Mathieu Bauchy

List of Publications by Year in Descending Order

237 papers	5,155 citations	41 h-index	60 g-index
250 ext. papers	6,425 ext. citations	4.9 avg, IF	6.5 L-index

#	Paper	IF	Citations
237	Water leak control for the oil-producing wells using Downhole Water Sink Technology. *Journal of Environmental Management*, **2022**, 301, 113834	7.9	
236	Study on Backfill Acoustic Emission Characteristics and Source Location under Uniaxial Compressive. *Advances in Civil Engineering*, **2022**, 2022, 1-9	1.3	
235	A Particle Size Distribution Model for Tailings in Mine Backfill. *Metals*, **2022**, 12, 594	2.3	0
234	Topological Constraint Theory of Glass: Counting Constraints by Molecular Dynamics Simulations **2022**, 123-148		
233	Experimental evidence of auxeticity in ion implanted single crystal calcite.. *Scientific Reports*, **2022**, 12, 6071	4.9	1
232	Groundwater Risk Assessment of a Rock Cave Type Landfill with Nontraditional Solid Waste. *Advances in Civil Engineering*, **2022**, 2022, 1-10	1.3	
231	Topology and Rigidity of Silicate Melts and Glasses. *Reviews in Mineralogy and Geochemistry*, **2022**, 87, 163-191	7.1	1
230	Challenges and opportunities in atomistic simulations of glasses: a review. *Comptes Rendus - Geoscience*, **2022**, 354, 1-43	1.4	0
229	Irradiation-induced toughening of calcium aluminoborosilicate glasses. *Materials Today Communications*, **2022**, 31, 103649	2.5	0
228	Choice of the Arch Yielding Support for the Preparatory Roadway Located near the Fault. *Energies*, **2022**, 15, 3774	3.1	5
227	Revealing the structural role of MgO in aluminosilicate glasses. *Acta Materialia*, **2021**, 117417	8.4	0
226	Stiffness Determination of Backfill-Rock Interface to Numerically Investigate Backfill Stress Distributions in Mine Stopes. *Advances in Civil Engineering*, **2021**, 2021, 1-13	1.3	
225	The Effect of Curing under Applied Stress on the Mechanical Performance of Cement Paste Backfill. *Minerals (Basel, Switzerland)*, **2021**, 11, 1107	2.4	4
224	Hybrid Failure of Cemented Paste Backfill. *Minerals (Basel, Switzerland)*, **2021**, 11, 1141	2.4	3
223	Shear Properties of Cemented Paste Backfill under Low Confining Stress. *Advances in Civil Engineering*, **2021**, 2021, 1-11	1.3	2
222	Predicting Fracture Propensity in Amorphous Alumina from Its Static Structure Using Machine Learning. *ACS Nano*, **2021**,	16.7	5
221	Modeling the nanoindentation response of silicate glasses by peridynamic simulations. *Journal of the American Ceramic Society*, **2021**, 104, 3531-3544	3.8	2

