

Roland Böhmer

List of Publications by Year in descending order

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111
papers

6,718
citations

136950

32
h-index

60623

81
g-index

111
all docs

111
docs citations

111
times ranked

3651
citing authors

#	ARTICLE	IF	CITATIONS
1	Nonexponential relaxations in strong and fragile glass formers. <i>Journal of Chemical Physics</i> , 1993, 99, 4201-4209.	3.0	2,192
2	Correlations of the nonexponentiality and state dependence of mechanical relaxations with bond connectivity in Ge-As-Se supercooled liquids. <i>Physical Review B</i> , 1992, 45, 10091-10094.	3.2	484
3	Nonresonant Spectral Hole Burning in the Slow Dielectric Response of Supercooled Liquids. <i>Science</i> , 1996, 274, 752-754.	12.6	326
4	Dynamics of supercooled liquids and glassy solids. <i>Progress in Nuclear Magnetic Resonance Spectroscopy</i> , 2001, 39, 191-267.	7.5	275
5	Water's second glass transition. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2013, 110, 17720-17725.	7.1	243
6	Structure and dynamics of monohydroxy alcohols—Milestones towards their microscopic understanding, 100 years after Debye. <i>Physics Reports</i> , 2014, 545, 125-195.	25.6	221
7	Solid-state Li NMR with applications to the translational dynamics in ion conductors. <i>Progress in Nuclear Magnetic Resonance Spectroscopy</i> , 2007, 50, 87-174.	7.5	213
8	Nuclear-Magnetic-Resonance Measurements Reveal the Origin of the Debye Process in Monohydroxy Alcohols. <i>Physical Review Letters</i> , 2010, 105, 258303.	7.8	158
9	Colloquium: Water's controversial glass transitions. <i>Reviews of Modern Physics</i> , 2016, 88, .	45.6	146
10	Radio-frequency dielectric measurements at temperatures from 10 to 450 K. <i>Journal of Applied Physics</i> , 1989, 65, 901-904.	2.5	114
11	Shear-Modulus Investigations of Monohydroxy Alcohols: Evidence for a Short-Chain-Polymer Rheological Response. <i>Physical Review Letters</i> , 2014, 112, 098301.	7.8	98
12	Reorientations in supercooled glycerol studied by two-dimensional time-domain deuteron nuclear magnetic resonance spectroscopy. <i>Journal of Chemical Physics</i> , 1998, 109, 241-248.	3.0	95
13	High-frequency dielectric spectroscopy on glycerol. <i>Europhysics Letters</i> , 1996, 33, 611-616.	2.0	91
14	Nanoscale heterogeneity in glass-forming liquids: experimental advances. <i>Current Opinion in Solid State and Materials Science</i> , 1998, 3, 378-385.	11.5	85
15	Ion transport in the fragile glass former $3\text{KNO}_3\text{-}2\text{Ca}(\text{NO}_3)_2$. <i>Physical Review E</i> , 1996, 54, 676-684.	2.1	82
16	Hydrogen-Bond Equilibria and Lifetimes in a Monohydroxy Alcohol. <i>Physical Review Letters</i> , 2011, 107, 118304.	7.8	82
17	Rotational correlation functions and apparently enhanced translational diffusion in a free-energy landscape model for the β relaxation in glass-forming liquids. <i>Physical Review E</i> , 1998, 57, 4398-4410.	2.1	76
18	Liquid 1-propanol studied by neutron scattering, near-infrared, and dielectric spectroscopy. <i>Journal of Chemical Physics</i> , 2014, 140, 124501.	3.0	68

