John C Mauro

List of Publications by Citations

319 papers	8,668 citations	45 h-index	80 g-index
331 ext. papers	10,135 ext. citations	4.6 avg, IF	6.71 L-index

#	Paper	IF	Citations
319	Viscosity of glass-forming liquids. *Proceedings of the National Academy of Sciences of the United States of America*, **2009**, 106, 19780-4	11.5	618
318	Resonant waveguide grating biosensor for living cell sensing. *Biophysical Journal*, **2006**, 91, 1925-40	2.9	318
317	Composition dependence of glass transition temperature and fragility. I. A topological model incorporating temperature-dependent constraints. *Journal of Chemical Physics*, **2009**, 130, 094503	3.9	252
316	Towards ultrastrong glasses. *Advanced Materials*, **2011**, 23, 4578-86	24	251
315	Topological principles of borosilicate glass chemistry. *Journal of Physical Chemistry B*, **2011**, 115, 12930-46	3.4	234
314	Prediction of glass hardness using temperature-dependent constraint theory. *Physical Review Letters*, **2010**, 105, 115503	7.4	195
313	Composition dependence of glass transition temperature and fragility. II. A topological model of alkali borate liquids. *Journal of Chemical Physics*, **2009**, 130, 234503	3.9	184
312	Quantitative Design of Glassy Materials Using Temperature-Dependent Constraint Theory. *Chemistry of Materials*, **2010**, 22, 5358-5365	9.6	139
311	Accelerating the Design of Functional Glasses through Modeling. *Chemistry of Materials*, **2016**, 28, 4267-4277	9.6	136
310	The glassy state of matter: Its definition and ultimate fate. *Journal of Non-Crystalline Solids*, **2017**, 471, 490-495	3.9	135
309	Understanding Glass through Differential Scanning Calorimetry. *Chemical Reviews*, **2019**, 119, 7848-7939	68.1	124
308	Nonequilibrium viscosity of glass. *Physical Review B*, **2009**, 80,	3.3	124
307	Computing the viscosity of supercooled liquids. *Journal of Chemical Physics*, **2009**, 130, 224504	3.9	113
306	A metal-organic framework with ultrahigh glass-forming ability. *Science Advances*, **2018**, 4, eaao6827	14.3	112
305	Fragile-to-strong transition in metallic glass-forming liquids. *Journal of Chemical Physics*, **2010**, 133, 014508	3.9	112
304	Dynamics of glass relaxation at room temperature. *Physical Review Letters*, **2013**, 110, 265901	7.4	111
303	Viscosity of glass-forming systems. *Journal of the American Ceramic Society*, **2017**, 100, 6-25	3.8	105

302	Continuously broken ergodicity. *Journal of Chemical Physics*, **2007**, 126, 184511	3.9	102
301	Structure and properties of sodium aluminosilicate glasses from molecular dynamics simulations. *Journal of Chemical Physics*, **2013**, 139, 044507	3.9	96
300	Glass Science in the United States: Current Status and Future Directions. *International Journal of Applied Glass Science*, **2014**, 5, 2-15	1.8	92
299	Two Centuries of Glass Research: Historical Trends, Current Status, and Grand Challenges for the Future. *International Journal of Applied Glass Science*, **2014**, 5, 313-327	1.8	87
298	The laboratory glass transition. *Journal of Chemical Physics*, **2007**, 126, 224504	3.9	86
297	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
296	Topological origin of stretched exponential relaxation in glass. *Journal of Chemical Physics*, **2011**, 135, 214502	3.9	83
295	Fictive Temperature and the Glassy State. *Journal of the American Ceramic Society*, **2009**, 92, 75-86	3.8	83
294	A new transferable interatomic potential for molecular dynamics simulations of borosilicate glasses. *Journal of Non-Crystalline Solids*, **2018**, 498, 294-304	3.9	76
293	Composition□structure□property relationships in boroaluminosilicate glasses. *Journal of Non-Crystalline Solids*, **2012**, 358, 993-1002	3.9	76
292	Statistical mechanics of glass. *Journal of Non-Crystalline Solids*, **2014**, 396-397, 41-53	3.9	72
291	Structure and mechanical properties of compressed sodium aluminosilicate glasses: Role of non-bridging oxygens. *Journal of Non-Crystalline Solids*, **2016**, 441, 49-57	3.9	71
290	Universality of the high-temperature viscosity limit of silicate liquids. *Physical Review B*, **2011**, 83,	3.3	67
289	Mixed alkaline earth effect in sodium aluminosilicate glasses. *Journal of Non-Crystalline Solids*, **2013**, 369, 61-68	3.9	62
288	Atomistic understanding of the network dilation anomaly in ion-exchanged glass. *Journal of Non-Crystalline Solids*, **2012**, 358, 316-320	3.9	62
287	Metabasin approach for computing the master equation dynamics of systems with broken ergodicity. *Journal of Physical Chemistry A*, **2007**, 111, 7957-65	2.8	60
286	Selenium glass transition: A model based on the enthalpy landscape approach and nonequilibrium statistical mechanics. *Physical Review B*, **2007**, 76,	3.3	60
285	A Nonequilibrium Statistical Mechanical Model of Structural Relaxation in Glass. *Journal of the American Ceramic Society*, **2006**, 89, 1091-1094	3.8	57

