Mathieu Bauchy

List of Publications by Year
in descending order

246 papers	7,651 citations	50276 46 h-index	82547 72 g-index
250 all docs	250 docs citations	250 times ranked	4080 citing authors

#	Article	IF	Citations
1	Combinatorial molecular optimization of cement hydrates. Nature Communications, 2014, 5, 4960.	12.8	358
2	Mesoscale texture of cement hydrates. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 2029-2034.	7.1	193
3	Effect of Calcined Hard Kaolin Dosage on the Strength Development of CPB of Fine Tailings with Sulphide. Advances in Materials Science and Engineering, 2017, 2017, 1-7.	1.8	166
4	Experimental investigation on the relationship between pore characteristics and unconfined compressive strength of cemented paste backfill. Construction and Building Materials, 2018, 179, 254-264.	7.2	166
5	Fracture toughness of calciumâ€“silicateâ€“hydrate from molecular dynamics simulations. Journal of Non-Crystalline Solids, 2015, 419, 58-64.	3.1	154
6	Atomic scale foundation of temperature-dependent bonding constraints in network glasses and liquids. Journal of Non-Crystalline Solids, 2011, 357, 2530-2537.	3.1	131
7	Structural, vibrational, and elastic properties of a calcium aluminosilicate glass from molecular dynamics simulations: The role of the potential. Journal of Chemical Physics, 2014, 141, 024507.	3.0	124
8	Anomalous composition-dependent dynamics of nanoconfined water in the interlayer of disordered calcium-silicates. Journal of Chemical Physics, 2014, 140, 054515.	3.0	121
9	A new transferable interatomic potential for molecular dynamics simulations of borosilicate glasses. Journal of Non-Crystalline Solids, 2018, 498, 294-304.	3.1	121
10	Discovery of Ultra-Crack-Resistant Oxide Glasses with Adaptive Networks. Chemistry of Materials, 2017, 29, 5865-5876.	6.7	113
11	Cooling rate effects in sodium silicate glasses: Bridging the gap between molecular dynamics simulations and experiments. Journal of Chemical Physics, 2017, 147, 074501.	3.0	107
12	Direct Carbonation of Ca(OH)₂ Using Liquid and Supercritical CO₂: Implications for Carbon-Neutral Cementation. Industrial & Engineering Chemistry Research, 2015, 54, 8908-8918.	3.7	105
13	An experimental study on the early-age hydration kinetics of cemented paste backfill. Construction and Building Materials, 2019, 212, 283-294.	7.2	101
14	Predicting the dissolution kinetics of silicate glasses using machine learning. Journal of Non-Crystalline Solids, 2018, 487, 37-45.	3.1	100
15	Order and disorder in calciumâ€“silicateâ€“hydrate. Journal of Chemical Physics, 2014, 140, 214503.	3.0	99
16	Revisiting silica with ReaxFF: Towards improved predictions of glass structure and properties via reactive molecular dynamics. Journal of Non-Crystalline Solids, 2016, 443, 148-154.	3.1	97
17	Viscosity and viscosity anomalies of model silicates and magmas: A numerical investigation. Chemical Geology, 2013, 346, 47-56.	3.3	95
18	Rigidity Transition in Materials: Hardness is Driven by Weak Atomic Constraints. Physical Review Letters, 2015, 114, 125502.	7.8	93

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19	Numerical study on the pipe flow characteristics of the cemented paste backfill slurry considering hydration effects. Powder Technology, 2019, 343, 454-464.	4.2	89
20	Predicting the Youngâ€™s Modulus of Silicate Glasses using High-Throughput Molecular Dynamics Simulations and Machine Learning. Scientific Reports, 2019, 9, 8739.	3.3	86
21	Fracture toughness anomalies: Viewpoint of topological constraint theory. Acta Materialia, 2016, 121, 234-239.	7.9	84
22	Nanoscale Structure of Cement: Viewpoint of Rigidity Theory. Journal of Physical Chemistry C, 2014, 118, 12485-12493.	3.1	80
23	Angular rigidity in tetrahedral network glasses with changing composition. Physical Review B, 2011, 84, .	3.2	79
24	A dissolution-precipitation mechanism is at the origin of concrete creep in moist environments. Journal of Chemical Physics, 2016, 145, 054701.	3.0	77
25	Deciphering the atomic genome of glasses by topological constraint theory and molecular dynamics: A review. Computational Materials Science, 2019, 159, 95-102.	3.0	77