220	Effect of Gypsum Addition on the Mechanical and Microstructural Performance of Sulphide-Rich Cemented Paste Backfill. *Minerals (Basel, Switzerland)*, **2021**, 11, 283	2.4	5
219	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	10.3	16
218	Predicting zeolites stability during the corrosion of nuclear waste immobilization glasses: Comparison with glass corrosion experiments. *Journal of Nuclear Materials*, **2021**, 547, 152813	3.3	0
217	Bond Switching in Densified Oxide Glass Enables Record-High Fracture Toughness. *ACS Applied Materials & Interfaces*, **2021**, 13, 17753-17765	9.5	9
216	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	0
215	Interatomic potential parameterization using particle swarm optimization: Case study of glassy silica. *Journal of Chemical Physics*, **2021**, 154, 134505	3.9	1
214	Analytical model of the network topology and rigidity of calcium aluminosilicate glasses. *Journal of the American Ceramic Society*, **2021**, 104, 3947-3962	3.8	4
213	Topological origin of phase separation in hydrated gels. *Journal of Colloid and Interface Science*, **2021**, 590, 199-209	9.3	3
212	A design procedure for evaluation and prediction of in-situ cemented backfill performance **2021**, 227-233		
211	Predicting the early-stage creep dynamics of gels from their static structure by machine learning. *Acta Materialia*, **2021**, 210, 116817	8.4	8
210	Experimental Study on Initial Damage Point of Deep Granite under Step Cyclic Loading Method. *Advances in Civil Engineering*, **2021**, 2021, 1-10	1.3	
209	Experimental investigation on shear strength properties of interface between backfill and rock **2021**, 80-89		1
208	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	3
207	Effect of irradiation on the atomic structure of borosilicate glasses. *Journal of the American Ceramic Society*, **2021**, 104, 6194	3.8	0
206	Disorder-induced expansion of silicate minerals arises from the breakage of weak topological constraints. *Journal of Non-Crystalline Solids*, **2021**, 564, 120846	3.9	1
205	Decoupling of indentation modulus and hardness in silicate glasses: Evidence of a shear- to densification-dominated transition. *Journal of Non-Crystalline Solids*, **2021**, 553, 120518	3.9	1
204	Effect of temperature on time-dependent rheological and compressive strength of fresh cemented paste backfill containing flocculants. *Construction and Building Materials*, **2021**, 267, 121038	6.7	23
203	Machine learning for glass science and engineering: A review. *Journal of Non-Crystalline Solids*, **2021**, 557, 119419	3.9	17

202	A new expansion material used for roof-contacted filling based on smelting slag. *Scientific Reports*, **2021**, 11, 2607	4.9	1
201	Machine Learning Enables Rapid Screening of Reactive Fly Ashes Based on Their Network Topology. *ACS Sustainable Chemistry and Engineering*, **2021**, 9, 2639-2650	8.3	9
200	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	6.7	12
199	Rigidity theory of glass: Determining the onset temperature of topological constraints by molecular dynamics. *Journal of Non-Crystalline Solids*, **2021**, 554, 120614	3.9	3
198	Using machine learning to predict concrete strength: learning from small datasets. *Engineering Research Express*, **2021**, 3, 015022	0.9	2
197	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	1.8	5
196	Experimental method to quantify the ring size distribution in silicate glasses and simulation validation thereof. *Science Advances*, **2021**, 7,	14.3	9
195	The Influence of the Instantaneous Collapse of Tailings Pond on Downstream Facilities. *Advances in Civil Engineering*, **2021**, 2021, 1-15	1.3	3
194	Controls on CO2 Mineralization Using Natural and Industrial Alkaline Solids under Ambient Conditions. *ACS Sustainable Chemistry and Engineering*, **2021**, 9, 10727-10739	8.3	4
193	Toughening of soda-lime-silica glass by nanoscale phase separation: Molecular dynamics study. *Physical Review Materials*, **2021**, 5,	3.2	1
192	EBOD: An ensemble-based outlier detection algorithm for noisy datasets. *Knowledge-Based Systems*, **2021**, 231, 107400	7.3	1
191	Using recycled aggregate for seismically monitoring of embankment-subsoil model. *Case Studies in Construction Materials*, **2021**, 15, e00605	2.7	
190	Revealing the medium-range structure of glassy silica using force-enhanced atomic refinement. *Journal of Non-Crystalline Solids*, **2021**, 573, 121138	3.9	1
189	New insights into the mechanisms of carbon dioxide mineralization by portlandite. *AICHE Journal*, **2021**, 67, e17160	3.6	2
188	The energy landscape governs ductility in disordered materials. *Materials Horizons*, **2021**, 8, 1242-1252	14.4	7
187	Finding defects in disorder: Strain-dependent structural fingerprint of plasticity in granular materials. *Applied Physics Letters*, **2021**, 119, 241904	3.4	
186	Experimental Study on Factors Influencing the Strength Distribution of In Situ Cemented Tailings Backfill. *Metals*, **2021**, 11, 2059	2.3	2
185	Determination of Mixing and Conveying Parameters in a Phosphate Rock Filling System. *Journal of Physics: Conference Series*, **2020**, 1626, 012179	0.3	