284	Modeling of Rigidity Percolation and Incipient Plasticity in Germanium–Selenium Glasses. *Journal of the American Ceramic Society*, **2007**, 90, 192-198	3.8	54
283	Decoding the glass genome. *Current Opinion in Solid State and Materials Science*, **2018**, 22, 58-64	12	52
282	Heat capacity, enthalpy fluctuations, and configurational entropy in broken ergodic systems. *Journal of Chemical Physics*, **2010**, 133, 164503	3.9	52
281	Impact of fragility on enthalpy relaxation in glass. *Physical Review E*, **2008**, 78, 021502	2.4	51
280	Elastic and micromechanical properties of isostatically compressed soda–lime–borate glasses. *Journal of Non-Crystalline Solids*, **2013**, 364, 44-52	3.9	50
279	Nonmonotonic evolution of density fluctuations during glass relaxation. *Physical Review Letters*, **2009**, 102, 155506	7.4	49
278	A model for phosphate glass topology considering the modifying ion sub-network. *Journal of Chemical Physics*, **2014**, 140, 154501	3.9	47
277	Glass: The Nanotechnology Connection. *International Journal of Applied Glass Science*, **2013**, 4, 64-75	1.8	47
276	Irreversibility of pressure induced boron speciation change in glass. *Scientific Reports*, **2014**, 4, 3770	4.9	46
275	Unified approach for determining the enthalpic fictive temperature of glasses with arbitrary thermal history. *Journal of Non-Crystalline Solids*, **2011**, 357, 3230-3236	3.9	46
274	Origin of dynamical heterogeneities in calcium aluminosilicate liquids. *Journal of Chemical Physics*, **2010**, 132, 194501	3.9	45
273	Interfacial adhesion behavior of polyimides on silica glass: A molecular dynamics study. *Polymer*, **2016**, 98, 1-10	3.9	44
272	Elasticity of ion stuffing in chemically strengthened glass. *Journal of Non-Crystalline Solids*, **2012**, 358, 1569-1574	3.9	44
271	Unique effects of thermal and pressure histories on glass hardness: Structural and topological origin. *Journal of Chemical Physics*, **2015**, 143, 164505	3.9	43
270	Defect-mediated self-diffusion in calcium aluminosilicate glasses: A molecular modeling study. *Journal of Non-Crystalline Solids*, **2011**, 357, 1780-1786	3.9	43
269	Sodium diffusion in boroaluminosilicate glasses. *Journal of Non-Crystalline Solids*, **2011**, 357, 3744-3750	3.9	43
268	Intrachannel nonlinear penalties in dispersion-managed transmission systems. *IEEE Journal of Selected Topics in Quantum Electronics*, **2002**, 8, 626-631	3.8	43
267	Indentation deformation mechanism of isostatically compressed mixed alkali aluminosilicate glasses. *Journal of Non-Crystalline Solids*, **2015**, 426, 175-183	3.9	42