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19	Debye relaxation and 250 K anomaly in glass forming monohydroxy alcohols. <i>Journal of Chemical Physics</i> , 2013, 138, 094505.	3.0	59
20	Anomalously large isotope effect in the glass transition of water. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2014, 111, 17402-17407.	7.1	57
21	Evolution of excess wing and β -process in simple glass formers. <i>Journal of Chemical Physics</i> , 2009, 131, 184510.	3.0	56
22	Diluting the hydrogen bonds in viscous solutions of n-butanol with n-bromobutane: A dielectric study. <i>Journal of Chemical Physics</i> , 2008, 128, 154520.	3.0	53
23	Nuclear magnetic resonance and dielectric spectroscopy of a simple supercooled liquid: 2-methyl tetrahydrofuran. <i>Journal of Chemical Physics</i> , 2003, 118, 7431.	3.0	49
24	Structural relaxation of the fragile glass-former propylene carbonate studied by nuclear magnetic resonance. <i>Journal of Chemical Physics</i> , 2000, 112, 9455-9462.	3.0	44
25	Nuclear magnetic resonance and dielectric noise study of spectral densities and correlation functions in the glass forming monoalcohol 2-ethyl-1-hexanol. <i>Journal of Chemical Physics</i> , 2011, 135, 174511.	3.0	43
26	Oscillatory shear and high-pressure dielectric study of 5-methyl-3-heptanol. <i>Colloid and Polymer Science</i> , 2014, 292, 1913-1921.	2.1	42
27	Experimental studies of Debye-like process and structural relaxation in mixtures of 2-ethyl-1-hexanol and 2-ethyl-1-hexyl bromide. <i>Journal of Chemical Physics</i> , 2012, 137, 144502.	3.0	40
28	Advances in the study of supercooled water. <i>European Physical Journal E</i> , 2021, 44, 143.	1.6	40
29	Shear and dielectric responses of propylene carbonate, tripropylene glycol, and a mixture of two secondary amides. <i>Journal of Chemical Physics</i> , 2012, 137, 064508.	3.0	37
30	Diluting the hydrogen bonds in viscous solutions of n-butanol with n-bromobutane: II. A comparison of rotational and translational motions. <i>Journal of Chemical Physics</i> , 2011, 134, 064512.	3.0	35
31	Experiments indicating a second hydrogen ordered phase of ice VI. <i>Chemical Science</i> , 2018, 9, 4224-4234.	7.4	35
32	Reorientational dynamics in simple supercooled liquids. <i>Journal of Non-Crystalline Solids</i> , 1998, 235-237, 121-127.	3.1	34
33	Silver ion dynamics in silver borate glasses: spectra and multiple-time correlation functions from $^{109}\text{Ag-NMR}$. <i>Solid State Nuclear Magnetic Resonance</i> , 2005, 27, 122-131.	2.3	31
34	Amorphous polymorphs in ice investigated by inelastic neutron scattering. <i>Physica B: Condensed Matter</i> , 1997, 241-243, 897-902.	2.7	30
35	Ionic transport and heat capacity of glass-forming metal–nitrate mixtures. <i>Journal of Non-Crystalline Solids</i> , 1997, 220, 93-101.	3.1	28
36	Broadband dynamics in neat 4-methyl-3-heptanol and in mixtures with 2-ethyl-1-hexanol. <i>Journal of Chemical Physics</i> , 2013, 139, 134503.	3.0	28

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37	Positive and Negative Mixed Glass Former Effects in Sodium Borosilicate and Borophosphate Glasses Studied by ²³ Na NMR. <i>Journal of Physical Chemistry B</i> , 2016, 120, 4482-4495.	2.6	28
38	Translational and reorientational dynamics in deep eutectic solvents. <i>Journal of Chemical Physics</i> , 2021, 154, 154501.	3.0	27
39	Mixed Debye-type liquids studied by dielectric, shear mechanical, nuclear magnetic resonance, and near-infrared spectroscopy. <i>Journal of Non-Crystalline Solids</i> , 2015, 407, 384-391.	3.1	26
40	Generic Primary Mechanical Response of Viscous Liquids. <i>Physical Review Letters</i> , 2017, 119, 248001.	7.8	25
41	Systematic differences in the relaxation stretching of polar molecular liquids probed by dielectric vs magnetic resonance and photon correlation spectroscopy. <i>Journal of Chemical Physics</i> , 2020, 153, 124510.	3.0	25
42	Relaxation dynamics and transformation kinetics of deeply supercooled water: Temperature, pressure, doping, and proton/deuteron isotope effects. <i>Journal of Chemical Physics</i> , 2017, 147, 034506.	3.0	23
43	Second-order quadrupole interaction based detection of ultra-slow motions: Tensor operator framework for central-transition spectroscopy and the dynamics in hexagonal ice as an experimental example. <i>Journal of Magnetic Resonance</i> , 2014, 249, 141-149.	2.1	22
44	Dynamics enhanced by HCl doping triggers 60% Pauling entropy release at the ice XII↔XIV transition. <i>Nature Communications</i> , 2015, 6, 7349.	12.8	22
45	The methyl group as a built-in probe of the glassy dynamics in propylene carbonate. <i>Physical Chemistry Chemical Physics</i> , 2001, 3, 4022-4028.	2.8	21
46	Connecting structurally and dynamically detected signatures of supramolecular Debye liquids. <i>Journal of Chemical Physics</i> , 2017, 147, 234501.	3.0	21
47	Energy landscape in molecular glasses probed by high-resolution dielectric experiments. <i>Physical Review B</i> , 2010, 82, .	3.2	20
48	Two-dimensional second-order quadrupolar exchange powder spectra for nuclei with half-integer spins. Calculations and an experimental example using oxygen NMR. <i>Solid State Nuclear Magnetic Resonance</i> , 2015, 71, 96-107.	2.3	20
49	Glass Transitions and Relaxation Phenomena in Orientational Glasses and Supercooled Plastic Crystals. , 1994, , 659-696.		20
50	² H NMR studies of supercooled and glassy aspirin. <i>Journal of Non-Crystalline Solids</i> , 2007, 353, 3788-3795.	3.1	19
51	Relaxation in the glass former acetylsalicylic acid studied by deuteron magnetic resonance and dielectric spectroscopy. <i>Physical Review E</i> , 2006, 74, 021506.	2.1	18
52	Water dynamics on the hydrate lattice of a tetrabutyl ammonium bromide semicathrate. <i>Journal of Chemical Physics</i> , 2009, 130, 104505.	3.0	18
53	Supramolecular x-ray signature of susceptibility amplification in hydrogen-bonded liquids. <i>Physical Review E</i> , 2014, 90, 052807.	2.1	18
54	Structure and dynamics of short-chain polymerized ionic liquids. <i>Journal of Chemical Physics</i> , 2019, 151, 034903.	3.0	18