26	Structure, topology, rings, and vibrational and electronic properties of Ge<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mi>x</mml:mi></mml:msub></mml:math>Se<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mrow><mml:mn>1</mml:mn><mml:mo>â^’</mml:mo><mml:mi>x</mml:mi></mml:mrow></mml:msub></mml:math>glasses across the rigidity transition: A numerical study. Physical Review B, 2013, 88, .	3.2	76
27	Fracture toughness of a metalâ€“organic framework glass. Nature Communications, 2020, 11, 2593.	12.8	76
28	Topological Control on Silicatesâ€™ Dissolution Kinetics. Langmuir, 2016, 32, 4434-4439.	3.5	75
29	The filler effect: The influence of filler content and type on the hydration rate of tricalcium silicate. Journal of the American Ceramic Society, 2017, 100, 3316-3328.	3.8	70
30	Structural origin of high crack resistance in sodium aluminoborate glasses. Journal of Non-Crystalline Solids, 2017, 460, 54-65.	3.1	69
31	Structural, vibrational, and thermal properties of densified silicates: Insights from molecular dynamics. Journal of Chemical Physics, 2012, 137, 044510.	3.0	63
32	Compositional Thresholds and Anomalies in Connection with Stiffness Transitions in Network Glasses. Physical Review Letters, 2013, 110, 165501.	7.8	61
33	From pockets to channels: Density-controlled diffusion in sodium silicates. Physical Review B, 2011, 83, .	3.2	60
34	Densified network glasses and liquids with thermodynamically reversible and structurally adaptive behaviour. Nature Communications, 2015, 6, 6398.	12.8	60
35	Predicting the dissolution kinetics of silicate glasses by topology-informed machine learning. Npj Materials Degradation, 2019, 3, .	5.8	59
36	Predicting Young's modulus of oxide glasses with sparse datasets using machine learning. Journal of Non-Crystalline Solids, 2019, 524, 119643.	3.1	58

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37	New insights into the mechanism governing the elasticity of calcium silicate hydrate gels exposed to high temperature: A molecular dynamics study. Cement and Concrete Research, 2021, 141, 106333.	11.0	57
38	Anomalies of the first sharp diffraction peak in network glasses: Evidence for correlations with dynamic and rigidity properties. Physica Status Solidi (B): Basic Research, 2013, 250, 976-982.	1.5	56
39	Intrinsic Nano-Ductility of Glasses: The Critical Role of Composition. Frontiers in Materials, 2015, 2, .	2.4	55
40	Deep learning aided rational design of oxide glasses. Materials Horizons, 2020, 7, 1819-1827.	12.2	54
41	Transport Anomalies and Adaptative Pressure-Dependent Topological Constraints in Tetrahedral Liquids: Evidence for a Reversibility Window Analogue. Physical Review Letters, 2013, 110, 095501.	7.8	53
42	Stretched Exponential Relaxation of Glasses at Low Temperature. Physical Review Letters, 2015, 115, 165901.	7.8	53
43	Strength and hydration products of cemented paste backfill from sulphide-rich tailings using reactive MgO-activated slag as a binder. Construction and Building Materials, 2019, 203, 111-119.	7.2	53
44	Correlating the Network Topology of Oxide Glasses with their Chemical Durability. Journal of Physical Chemistry B, 2017, 121, 1139-1147.	2.6	52
45	Unique effects of thermal and pressure histories on glass hardness: Structural and topological origin. Journal of Chemical Physics, 2015, 143, 164505.	3.0	51
46	Topological Control on the Structural Relaxation of Atomic Networks under Stress. Physical Review Letters, 2017, 119, 035502.	7.8	51
47	An improved basis for characterizing the suitability of fly ash as a cement replacement agent. Journal of the American Ceramic Society, 2017, 100, 4785-4800.	3.8	48
48	Topological controls on the dissolution kinetics of glassy aluminosilicates. Journal of the American Ceramic Society, 2017, 100, 5521-5527.	3.8	48
49	Nanoductility in silicate glasses is driven by topological heterogeneity. Physical Review B, 2016, 93, .	3.2	47
50	Thermometer Effect: Origin of the Mixed Alkali Effect in Glass Relaxation. Physical Review Letters, 2017, 119, 095501.	7.8	47