184	Bauchy et al. Reply. *Physical Review Letters*, **2020**, 124, 199602	7.4	
183	Progress, Challenges, and Rewards in Probing Melt Dynamics, Configurational Entropy Change, and Topological Phases of Group V- and Group IV-Based Multicomponent Sulfide Glasses. *Physica Status Solidi (B): Basic Research*, **2020**, 257, 2000116	1.3	3
182	Revisiting the Makishima–Mackenzie model for predicting the young's modulus of oxide glasses. *Acta Materialia*, **2020**, 195, 252-262	8.4	10
181	Dynamic and stress signatures of the rigid intermediate phase in glass-forming liquids. *Journal of Chemical Physics*, **2020**, 152, 221101	3.9	2
180	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	6.7	14
179	Alkali Activation of Copper and Nickel Slag Composite Cementitious Materials. *Materials*, **2020**, 13,	3.5	5
178	New insights into the structure of sodium silicate glasses by force-enhanced atomic refinement. *Journal of Non-Crystalline Solids*, **2020**, 536, 120006	3.9	10
177	Dispersing nano- and micro-sized portlandite particulates via electrosteric exclusion at short screening lengths. *Soft Matter*, **2020**, 16, 3425-3435	3.6	2
176	How clay particulates affect flow cessation and the coiling stability of yield stress-matched cementing suspensions. *Soft Matter*, **2020**, 16, 3929-3940	3.6	1
175	Role of Internal Stress in the Early-Stage Nucleation of Amorphous Calcium Carbonate Gels. *Applied Sciences (Switzerland)*, **2020**, 10, 4359	2.6	3
174	Mineral Dissolution under Electric Stimulation. *Journal of Physical Chemistry C*, **2020**, 124, 16515-16523	3.8	1
173	Cooling rate effects on the structure of 45S5 bioglass: Insights from experiments and simulations. *Journal of Non-Crystalline Solids*, **2020**, 534, 119952	3.9	15
172	zeo19: A thermodynamic database for assessing zeolite stability during the corrosion of nuclear waste immobilization glasses. *Npj Materials Degradation*, **2020**, 4,	5.7	7
171	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	5.6	7
170	Calcium nitrate: A chemical admixture to inhibit aggregate dissolution and mitigate expansion caused by alkali-silica reaction. *Cement and Concrete Composites*, **2020**, 110, 103592	8.6	7
169	Can a simple topological-constraints-based model predict the initial dissolution rate of borosilicate and aluminosilicate glasses?. *Npj Materials Degradation*, **2020**, 4,	5.7	15
168	Mechanism of Alkali-Activated Copper-Nickel Slag Material. *Advances in Civil Engineering*, **2020**, 2020, 1-10	1.3	3
167	On the equivalence of vapor-deposited and melt-quenched glasses. *Journal of Chemical Physics*, **2020**, 152, 164504	3.9	5