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55	Isotope effects on the dynamics of a supercooled van der Waals liquid. <i>Europhysics Letters</i> , 2000, 49, 748-753.	2.0	17
56	Dielectric relaxation processes in solid and supercooled liquid solutions of acetaminophen and nifedipine. <i>Journal of Physics Condensed Matter</i> , 2007, 19, 205134.	1.8	17
57	The lithium ion conductor $\hat{\rho}^2$ -spodumene: an orientational glass. <i>Zeitschrift für Physik B-Condensed Matter</i> , 1996, 100, 583-593.	1.1	16
58	Water dynamics on ice and hydrate lattices studied by second-order central-line stimulated-echo oxygen-17 nuclear magnetic resonance. <i>Journal of Chemical Physics</i> , 2015, 143, 214201.	3.0	16
59	Dynamics in Supercooled Secondary Amide Mixtures: Dielectric and Hydrogen Bond Specific Spectroscopies. <i>Journal of Physical Chemistry B</i> , 2015, 119, 15769-15779.	2.6	16
60	Doping-enhanced dipolar dynamics in ice V as a precursor of hydrogen ordering in ice XIII. <i>Physical Review B</i> , 2016, 94, .	3.2	16
61	Two-site jumps in dimethyl sulfone studied by one- and two-dimensional ^{17}O NMR spectroscopy. <i>Journal of Magnetic Resonance</i> , 2018, 288, 84-94.	2.1	16
62	Local and global dynamics of the viscous ion conductors $2\text{Ca}(\text{NO}_3)_2\cdot 3\text{KNO}_3$ and $2\text{Ca}(\text{NO}_3)_2\cdot 3\text{RbNO}_3$ probed by ^{87}Rb nuclear magnetic resonance and shear rheology. <i>Journal of Chemical Physics</i> , 2019, 150, 194503.	3.0	16
63	Deeply supercooled aqueous LiCl solution studied by frequency-resolved shear rheology. <i>Journal of Chemical Physics</i> , 2019, 150, 234505.	3.0	16
64	Nuclear Spin Relaxation in Viscous Liquids: Relaxation Stretching of Single-Particle Probes. <i>Journal of Physical Chemistry B</i> , 2021, 125, 13519-13532.	2.6	16
65	Communication: Correlation of terminal relaxation rate and viscosity enhancement in supramolecular small-molecule liquids. <i>Journal of Chemical Physics</i> , 2018, 148, 221102.	3.0	15
66	Nature of Water's Second Glass Transition Elucidated by Doping and Isotope Substitution Experiments. <i>Physical Review X</i> , 2019, 9, .	8.9	15
67	Chapter 7. NMR Studies of Ionic Dynamics in Solids. <i>New Developments in NMR</i> , 2018, , 193-230.	0.1	15
68	Slow and fast methyl group rotations in fragile glass-formers studied by NMR. <i>Chemical Physics Letters</i> , 2000, 328, 257-262.	2.6	14
69	Stimulated echoes and two-dimensional nuclear magnetic resonance spectra for solids with simple line shapes. <i>Journal of Chemical Physics</i> , 2008, 128, 114506.	3.0	14
70	Tuning the dynamics of imidazolium-based ionic liquids via hydrogen bonding. I. The viscous regime. <i>Journal of Chemical Physics</i> , 2020, 153, 194501.	3.0	14
71	Transient Nonlinear Response of Dynamically Decoupled Ionic Conductors. <i>Physical Review Letters</i> , 2018, 121, 064503.	7.8	13
72	Dynamics in Glass Forming Sulfuric and Nitric Acid Hydrates. <i>Journal of Physical Chemistry B</i> , 2013, 117, 12164-12174.	2.6	12