51	Direct Experimental Evidence for Differing Reactivity Alterations of Minerals following Irradiation: The Case of Calcite and Quartz. Scientific Reports, 2016, 6, 20155.	3.3	46
52	The influence of filler type and surface area on the hydration rates of calcium aluminate cement. Construction and Building Materials, 2015, 96, 657-665.	7.2	44
53	Reactive Molecular Dynamics Simulations of Sodium Silicate Glasses â€" Toward an Improved Understanding of the Structure. International Journal of Applied Glass Science, 2017, 8, 276-284.	2.0	44
54	New insights into the solâ€"gel condensation of silica by reactive molecular dynamics simulations. Journal of Chemical Physics, 2018, 148, 234504.	3.0	44

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55	Machine learning for glass science and engineering: A review. Journal of Non-Crystalline Solids, 2021, 557, 119419.	3.1	44
56	Confined Water in Layered Silicates: The Origin of Anomalous Thermal Expansion Behavior in Calcium-Silicate-Hydrates. ACS Applied Materials & Interfaces, 2016, 8, 35621-35627.	8.0	43
57	Irradiation-induced topological transition in SiO2: Structural signature of networks' rigidity. Journal of Non-Crystalline Solids, 2017, 463, 25-30.	3.1	43
58	Revealing hidden medium-range order in amorphous materials using topological data analysis. Science Advances, 2020, 6, .	10.3	41
59	Effect of temperature on time-dependent rheological and compressive strength of fresh cemented paste backfill containing flocculants. Construction and Building Materials, 2021, 267, 121038.	7.2	41
60	Revealing the Effect of Irradiation on Cement Hydrates: Evidence of a Topological Self-Organization. ACS Applied Materials & Interfaces, 2017, 9, 32377-32385.	8.0	40
61	Nature of radiation-induced defects in quartz. Journal of Chemical Physics, 2015, 143, 024505.	3.0	38
62	Breaking the Limit of Microâ€Ductility in Oxide Glasses. Advanced Science, 2019, 6, 1901281.	11.2	38
63	Prediction of the Young's modulus of silicate glasses by topological constraint theory. Journal of Non-Crystalline Solids, 2019, 514, 15-19.	3.1	38
64	Structural, dynamic, electronic, and vibrational properties of flexible, intermediate, and stressed rigid As-Se glasses and liquids from first principles molecular dynamics. Journal of Chemical Physics, 2014, 141, 194506.	3.0	37
65	Effects of Irradiation on Albiteâ€™s Chemical Durability. Journal of Physical Chemistry A, 2017, 121, 7835-7845.	2.5	37
66	Study on hydration reaction and structure evolution of cemented paste backfill in early-age based on resistivity and hydration heat. Construction and Building Materials, 2021, 272, 121827.	7.2	37
67	Structure of As2Se3 and AsSe network glasses: Evidence for coordination defects and homopolar bonding. Journal of Non-Crystalline Solids, 2013, 377, 34-38.	3.1	36
68	Ion exchange strengthening and thermal expansion of glasses: Common origin and critical role of network connectivity. Journal of Non-Crystalline Solids, 2017, 455, 70-74.	3.1	36
69	Direct observation of pitting corrosion evolutions on carbon steel surfaces at the nano-to-micro-scales. Scientific Reports, 2018, 8, 7990.	3.3	36
70	Machine learning for glass science and engineering: A review. Journal of Non-Crystalline Solids: X, 2019, 4, 100036.	1.2	36
71	Experimental method to quantify the ring size distribution in silicate glasses and simulation validation thereof. Science Advances, 2021, 7, .	10.3	36
72	Fragility and configurational heat capacity of calcium aluminosilicate glass-forming liquids. Journal of Non-Crystalline Solids, 2017, 461, 24-34.	3.1	35

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73	Irradiation- vs. vitrification-induced disordering: The case of ?-quartz and glassy silica. Journal of Chemical Physics, 2017, 146, 204502.	3.0	35
74	The hydrophilic-to-hydrophobic transition in glassy silica is driven by the atomic topology of its surface. Journal of Chemical Physics, 2018, 148, 074503.	3.0	35