166	Deep learning aided rational design of oxide glasses. *Materials Horizons*, **2020**, 7, 1819-1827	14.4	21
165	Nanoscale Composition-Texture-Property Relation in Calcium-Silicate-Hydrates **2020**, 1761-1792		1
164	Fracture toughness of a metal-organic framework glass. *Nature Communications*, **2020**, 11, 2593	17.4	31
163	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	3.9	7
162	Topological controls on aluminosilicate glass dissolution: Complexities induced in hyperalkaline aqueous environments. *Journal of the American Ceramic Society*, **2020**, 103, 6198-6207	3.8	8
161	Precipitation of calcium-alumino-silicate-hydrate gels: The role of the internal stress. *Journal of Chemical Physics*, **2020**, 153, 014501	3.9	5
160	Numerical Analysis of the Hydraulic and Mechanical Behavior of In Situ Cemented Paste Backfill. *Geotechnical and Geological Engineering*, **2020**, 38, 4877-4887	1.5	0
159	Bulk Metallic Glasses' Response to Oscillatory Stress Is Governed by the Topography of the Energy Landscape. *Journal of Physical Chemistry B*, **2020**, 124, 11294-11298	3.4	1
158	Atomic Dislocations and Bond Rupture Govern Dissolution Enhancement under Acoustic Stimulation. *ACS Applied Materials & Interfaces*, **2020**, 12, 55399-55410	9.5	2
157	Fineness Effect on Pozzolanic Activity of Cu-Ni Slag in Cemented Tailing Backfill. *Advances in Materials Science and Engineering*, **2020**, 2020, 1-7	1.5	1
156	Coupled Effect of Curing Temperature and Moisture on THM Behavior of Cemented Paste Backfill. *Advances in Civil Engineering*, **2020**, 2020, 1-12	1.3	0
155	Discussions on the Complete Strain Energy Characteristics of Deep Granite and Assessment of Rockburst Tendency. *Shock and Vibration*, **2020**, 2020, 1-9	1.1	2
154	Revealing hidden medium-range order in amorphous materials using topological data analysis. *Science Advances*, **2020**, 6,	14.3	14
153	Temperature-Induced Aggregation in Portlandite Suspensions. *Langmuir*, **2020**, 36, 10811-10821	4	3
152	Competitive effects of free volume, rigidity, and self-adaptivity on indentation response of silicoaluminoborate glasses. *Journal of the American Ceramic Society*, **2020**, 103, 944-954	3.8	4
151	Exploring the landscape of Buckingham potentials for silica by machine learning: Soft vs hard interatomic forcefields. *Journal of Chemical Physics*, **2020**, 152, 051101	3.9	6
150	Temperature-induced structural change through the glass transition of silicate glass by neutron diffraction. *Physical Review B*, **2020**, 101,	3.3	4
149	Intermediate Phase in Calcium-Silicate-Hydrates: Mechanical, Structural, Rigidity, and Stress Signatures. *Frontiers in Materials*, **2019**, 6,	4	9

148	Machine learning for glass science and engineering: A review. *Journal of Non-Crystalline Solids: X*, **2019**, 4, 100036	2.5	19
147	Predicting the dissolution kinetics of silicate glasses by topology-informed machine learning. *Npj Materials Degradation*, **2019**, 3,	5.7	32
146	Glass Fracture Upon Ballistic Impact: New Insights From Peridynamics Simulations. *Frontiers in Materials*, **2019**, 6,	4	12
145	Modifier clustering and avoidance principle in borosilicate glasses: A molecular dynamics study. *Journal of Chemical Physics*, **2019**, 150, 044502	3.9	11
144	Density–stiffness scaling in minerals upon disordering: Irradiation vs. vitrification. *Acta Materialia*, **2019**, 166, 611-617	8.4	16
143	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	6.7	32
142	New insights into the indentation size effect in silicate glasses. *Journal of Non-Crystalline Solids*, **2019**, 521, 119494	3.9	21
141	Predicting the Young's Modulus of Silicate Glasses using High-Throughput Molecular Dynamics Simulations and Machine Learning. *Scientific Reports*, **2019**, 9, 8739	4.9	49
140	Parameterization of empirical forcefields for glassy silica using machine learning. *MRS Communications*, **2019**, 9, 593-599	2.7	9
139	Atomic picture of structural relaxation in silicate glasses. *Applied Physics Letters*, **2019**, 114, 233703	3.4	16
138	Structural percolation controls the precipitation kinetics of colloidal calcium–silicate–hydrate gels. *Journal Physics D: Applied Physics*, **2019**, 52, 315301	3	6
137	Balance between accuracy and simplicity in empirical forcefields for glass modeling: Insights from machine learning. *Journal of Non-Crystalline Solids*, **2019**, 515, 133-142	3.9	10
136	Quantifying the internal stress in over-constrained glasses by molecular dynamics simulations. *Journal of Non-Crystalline Solids: X*, **2019**, 1, 100013	2.5	8
135	Atomistic origin of the passivation effect in hydrated silicate glasses. *Npj Materials Degradation*, **2019**, 3,	5.7	16
134	Permanent Densification of Calcium Aluminophosphate Glasses. *Frontiers in Materials*, **2019**, 6,	4	5
133	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,	4	12
132	Prediction of the Young's modulus of silicate glasses by topological constraint theory. *Journal of Non-Crystalline Solids*, **2019**, 514, 15-19	3.9	23
131	An experimental study on the early-age hydration kinetics of cemented paste backfill. *Construction and Building Materials*, **2019**, 212, 283-294	6.7	61