266	Mixed alkaline earth effect in the compressibility of aluminosilicate glasses. *Journal of Chemical Physics*, **2014**, 140, 054511	3.9	42
265	Grand Challenges in Glass Science. *Frontiers in Materials*, **2014**, 1,	4	42
264	Topological Model for the Viscosity of Multicomponent Glass-Forming Liquids. *International Journal of Applied Glass Science*, **2013**, 4, 408-413	1.8	42
263	Multiscale modeling of arsenic selenide glass. *Journal of Non-Crystalline Solids*, **2007**, 353, 1226-1231	3.9	42
262	Thermometer Effect: Origin of the Mixed Alkali Effect in Glass Relaxation. *Physical Review Letters*, **2017**, 119, 095501	7.4	41
261	Hardness and incipient plasticity in silicate glasses: Origin of the mixed modifier effect. *Applied Physics Letters*, **2014**, 104, 051913	3.4	41
260	Advancing glasses through fundamental research. *Journal of the European Ceramic Society*, **2009**, 29, 1227-1234	6	41
259	Computing the viscosity of supercooled liquids. II. Silica and strong-fragile crossover behavior. *Journal of Chemical Physics*, **2009**, 131, 164505	3.9	41
258	Enthalpy landscapes and the glass transition. *Scientific Modeling and Simulation SMNS*, **2008**, 15, 241-281		39
257	Composition-Structure-Property Relations of Compressed Borosilicate Glasses. *Physical Review Applied*, **2014**, 2,	4.3	38
256	Unified physics of stretched exponential relaxation and Weibull fracture statistics. *Physica A: Statistical Mechanics and Its Applications*, **2012**, 391, 6121-6127	3.3	38
255	Impact of network topology on cationic diffusion and hardness of borate glass surfaces. *Journal of Chemical Physics*, **2010**, 133, 154509	3.9	37
254	Communication: Resolving the vibrational and configurational contributions to thermal expansion in isobaric glass-forming systems. *Journal of Chemical Physics*, **2010**, 133, 091102	3.9	37
253	Statistics of modifier distributions in mixed network glasses. *Journal of Chemical Physics*, **2013**, 138, 12A522	3.9	36
252	Ionic diffusion and the topological origin of fragility in silicate glasses. *Journal of Chemical Physics*, **2009**, 131, 244514	3.9	36
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250	Structure-topology-property correlations of sodium phosphosilicate glasses. *Journal of Chemical Physics*, **2015**, 143, 064510	3.9	35
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247	Reconciling calorimetric and kinetic fragilities of glass-forming liquids. *Journal of Non-Crystalline Solids*, **2017**, 456, 95-100	3.9	35
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243	Split-step eigenvector-following technique for exploring enthalpy landscapes at absolute zero. *Journal of Physical Chemistry B*, **2006**, 110, 5005-11	3.4	33
242	Optical properties of a melt-quenched metal-organic framework glass. *Optics Letters*, **2019**, 44, 1623-1625	3	33
241	Principles of Pyrex® glass chemistry: structure–property relationships. *Applied Physics A: Materials Science and Processing*, **2014**, 116, 491-504	2.6	32
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239	Forbidden glasses and the failure of fictive temperature. *Journal of Non-Crystalline Solids*, **2009**, 355, 676-680	3.9	32
238	Topology of alkali phosphate glass networks. *Journal of Non-Crystalline Solids*, **2013**, 361, 57-62	3.9	31
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236	Ultra-Smooth and Ultra-Strong Ion-Exchanged Glass as Substrates for Organic Electronics. *Advanced Functional Materials*, **2013**, 23, 3233-3238	15.6	31
235	Divergent dynamics and the Kauzmann temperature in glass forming systems. *Scientific Reports*, **2014**, 4, 5160	4.9	30
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233	Enabling Computational Design of ZIFs Using ReaxFF. *Journal of Physical Chemistry B*, **2018**, 122, 9616-9624	3.4	30
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230	Relaxation of enthalpy fluctuations during sub-T(g) annealing of glassy selenium. *Journal of Chemical Physics*, **2013**, 138, 244504	3.9	28
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226	Elastic interpretation of the glass transition in aluminosilicate liquids. *Physical Review B*, **2012**, 85,	3.3	27
225	Compositional Dependence of Solubility/Retention of Molybdenum Oxides in Aluminoborosilicate-Based Model Nuclear Waste Glasses. *Journal of Physical Chemistry B*, **2018**, 122, 1714-1729	3.4	26
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218	Viscous flow of medieval cathedral glass. *Journal of the American Ceramic Society*, **2018**, 101, 5-11	3.8	25
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216	On the Prony series representation of stretched exponential relaxation. *Physica A: Statistical Mechanics and Its Applications*, **2018**, 506, 75-87	3.3	24
215	Molecular dynamics simulations of ion-exchanged glass. *Journal of Non-Crystalline Solids*, **2014**, 403, 107-112	3.9	24
214	Computing the viscosity of supercooled liquids: Markov Network model. *PLoS ONE*, **2011**, 6, e17909	3.7	24
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208	Universal behavior of changes in elastic moduli of hot compressed oxide glasses. *Chemical Physics Letters*, **2016**, 651, 88-91	2.5	21
207	Network Glasses Under Pressure: Permanent Densification in Modifier-Free Al2O3B2O3P2O5SiO2 Systems. *Physical Review Applied*, **2017**, 7,	4.3	21
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203	Computational approaches for investigating interfacial adhesion phenomena of polyimide on silica glass. *Scientific Reports*, **2017**, 7, 10475	4.9	19
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200	Glass-forming ability of soda lime borate liquids. *Journal of Non-Crystalline Solids*, **2012**, 358, 658-665	3.9	19
199	Characterizing the Fundamental Adhesion of Polyimide Monomers on Crystalline and Glassy Silica Surfaces: A Molecular Dynamics Study. *Journal of Physical Chemistry C*, **2016**, 120, 23631-23639	3.8	19
198	Structure-property relations in calcium aluminate glasses containing different divalent cations and SiO 2. *Journal of Non-Crystalline Solids*, **2015**, 427, 160-165	3.9	18
197	Crucial effect of angular flexibility on the fracture toughness and nano-ductility of aluminosilicate glasses. *Journal of Non-Crystalline Solids*, **2016**, 454, 46-51	3.9	18
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195	Emerging Role of Non-crystalline Electrolytes in Solid-State Battery Research. *Frontiers in Energy Research*, **2020**, 8,	3.8	18