75	Effects of polydispersity and disorder on the mechanical properties of hydrated silicate gels. Journal of the Mechanics and Physics of Solids, 2019, 122, 555-565.	4.8	35
76	A numerical analysis of the stress distribution in backfilled stopes considering nonplanar interfaces between the backfill and rock walls. International Journal of Geotechnical Engineering, 2016, 10, 271-282.	2.0	34
77	Numerical Analysis of Stress Distribution in Backfilled Stopes Considering Interfaces between the Backfill and Rock Walls. International Journal of Geomechanics, 2017, 17, .	2.7	34
78	Dissolution Kinetics of Hot Compressed Oxide Glasses. Journal of Physical Chemistry B, 2017, 121, 9063-9072.	2.6	33
79	Modifier field strength effects on densification behavior and mechanical properties of alkali aluminoborate glasses. Physical Review Materials, 2017, 1, .	2.4	33
80	Cycling through the glass transition: Evidence for reversibility windows and dynamic anomalies. Physical Review B, 2015, 92, .	3.2	32
81	Electronic Origin of Doping-Induced Enhancements of Reactivity: Case Study of Tricalcium Silicate. Journal of Physical Chemistry C, 2015, 119, 25991-25999.	3.1	32
82	The influences of soft and stiff inclusions on the mechanical properties of cementitious composites. Cement and Concrete Composites, 2016, 71, 153-165.	10.7	32
83	Structural Compromise between High Hardness and Crack Resistance in Aluminoborate Glasses. Journal of Physical Chemistry B, 2018, 122, 6287-6295.	2.6	32
84	The role of the network-modifier's field-strength in the chemical durability of aluminoborate glasses. Journal of Non-Crystalline Solids, 2019, 505, 279-285.	3.1	32
85	Misfit Stresses Caused by Atomic Size Mismatch: The Origin of Doping-Induced Destabilization of Dicalcium Silicate. Crystal Growth and Design, 2016, 16, 3124-3132.	3.0	31
86	Hardness of silicate glasses: Atomic-scale origin of the mixed modifier effect. Journal of Non-Crystalline Solids, 2018, 489, 16-21.	3.1	31
87	Topological Origins of the Mixed Alkali Effect in Glass. Journal of Physical Chemistry B, 2019, 123, 7482-7489.	2.6	31
88	New insights into the indentation size effect in silicate glasses. Journal of Non-Crystalline Solids, 2019, 521, 119494.	3.1	31
89	Cooling rate effects on the structure of 45S5 bioglass: Insights from experiments and simulations. Journal of Non-Crystalline Solids, 2020, 534, 119952.	3.1	31
90	Bond Switching in Densified Oxide Glass Enables Record-High Fracture Toughness. ACS Applied Materials & Interfaces, 2021, 13, 17753-17765.	8.0	31

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91	Revisiting the Dependence of Poissonâ€™s Ratio on Liquid Fragility and Atomic Packing Density in Oxide Glasses. Materials, 2019, 12, 2439.	2.9	30
92	Structural dependence of chemical durability in modified aluminoborate glasses. Journal of the American Ceramic Society, 2019, 102, 1157-1168.	3.8	29
93	Revisiting the Makishimaâ€“Mackenzie model for predicting the young's modulus of oxide glasses. Acta Materialia, 2020, 195, 252-262.	7.9	28
94	Artificial intelligence and machine learning in glass science and technology: 21 challenges for the 21st century. International Journal of Applied Glass Science, 2021, 12, 277-292.	2.0	28
95	Stability analyses of vertically exposed cemented backfill: A revisit to Mitchellâ€™s physical model tests. International Journal of Mining Science and Technology, 2016, 26, 1135-1144.	10.3	27
96	Nanoengineering of concrete via topological constraint theory. MRS Bulletin, 2017, 42, 50-54.	3.5	27
97	Enthalpy Landscape Dictates the Irradiation-Induced Disordering of Quartz. Physical Review X, 2017, 7, .	8.9	27
98	Irradiation-driven amorphous-to-glassy transition in quartz: The crucial role of the medium-range order in crystallization. Physical Review Materials, 2017, 1, .	2.4	27
99	Atomic picture of structural relaxation in silicate glasses. Applied Physics Letters, 2019, 114, .	3.3	26
100	Analytical and experimental investigation of the relationship between spread and yield stress in the mini-cone test for cemented tailings backfill. Construction and Building Materials, 2020, 260, 119770.	7.2	26