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73	Deuteron magnetic resonance and dielectric studies of guest reorientation and water dynamics in six clathrate hydrates containing ring-type guests. <i>Journal of Non-Crystalline Solids</i> , 2015, 407, 431-440.	3.1	12
74	Coexistence of two structural relaxation processes in monohydroxy alcohol-alkyl halogen mixtures: Dielectric and rheological studies. <i>Journal of Chemical Physics</i> , 2018, 149, 044509.	3.0	12
75	Slow processes in viscous liquids: Stress and structural relaxation, chemical reaction freezing, crystal nucleation and microemulsion arrest, in relation to liquid fragility. <i>AIP Conference Proceedings</i> , 1992, , .	0.4	11
76	Deuteron and carbon magnetic resonance studies of supercooled liquid and glassy salol. <i>Journal of Chemical Physics</i> , 2000, 112, 5884-5892.	3.0	11
77	Linear and nonlinear shear studies reveal supramolecular responses in supercooled monohydroxy alcohols with faint dielectric signatures. <i>Journal of Chemical Physics</i> , 2019, 150, 104501.	3.0	11
78	Molecular Cross-correlations Govern Structural Rearrangements in a Nonassociating Polar Glass Former. <i>Physical Review Letters</i> , 2022, 128, .	7.8	11
79	Structural relaxation in a molten salt probed by time-dependent dc conductivity measurements. <i>Journal of Non-Crystalline Solids</i> , 1997, 212, 89-94.	3.1	10
80	⁸⁷ Rb NMR Studies of Molten and Glassy 2Ca(NO ₃) ₂ ·3RbNO ₃ . <i>Journal of Physical Chemistry B</i> , 1999, 103, 4109-4112.	2.6	10
81	Molecular Motions in Supercooled and Glassy Ibuprofen: Deuteron Magnetic Resonance and High-Resolution Rheology Study. <i>Journal of Physical Chemistry B</i> , 2015, 119, 5087-5095.	2.6	10
82	Thermodynamic and kinetic isotope effects on the order-disorder transition of ice XIV to ice XII. <i>Physical Chemistry Chemical Physics</i> , 2018, 20, 21607-21616.	2.8	10
83	Amorphous and crystalline ices studied by dielectric spectroscopy. <i>Journal of Chemical Physics</i> , 2019, 150, 244501.	3.0	10
84	The relaxation behavior of supercooled and glassy imidacloprid. <i>Journal of Chemical Physics</i> , 2021, 155, 174502.	3.0	10
85	Vibrational study of anharmonicity, supramolecular structure, and hydrogen bonding in two octanol isomers. <i>Vibrational Spectroscopy</i> , 2015, 79, 59-66.	2.2	9
86	Isomeric effects in structure formation and dielectric dynamics of different octanols. <i>Physical Chemistry Chemical Physics</i> , 2021, 23, 24211-24221.	2.8	9
87	Experimental evidence for two distinct deeply supercooled liquid states of water – Response to – Comment on – Water's second glass transition – , by G.P. Johari, <i>Thermochim. Acta</i> (2015). <i>Thermochimica Acta</i> , 2015, 617, 200-207.	2.7	8
88	Communication: Heterogeneous water dynamics on a clathrate hydrate lattice detected by multidimensional oxygen nuclear magnetic resonance. <i>Journal of Chemical Physics</i> , 2017, 146, .	3.0	8
89	Reorientational dynamics of trimethoxyboroxine: A molecular glass former studied by dielectric spectroscopy and ¹¹ B nuclear magnetic resonance. <i>Journal of Chemical Physics</i> , 2020, 152, 034503.	3.0	8
90	Dielectric study of the viscous and glassy states of a binary, nifedipine-based pharmaceutical alloy. <i>Journal of Non-Crystalline Solids</i> , 2006, 352, 4459-4463.	3.1	7