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179	Statistical mechanical model of bonding in mixed modifier glasses. *Journal of the American Ceramic Society*, **2018**, 101, 1906-1915	3.8	15
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175	Cation Diffusivity and the Mixed Network Former Effect in Borosilicate Glasses. *Journal of Physical Chemistry B*, **2015**, 119, 7106-15	3.4	14
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170	Maxwell relaxation time for nonexponential □-relaxation phenomena in glassy systems. *Journal of the American Ceramic Society*, **2020**, 103, 3590-3599	3.8	13
169	Anomalous crystallization as a signature of the fragile-to-strong transition in metallic glass-forming liquids. *Journal of Physical Chemistry B*, **2014**, 118, 10258-65	3.4	13
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157	Predicting Q-Speciation in Binary Phosphate Glasses Using Statistical Mechanics. *Journal of Physical Chemistry B*, **2018**, 122, 7609-7615	3.4	11
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151	Glass-activated regeneration of volumetric muscle loss. *Acta Biomaterialia*, **2020**, 103, 306-317	10.8	11
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146	Macroscopic model of phospholipid vesicle spreading and rupture. *Langmuir*, **2004**, 20, 5724-31	4	10
145	Topological understanding of the mixed alkaline earth effect in glass. *Journal of Non-Crystalline Solids*, **2020**, 527, 119696	3.9	10
144	Model-driven design of bioactive glasses: from molecular dynamics through machine learning. *International Materials Reviews*, **2020**, 65, 297-321	16.1	10
143	Modeling the thermal poling of glasses using molecular dynamics. Part 1: Effects on glass structure. *Journal of Non-Crystalline Solids*, **2017**, 461, 98-103	3.9	9
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141	Statistical mechanics of topological fluctuations in glass-forming liquids. *Physica A: Statistical Mechanics and Its Applications*, **2018**, 510, 787-801	3.3	9

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