101	Can a simple topological-constraints-based model predict the initial dissolution rate of borosilicate and aluminosilicate glasses?. Npj Materials Degradation, 2020, 4, .	5.8	26
102	Atomistic origin of the passivation effect in hydrated silicate glasses. Npj Materials Degradation, 2019, 3, .	5.8	25
103	Controls on CO₂ Mineralization Using Natural and Industrial Alkaline Solids under Ambient Conditions. ACS Sustainable Chemistry and Engineering, 2021, 9, 10727-10739.	6.7	25
104	The Influence of Water Activity on the Hydration Rate of Tricalcium Silicate. Journal of the American Ceramic Society, 2016, 99, 2481-2492.	3.8	24
105	Machine Learning Enables Rapid Screening of Reactive Fly Ashes Based on Their Network Topology. ACS Sustainable Chemistry and Engineering, 2021, 9, 2639-2650.	6.7	24
106	Percolative heterogeneous topological constraints and fragility in glass-forming liquids. Europhysics Letters, 2013, 104, 56002.	2.0	23
107	Densityâ€“stiffness scaling in minerals upon disordering: Irradiation vs. vitrification. Acta Materialia, 2019, 166, 611-617.	7.9	23
108	Sub-critical crack growth in silicate glasses: Role of network topology. Applied Physics Letters, 2015, 107, .	3.3	23

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109	Topological optimization of cementitious binders: Advances and challenges. Cement and Concrete Composites, 2019, 101, 5-14.	10.7	22
110	An Investigation of the Uniaxial Compressive Strength of a Cemented Hydraulic Backfill Made of Alluvial Sand. Minerals (Basel, Switzerland), 2017, 7, 4.	2.0	21
111	Effect of irradiation on silicate aggregatesâ€™ density and stiffness. Journal of Nuclear Materials, 2018, 512, 126-136.	2.7	21
112	Evidence for a Correlation of Melt Fragility Index With Topological Phases of Multicomponent Glasses. Frontiers in Materials, 2019, 6, .	2.4	21
113	Predicting the early-stage creep dynamics of gels from their static structure by machine learning. Acta Materialia, 2021, 210, 116817.	7.9	21
114	Effect of nanoscale phase separation on the fracture behavior of glasses: Toward tough, yet transparent glasses. Physical Review Materials, 2018, 2, .	2.4	21
115	Effects of Thermal and Pressure Histories on the Chemical Strengthening of Sodium Aluminosilicate Glass. Frontiers in Materials, 2016, 3, .	2.4	20
116	Crucial effect of angular flexibility on the fracture toughness and nano-ductility of aluminosilicate glasses. Journal of Non-Crystalline Solids, 2016, 454, 46-51.	3.1	20
117	Glass relaxation and hysteresis of the glass transition by molecular dynamics simulations. Physical Review B, 2018, 98, .	3.2	20
118	Required strength estimation of a cemented backfill with the front wall exposed and back wall pressured. International Journal of Mining and Mineral Engineering, 2018, 9, 1.	0.3	20
119	Predicting Fracture Propensity in Amorphous Alumina from Its Static Structure Using Machine Learning. ACS Nano, 2021, 15, 17705-17716.	14.6	20
120	Choice of the Arch Yielding Support for the Preparatory Roadway Located near the Fault. Energies, 2022, 15, 3774.	3.1	20
121	Mechanical properties and acoustic emission response of cemented tailings backfill under variable angle shear. Construction and Building Materials, 2022, 343, 128114.	7.2	20
122	Balance between accuracy and simplicity in empirical forcefields for glass modeling: Insights from machine learning. Journal of Non-Crystalline Solids, 2019, 515, 133-142.	3.1	19
123	Long-term creep deformations in colloidal calciumâ€“silicateâ€“hydrate gels by accelerated aging simulations. Journal of Colloid and Interface Science, 2019, 542, 339-346.	9.4	19
124	Monovalent Ion Exchange Kinetics of Hydrated Calcium-Alumino Layered Double Hydroxides. Industrial & Engineering Chemistry Research, 2017, 56, 63-74.	3.7	18
125	Predicting the dissolution rate of borosilicate glasses using QSPR analysis based on molecular dynamics simulations. Journal of the American Ceramic Society, 2021, 104, 4445-4458.	3.8	18
126	Topological Origin of the Network Dilation Anomaly in Ion-Exchanged Glasses. Physical Review Applied, 2017, 8, .	3.8	17

