, 919-922.	0.5	9
97	Characterization of pore size distribution in porous silicon by NMR cryoporosimetry and adsorption methods. Colloid Journal, 2008, 70, 507-514.	1.3	29
98	Probing Memory Effects in Confined Fluids via Diffusion Measurements. Langmuir, 2008, 24, 6429-6432.	3.5	56
99	Understanding capillary condensation and hysteresis in porous silicon: Network effects within independent pores. Physical Review E, 2008, 78, 060601.	2.1	80
100	Freezing of fluids in disordered mesopores. Journal of Chemical Physics, 2008, 129, 154702.	3.0	30
101	Diffusion of guest molecules in MCM-41 agglomerates. Journal of Chemical Physics, 2007, 126, 054705.	3.0	13
102	Freezing and melting transitions of liquids in mesopores with ink-bottle geometry. New Journal of Physics, 2007, 9, 272-272.	2.9	51
103	Temperature effects on phase equilibrium and diffusion in mesopores. Physical Review E, 2007, 75, 041202.	2.1	35
104	Direct Assessment of Transport Properties of Supercritical Fluids Confined to Nanopores. Journal of the American Chemical Society, 2007, 129, 10344-10345.	13.7	38
105	Dynamical aspects of the adsorption hysteresis phenomenon. Magnetic Resonance Imaging, 2007, 25, 481-484.	1.8	11
106	Diffusion hysteresis in mesoporous materials. European Physical Journal: Special Topics, 2007, 141, 107-112.	2.6	17
107	Diffusion processes in mesoporous adsorbents probed by NMR. Adsorption, 2007, 13, 239-245.	3.0	12
108	Supercritical fluids in mesoporesâ€"new insight using NMR. Adsorption, 2007, 13, 197-200.	3.0	10

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109	Porous Materials. , 2006, , 231-250.		2
110	Exploration of molecular dynamics during transient sorption of fluids in mesoporous materials. Nature, 2006, 443, 965-968.	27.8	218
111	Orientational ordering of linearn-alkanes in silicon nanotubes. Physical Review E, 2006, 73, 051605.	2.1	28
112	Molecular dynamics under confinement to one dimension: options of measurement and accessible information. New Journal of Physics, 2005, 7, 15-15.	2.9	42
113	Concentration-dependent self-diffusion of adsorbates in mesoporous materials. Magnetic Resonance Imaging, 2005, 23, 209-214.	1.8	24
114	The Role of Mesopores in Intracrystalline Transport in USY Zeolite:Â PFG NMR Diffusion Study on Various Length Scales. Journal of the American Chemical Society, 2005, 127, 13055-13059.	13.7	211
115	Surface Self-Diffusion of Organic Molecules Adsorbed in Porous Silicon. Journal of Physical Chemistry B, 2005, 109, 5746-5752.	2.6	40
116	Concentration-dependent self-diffusion of liquids in nanopores: A nuclear magnetic resonance study. Journal of Chemical Physics, 2004, 120, 11804-11814.	3.0	83
117	Comparison of NMR Cryoporometry, Mercury Intrusion Porosimetry, and DSC Thermoporosimetry in Characterizing Pore Size Distributions of Compressed Finely Ground Calcium Carbonate Structures. Industrial & Engineering Chemistry Research, 2004, 43, 7920-7927.	3.7	127
118	Liquidâ€“liquid phase separation in micropores. Current Applied Physics, 2004, 4, 370-372.	2.4	4
119	NMR magnetization transfer as a tool for characterization of nanoporous materials. Magnetic Resonance Imaging, 2003, 21, 299-303.	1.8	9
120	Low-temperature phase separation of a binary liquid mixture in porous materials studied by cryoporometry and pulsed-field-gradient NMR. Physical Review E, 2002, 66, 031508.	2.1	27
121	Phase separation of a binary liquid mixture in porous media studied by nuclear magnetic resonance cryoporometry. Journal of Chemical Physics, 2002, 116, 1072-1076.	3.0	32
122	The morphology of coexisting liquid and frozen phases in porous materials as revealed by exchange of nuclear spin magnetization followed by 1H nuclear magnetic resonance. Journal of Chemical Physics, 2002, 117, 2307-2316.	3.0	63
123	Adsorption Isotherm and Aggregate Properties of Fluorosurfactants on Alumina Measured by 19F NMR. Langmuir, 2002, 18, 8096-8101.	3.5	15
124	Time dependent self-diffusion coefficient of molecules in porous media. Journal of Chemical Physics, 2001, 114, 452.	3.0	82
125	Self-diffusion of water and oil in peanuts investigated by PFG NMR. Magnetic Resonance Imaging, 1998, 16, 583-586.	1.8	20
126	Molecular exchange processes in partially filled porous glass as seen with NMR diffusometry. Physical Review E, 1997, 55, 2664-2671.	2.1	66

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127	LÃ©vy walks of strong adsorbates on surfaces: Computer simulation and spin-lattice relaxation. Physical Review E, 1997, 56, 4371-4375.	2.1	41
128	Peculiarities of self-diffusion of alkane molecules in kaolinite. Applied Magnetic Resonance, 1991, 2, 83-91.	1.2	21