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91	Deuteron nuclear magnetic resonance and dielectric study of host and guest dynamics in KOH-doped tetrahydrofuran clathrate hydrate. <i>Physical Review B</i> , 2010, 81, .	3.2	7
92	Dielectric study of orientational disorder in (CO ₂) _{1-x} (N ₂ O) _x mixed crystals. <i>Physical Review B</i> , 1990, 42, 1439-1443.	3.2	6
93	Communication: Nonadditive dielectric susceptibility spectra of associating liquids. <i>Journal of Chemical Physics</i> , 2017, 146, 101101.	3.0	6
94	Interplay of defect doping and Bernal-Fowler rules: A simulation study of the dynamics on ice lattices. <i>Physical Review B</i> , 2017, 96, .	3.2	6
95	Scaling of Suprastructure and Dynamics in Pure and Mixed Debye Liquids. <i>Advances in Dielectrics</i> , 2018, , 121-171.	1.2	6
96	First-Order and Third-Order Nonlinearities from Medium-Amplitude Oscillatory Shearing of Hydrogen-Bonded Polymers and Other Viscoelastic Materials. <i>Macromolecules</i> , 2019, 52, 8690-8704.	4.8	6
97	Nonlinear electrical and rheological spectroscopies identify structural and supramolecular relaxations in a model peptide. <i>Soft Matter</i> , 2019, 15, 4334-4345.	2.7	6
98	Suppression of Orientational Correlations in the Viscous-Liquid State of Hyperquenched Pressure-Densified Glycerol. <i>Physical Review Letters</i> , 2020, 125, 065503.	7.8	5
99	Rheology based estimates of self- and collective diffusivities in viscous liquids. <i>Journal of Chemical Physics</i> , 2021, 155, 011101.	3.0	5
100	The relationship between charge and molecular dynamics in viscous acid hydrates. <i>Journal of Chemical Physics</i> , 2021, 155, 014505.	3.0	5
101	Dynamics of Glass Forming Ammonia Hydrates. <i>Journal of Physical Chemistry B</i> , 2013, 117, 12157-12163.	2.6	4
102	Salty Water in KOH-Doped Hexagonal Ice: a Proton and Deuteron NMR Study. <i>Applied Magnetic Resonance</i> , 2013, 44, 203-215.	1.2	4
103	Deuteron magnetic resonance study of glycine deep eutectic solvents: Selective detection of choline and glycerol dynamics. <i>Journal of Chemical Physics</i> , 2022, 156, .	3.0	4
104	First- and third-order shear nonlinearities across the structural relaxation peak of the deeply supercooled pharmaceutical liquid indomethacin. <i>Journal of Chemical Physics</i> , 2021, 155, 134901.	3.0	3
105	Oxygen NMR of high-density and low-density amorphous ice. <i>Journal of Chemical Physics</i> , 2022, 156, 084503.	3.0	3
106	Predicting Dielectric and Shear-Rheology Properties of Glass-Forming Pharmaceutical Liquids from Each Other: Applications and Limitations. <i>Molecular Pharmaceutics</i> , 2022, 19, 1586-1597.	4.6	3
107	From Ultraslow to Extremely Fast Dynamics in Sodium Nitrate: an 17O NMR Study. <i>Applied Magnetic Resonance</i> , 2020, 51, 597-620.	1.2	2
108	Deuteron nuclear magnetic resonance and dielectric studies of molecular reorientation and charge transport in succinonitrile-glutaronitrile plastic crystals. <i>Journal of Non-Crystalline Solids: X</i> , 2022, 14, 100097.	1.2	2

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109	Time Scales of the Quasitetrahedral Motion in KMnO_4 Observed by ^{17}O Central-Transition NMR Spectroscopy. Journal of Physical Chemistry C, 2020, 124, 16202-16208.	3.1	1
110	How the cation size impacts on the relaxational and diffusional dynamics of supercooled butylammonium-based ionic liquids: DPEBA TFSI versus BTMA TFSI . Zeitschrift Fur Physikalische Chemie, 2021, .	2.8	1
111	Isotope effects on the dynamics of amorphous ices and aqueous phosphoric acid solutions. Physical Chemistry Chemical Physics, 2022, 24, 14846-14856.	2.8	1