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127	Steel corrosion inhibition by calcium nitrate in halide-enriched completion fluid environments. Npj Materials Degradation, 2018, 2, .	5.8	17
128	Glass Fracture Upon Ballistic Impact: New Insights From Peridynamics Simulations. Frontiers in Materials, 2019, 6, .	2.4	17
129	Parameterization of empirical forcefields for glassy silica using machine learning. MRS Communications, 2019, 9, 593-599.	1.8	17
130	Linking Melt Dynamics With Topological Phases and Molecular Structure of Sodium Phosphate Glasses From Calorimetry, Raman Scattering, and Infrared Reflectance. Frontiers in Materials, 2019, 6, .	2.4	17
131	The effect of irradiation on the atomic structure and chemical durability of calcite and dolomite. Npj Materials Degradation, 2019, 3, .	5.8	17
132	Calcium nitrate: A chemical admixture to inhibit aggregate dissolution and mitigate expansion caused by alkali-silica reaction. Cement and Concrete Composites, 2020, 110, 103592.	10.7	17
133	The energy landscape governs ductility in disordered materials. Materials Horizons, 2021, 8, 1242-1252.	12.2	17
134	Modifier clustering and avoidance principle in borosilicate glasses: A molecular dynamics study. Journal of Chemical Physics, 2019, 150, 044502.	3.0	16
135	Molecular Dynamics Simulation of the Precipitation of Calcium Silicate Hydrate Nanostructures under Two-Dimensional Confinement by TiO₂: Implications for Advanced Concretes. ACS Applied Nano Materials, 2020, 3, 2176-2184.	5.0	16
136	Rate controls on silicate dissolution in cementitious environments. RILEM Technical Letters, 0, 2, 67-73.	0.0	16
137	Role of Electrochemical Surface Potential and Irradiation on Garnet-Type Almandineâ€™s Dissolution Kinetics. Journal of Physical Chemistry C, 2018, 122, 17268-17277.	3.1	15
138	Competitive effects of free volume, rigidity, and selfâ€adaptivity on indentation response of silicoaluminoborate glasses. Journal of the American Ceramic Society, 2020, 103, 944-954.	3.8	15
139	Structural evolution of fused silica below the glass-transition temperature revealed by in-situ neutron total scattering. Journal of Non-Crystalline Solids, 2020, 528, 119760.	3.1	15
140	New insights into the structure of sodium silicate glasses by force-enhanced atomic refinement. Journal of Non-Crystalline Solids, 2020, 536, 120006.	3.1	15
141	Chemical composition of calcium-silicate-hydrate gels: Competition between kinetics and thermodynamics. Physical Review Materials, 2019, 3, .	2.4	15
142	Revealing the structural role of MgO in aluminosilicate glasses. Acta Materialia, 2022, 222, 117417.	7.9	15
143	Study on the Strength Development of Cemented Backfill Body from Lead-Zinc Mine Tailings with Sulphide. Advances in Materials Science and Engineering, 2018, 2018, 1-8.	1.8	14
144	zeo19: A thermodynamic database for assessing zeolite stability during the corrosion of nuclear waste immobilization glasses. Npj Materials Degradation, 2020, 4, .	5.8	14

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145	Exploring the landscape of Buckingham potentials for silica by machine learning: Soft vs hard interatomic forcefields. Journal of Chemical Physics, 2020, 152, 051101.	3.0	14
146	Analytical model of the network topology and rigidity of calcium aluminosilicate glasses. Journal of the American Ceramic Society, 2021, 104, 3947-3962.	3.8	14
147	New insights into the mechanisms of carbon dioxide mineralization by portlandite. AICHE Journal, 2021, 67, e17160.	3.6	14
148	Boron anomaly in the thermal conductivity of lithium borate glasses. Physical Review Materials, 2019, 3, .	2.4	14
149	Beyond the Average: Spatial and Temporal Fluctuations in Oxide Glass-Forming Systems. Chemical Reviews, 2023, 123, 1774-1840.	47.7	14
150	Topological Phases of Chalcogenide Glasses Encoded in the Melt Dynamics. Physica Status Solidi (B): Basic Research, 2018, 255, 1800027.	1.5	13
151	EBOD: An ensemble-based outlier detection algorithm for noisy datasets. Knowledge-Based Systems, 2021, 231, 107400.	7.1	13