130	Long-term creep deformations in colloidal calcium-silicate-hydrate gels by accelerated aging simulations. *Journal of Colloid and Interface Science*, **2019**, 542, 339-346	9.3	11
129	Topological optimization of cementitious binders: Advances and challenges. *Cement and Concrete Composites*, **2019**, 101, 5-14	8.6	18
128	Structural dependence of chemical durability in modified aluminoborate glasses. *Journal of the American Ceramic Society*, **2019**, 102, 1157-1168	3.8	17
127	Breaking the Limit of Micro-Ductility in Oxide Glasses. *Advanced Science*, **2019**, 6, 1901281	13.6	24
126	Revisiting the Dependence of Poisson's Ratio on Liquid Fragility and Atomic Packing Density in Oxide Glasses. *Materials*, **2019**, 12,	3.5	17
125	Topological Origins of the Mixed Alkali Effect in Glass. *Journal of Physical Chemistry B*, **2019**, 123, 7482-7489	3.4	12
124	Predicting Young's modulus of oxide glasses with sparse datasets using machine learning. *Journal of Non-Crystalline Solids*, **2019**, 524, 119643	3.9	31
123	Chemical composition of calcium-silicate-hydrate gels: Competition between kinetics and thermodynamics. *Physical Review Materials*, **2019**, 3,	3.2	9
122	Boron anomaly in the thermal conductivity of lithium borate glasses. *Physical Review Materials*, **2019**, 3,	3.2	7
121	Topological Constraint Theory and Rigidity of Glasses **2019**, 13-1-13-20		2
120	Liquid fragility determination of oxide glass-formers using temperature-modulated DSC. *International Journal of Applied Glass Science*, **2019**, 10, 321-329	1.8	4
119	The Rheological Property Study on the Slurry of Unclassified Tailings Cemented for an Iron Mine. *IOP Conference Series: Earth and Environmental Science*, **2019**, 358, 032027	0.3	
118	Evidence for a Correlation of Melt Fragility Index With Topological Phases of Multicomponent Glasses. *Frontiers in Materials*, **2019**, 6,	4	12
117	The effect of irradiation on the atomic structure and chemical durability of calcite and dolomite. *Npj Materials Degradation*, **2019**, 3,	5.7	10
116	Deciphering the atomic genome of glasses by topological constraint theory and molecular dynamics: A review. *Computational Materials Science*, **2019**, 159, 95-102	3.2	49
115	Numerical study on the pipe flow characteristics of the cemented paste backfill slurry considering hydration effects. *Powder Technology*, **2019**, 343, 454-464	5.2	65
114	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	3.9	17
113	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	5	21