152	Intermediate Phase in Calciumâ€“Silicateâ€“Hydrates: Mechanical, Structural, Rigidity, and Stress Signatures. Frontiers in Materials, 2019, 6, .	2.4	12
153	Topological controls on aluminosilicate glass dissolution: Complexities induced in hyperalkaline aqueous environments. Journal of the American Ceramic Society, 2020, 103, 6198-6207.	3.8	12
154	Precipitation of calciumâ€“aluminoâ€“silicateâ€“hydrate gels: The role of the internal stress. Journal of Chemical Physics, 2020, 153, 014501.	3.0	12
155	Effects of high temperature on the mechanical behavior of calcium silicate hydrate under uniaxial tension and compression. International Journal of Damage Mechanics, 0, , 105678952199187.	4.2	12
156	Using machine learning to predict concreteâ€™s strength: learning from small datasets. Engineering Research Express, 2021, 3, 015022.	1.6	12
157	New insights into the atomic structure of amorphous TiO2 using tight-binding molecular dynamics. Journal of Chemical Physics, 2018, 149, 094501.	3.0	11
158	Alkali Activation of Copper and Nickel Slag Composite Cementitious Materials. Materials, 2020, 13, 1155.	2.9	11
159	Effect of Gypsum Addition on the Mechanical and Microstructural Performance of Sulphide-Rich Cemented Paste Backfill. Minerals (Basel, Switzerland), 2021, 11, 283.	2.0	11
160	Deconstructing water sorption isotherms in cement pastes by lattice density functional theory simulations. Journal of the American Ceramic Society, 2021, 104, 4226-4238.	3.8	11
161	Vertical scanning interferometry: A new method to quantify re-/de-mineralization dynamics of dental enamel. Dental Materials, 2016, 32, e251-e261.	3.5	10
162	Isothermal Stimulation of Mineral Dissolution Processes by Acoustic Perturbation. Journal of Physical Chemistry C, 2018, 122, 28665-28673.	3.1	10

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163	Permanent Densification of Calcium Aluminophosphate Glasses. Frontiers in Materials, 2019, 6, .	2.4	10
164	Temperature-induced structural change through the glass transition of silicate glass by neutron diffraction. Physical Review B, 2020, 101, .	3.2	10
165	Modeling the nanoindentation response of silicate glasses by peridynamic simulations. Journal of the American Ceramic Society, 2021, 104, 3531-3544.	3.8	10
166	Structure and dynamics of liquid AsSe4 from ab initio molecular dynamics simulation. Journal of Non-Crystalline Solids, 2013, 377, 39-42.	3.1	9
167	Fracture Toughness of Silicate Glasses: Insights from Molecular Dynamics Simulations. Materials Research Society Symposia Proceedings, 2015, 1757, 47.	0.1	9
168	Anomalous variations in the viscous activation energy of suspensions induced by fractal structuring. Journal of Colloid and Interface Science, 2018, 530, 603-609.	9.4	9
169	Structural percolation controls the precipitation kinetics of colloidal calciumâ€“silicateâ€“hydrate gels. Journal Physics D: Applied Physics, 2019, 52, 315301.	2.8	9
170	Quantifying the internal stress in over-constrained glasses by molecular dynamics simulations. Journal of Non-Crystalline Solids: X, 2019, 1, 100013.	1.2	9
171	Polymorphism and Its Implications on Structure-Property Correlation in Calcium-Silicate-Hydrates. , 2015, , 99-108.		9
172	The Effect of Curing under Applied Stress on the Mechanical Performance of Cement Paste Backfill. Minerals (Basel, Switzerland), 2021, 11, 1107.	2.0	9
173	Evidence for Anomalous Dynamic Heterogeneities in Isostatic Supercooled Liquids. Physical Review Letters, 2017, 118, 145502.	7.8	8
174	An Experimental Study on the Microstructures of Cemented Paste Backfill during Its Developing Process. Advances in Civil Engineering, 2018, 2018, 1-10.	0.7	8
175	A new expansion material used for roof-contacted filling based on smelting slag. Scientific Reports, 2021, 11, 2607.	3.3	8
176	Interatomic potential parameterization using particle swarm optimization: Case study of glassy silica. Journal of Chemical Physics, 2021, 154, 134505.	3.0	8
177	Topological origin of phase separation in hydrated gels. Journal of Colloid and Interface Science, 2021, 590, 199-209.	9.4	8
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