112	Predicting the dissolution kinetics of silicate glasses using machine learning. *Journal of Non-Crystalline Solids*, **2018**, 487, 37-45	3.9	63
111	The hydrophilic-to-hydrophobic transition in glassy silica is driven by the atomic topology of its surface. *Journal of Chemical Physics*, **2018**, 148, 074503	3.9	26
110	Topological Phases of Chalcogenide Glasses Encoded in the Melt Dynamics. *Physica Status Solidi (B): Basic Research*, **2018**, 255, 1800027	1.3	12
109	A new transferable interatomic potential for molecular dynamics simulations of borosilicate glasses. *Journal of Non-Crystalline Solids*, **2018**, 498, 294-304	3.9	76
108	Hardness of silicate glasses: Atomic-scale origin of the mixed modifier effect. *Journal of Non-Crystalline Solids*, **2018**, 489, 16-21	3.9	25
107	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	1.5	9
106	New insights into the sol-gel condensation of silica by reactive molecular dynamics simulations. *Journal of Chemical Physics*, **2018**, 148, 234504	3.9	31
105	Competitive effects of modifier charge and size on mechanical and chemical resistance of aluminoborate glasses. *Journal of Non-Crystalline Solids*, **2018**, 499, 264-271	3.9	5
104	Anomalous variations in the viscous activation energy of suspensions induced by fractal structuring. *Journal of Colloid and Interface Science*, **2018**, 530, 603-609	9.3	6
103	Role of Electrochemical Surface Potential and Irradiation on Garnet-Type Almandine Dissolution Kinetics. *Journal of Physical Chemistry C*, **2018**, 122, 17268-17277	3.8	11
102	Experimental investigation on the relationship between pore characteristics and unconfined compressive strength of cemented paste backfill. *Construction and Building Materials*, **2018**, 179, 254-264	6.7	102
101	Combining high hardness and crack resistance in mixed network glasses through high-temperature densification. *Physical Review Materials*, **2018**, 2,	3.2	7
100	Effect of nanoscale phase separation on the fracture behavior of glasses: Toward tough, yet transparent glasses. *Physical Review Materials*, **2018**, 2,	3.2	11
99	An Experimental Study on the Microstructures of Cemented Paste Backfill during Its Developing Process. *Advances in Civil Engineering*, **2018**, 2018, 1-10	1.3	7
98	Isothermal Stimulation of Mineral Dissolution Processes by Acoustic Perturbation. *Journal of Physical Chemistry C*, **2018**, 122, 28665-28673	3.8	6
97	Stability of Calcium Alumino Layered-Double-Hydroxide Nanocomposites in Aqueous Electrolytes. *Industrial & Engineering Chemistry Research*, **2018**, 57, 13417-13426	3.9	1
96	Glass relaxation and hysteresis of the glass transition by molecular dynamics simulations. *Physical Review B*, **2018**, 98,	3.3	11
95	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	0.7	12

94	Steel corrosion inhibition by calcium nitrate in halide-enriched completion fluid environments. *Npj Materials Degradation*, **2018**, 2,	5.7	12
93	Effect of irradiation on silicate aggregates density and stiffness. *Journal of Nuclear Materials*, **2018**, 512, 126-136	3.3	11
92	Nanoscale Composition-Texture-Property-Relation in Calcium-Silicate-Hydrates **2018**, 1-32		2
91	New insights into the atomic structure of amorphous TiO using tight-binding molecular dynamics. *Journal of Chemical Physics*, **2018**, 149, 094501	3.9	5
90	Direct observation of pitting corrosion evolutions on carbon steel surfaces at the nano-to-micro-scales. *Scientific Reports*, **2018**, 8, 7990	4.9	24
89	Structural Compromise between High Hardness and Crack Resistance in Aluminoborate Glasses. *Journal of Physical Chemistry B*, **2018**, 122, 6287-6295	3.4	17
88	Sodium Silicate Gel Effect on Cemented Tailing Backfill That Contains Lead-Zinc Smelting Slag at Early Ages. *Advances in Materials Science and Engineering*, **2018**, 2018, 1-6	1.5	6
87	Numerical Analysis of Stress Distribution in Backfilled Stopes Considering Interfaces between the Backfill and Rock Walls. *International Journal of Geomechanics*, **2017**, 17, 06016014	3.1	20
86	Structural origin of high crack resistance in sodium aluminoborate glasses. *Journal of Non-Crystalline Solids*, **2017**, 460, 54-65	3.9	53
85	Correlating the Network Topology of Oxide Glasses with their Chemical Durability. *Journal of Physical Chemistry B*, **2017**, 121, 1139-1147	3.4	41
84	Fragility and configurational heat capacity of calcium aluminosilicate glass-forming liquids. *Journal of Non-Crystalline Solids*, **2017**, 461, 24-34	3.9	17
83	Nanoengineering of concrete via topological constraint theory. *MRS Bulletin*, **2017**, 42, 50-54	3.2	22
82	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	45
81	Discovery of Ultra-Crack-Resistant Oxide Glasses with Adaptive Networks. *Chemistry of Materials*, **2017**, 29, 5865-5876	9.6	77
80	Irradiation- vs. vitrification-induced disordering: The case of ?-quartz and glassy silica. *Journal of Chemical Physics*, **2017**, 146, 204502	3.9	29
79	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	27
78	Irradiation-induced topological transition in SiO2: Structural signature of networks' rigidity. *Journal of Non-Crystalline Solids*, **2017**, 463, 25-30	3.9	39
77	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	3.9	25

76	Monovalent Ion Exchange Kinetics of Hydrated Calcium-Alumino Layered Double Hydroxides. *Industrial & Engineering Chemistry Research*, **2017**, 56, 63-74	3.9	11
75	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	1.5	156
74	Cooling rate effects in sodium silicate glasses: Bridging the gap between molecular dynamics simulations and experiments. *Journal of Chemical Physics*, **2017**, 147, 074501	3.9	83
73	Thermometer Effect: Origin of the Mixed Alkali Effect in Glass Relaxation. *Physical Review Letters*, **2017**, 119, 095501	7.4	41
72	Effects of Irradiation on Albite's Chemical Durability. *Journal of Physical Chemistry A*, **2017**, 121, 7835-7845	2.8	28
71	Dissolution Kinetics of Hot Compressed Oxide Glasses. *Journal of Physical Chemistry B*, **2017**, 121, 9063-9072	3.4	24
70	Revealing the Effect of Irradiation on Cement Hydrates: Evidence of a Topological Self-Organization. *ACS Applied Materials & Interfaces*, **2017**, 9, 32377-32385	9.5	30
69	Topological Control on the Structural Relaxation of Atomic Networks under Stress. *Physical Review Letters*, **2017**, 119, 035502	7.4	44
68	Enthalpy Landscape Dictates the Irradiation-Induced Disordering of Quartz *Physical Review X*, **2017**, 7,	9.1	23
67	Evidence for Anomalous Dynamic Heterogeneities in Isostatic Supercooled Liquids. *Physical Review Letters*, **2017**, 118, 145502	7.4	6
66	Topological controls on the dissolution kinetics of glassy aluminosilicates. *Journal of the American Ceramic Society*, **2017**, 100, 5521-5527	3.8	34
65	Topological Origin of the Network Dilation Anomaly in Ion-Exchanged Glasses. *Physical Review Applied*, **2017**, 8,	4.3	13
64	Reactive Molecular Dynamics Simulations of Sodium Silicate Glasses Toward an Improved Understanding of the Structure. *International Journal of Applied Glass Science*, **2017**, 8, 276-284	1.8	36
63	An Investigation of the Uniaxial Compressive Strength of a Cemented Hydraulic Backfill Made of Alluvial Sand. *Minerals (Basel, Switzerland)*, **2017**, 7, 4	2.4	11
62	Irradiation-driven amorphous-to-glassy transition in quartz: The crucial role of the medium-range order in crystallization. *Physical Review Materials*, **2017**, 1,	3.2	20
61	Modifier field strength effects on densification behavior and mechanical properties of alkali aluminoborate glasses. *Physical Review Materials*, **2017**, 1,	3.2	22
60	Vertical scanning interferometry: A new method to quantify re-/de-mineralization dynamics of dental enamel. *Dental Materials*, **2016**, 32, e251-e261	5.7	8
59	Fracture toughness anomalies: Viewpoint of topological constraint theory. *Acta Materialia*, **2016**, 121, 234-239	8.4	62

58	Nanoductility in silicate glasses is driven by topological heterogeneity. *Physical Review B*, **2016**, 93,	3.3	35
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