

# Randall E Youngman

## List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

111  
papers

3,011  
citations

31  
h-index

50  
g-index

115  
ext. papers

3,504  
ext. citations

4.8  
avg, IF

5.45  
L-index

#	Paper	IF	Citations
111	Correlating Sulfur Solubility with Short-to-Intermediate Range Ordering in the Structure of Borosilicate Glasses. <i>Journal of Physical Chemistry C</i> , <b>2022</b> , 126, 655-674	3.8	1
110	Structural model for amorphous aluminosilicates.. <i>Journal of Chemical Physics</i> , <b>2022</b> , 156, 064503	3.9	1
109	Compositional dependence of crystallization and chemical durability in alkali aluminoborosilicate glasses. <i>Journal of Non-Crystalline Solids</i> , <b>2022</b> , 590, 121694	3.9	0
108	Structural drivers controlling sulfur solubility in alkali aluminoborosilicate glasses. <i>Journal of the American Ceramic Society</i> , <b>2021</b> , 104, 5030-5049	3.8	4
107	Low-temperature nucleation anomaly in silicate glasses shown to be artifact in a 5BaO/BSiO glass. <i>Nature Communications</i> , <b>2021</b> , 12, 2026	17.4	5
106	Thermal conductivity of densified borosilicate glasses. <i>Journal of Non-Crystalline Solids</i> , <b>2021</b> , 557, 1206449	3.9	3
105	Structural densification of lithium phosphoaluminoborate glasses. <i>Journal of the American Ceramic Society</i> , <b>2021</b> , 104, 1345-1359	3.8	0
104	Dissolution kinetics of a sodium borosilicate glass in Tris buffer solutions: impact of Tris concentration and acid (HCl/HNO) identity. <i>Physical Chemistry Chemical Physics</i> , <b>2021</b> , 23, 16165-16179	3.6	3
103	Structural control of self-healing silica-poly(tetrahydropyran)-poly(Ecaprolactone) hybrids. <i>Journal of Materials Chemistry B</i> , <b>2021</b> , 9, 4400-4410	7.3	2
102	Borosilicate Glasses <b>2021</b> , 867-878		1
101	Nanoscale microstructure and chemistry of transparent gahnite glass-ceramics revealed by atom probe tomography. <i>Scripta Materialia</i> , <b>2021</b> , 203, 114110	5.6	2
100	Nucleation pathways in barium silicate glasses. <i>Scientific Reports</i> , <b>2021</b> , 11, 69	4.9	4
99	Mixed Alkali Effect in Silicate Glass Structure: Viewpoint of Si Nuclear Magnetic Resonance and Statistical Mechanics. <i>Journal of Physical Chemistry B</i> , <b>2020</b> , 124, 10292-10299	3.4	6
98	Cooling rate effects on the structure of 45S5 bioglass: Insights from experiments and simulations. <i>Journal of Non-Crystalline Solids</i> , <b>2020</b> , 534, 119952	3.9	15
97	Achieving ultrahigh crack resistance in glass through humid aging. <i>Physical Review Materials</i> , <b>2020</b> , 4,	3.2	4
96	Understanding cracking behavior of glass from its response to hydrostatic compression. <i>Physical Review Materials</i> , <b>2020</b> , 4,	3.2	2
95	An insight into the corrosion of alkali aluminoborosilicate glasses in acidic environments. <i>Physical Chemistry Chemical Physics</i> , <b>2020</b> , 22, 1881-1896	3.6	19

94	Composition and pressure effects on the structure, elastic properties and hardness of aluminoborosilicate glass. <i>Journal of Non-Crystalline Solids</i> , <b>2020</b> , 530, 119797	3.9	15
93	Boron coordination structure at the surfaces of sodium borosilicate and aluminoborosilicate glasses by B K-edge NEXAFS. <i>Journal of Non-Crystalline Solids</i> , <b>2020</b> , 545, 120247	3.9	2
92	Combined Experimental and Computational Approach toward the Structural Design of Borosilicate-Based Bioactive Glasses. <i>Journal of Physical Chemistry C</i> , <b>2020</b> , 124, 17655-17674	3.8	8
91	Predicting Cation Interactions in Alkali Aluminoborate Glasses using Statistical Mechanics. <i>Journal of Non-Crystalline Solids</i> , <b>2020</b> , 544, 120099	3.9	3
90	Multiscale Investigation of the Mechanisms Controlling the Corrosion of Borosilicate Glasses in Hyper-Alkaline Media. <i>Journal of Physical Chemistry C</i> , <b>2020</b> , 124, 27542-27557	3.8	2
89	Nucleation and early stage crystallization in barium disilicate glass. <i>Journal of Non-Crystalline Solids</i> , <b>2020</b> , 548, 120330-120330	3.9	3
88	Why does BO suppress nepheline (NaAlSiO) crystallization in sodium aluminosilicate glasses?. <i>Physical Chemistry Chemical Physics</i> , <b>2020</b> , 22, 8679-8698	3.6	15
87	Mechanical property optimization of a zinc borate glass by lanthanum doping. <i>Journal of Non-Crystalline Solids</i> , <b>2019</b> , 520, 119461	3.9	8
86	Permanent Densification of Calcium Aluminophosphate Glasses. <i>Frontiers in Materials</i> , <b>2019</b> , 6,	4	5
85	Structural dependence of chemical durability in modified aluminoborate glasses. <i>Journal of the American Ceramic Society</i> , <b>2019</b> , 102, 1157-1168	3.8	17
84	Time-dependent nucleation rate measurements in BaO <sub>2</sub> SiO <sub>2</sub> and 5BaO <sub>8</sub> SiO <sub>2</sub> glasses. <i>Journal of Non-Crystalline Solids</i> , <b>2019</b> , 525, 119575	3.9	11
83	Composition-Structure-Property relationships in alkali aluminosilicate glasses: A combined experimental-computational approach towards designing functional glasses. <i>Journal of Non-Crystalline Solids</i> , <b>2019</b> , 505, 144-153	3.9	30
82	The role of the network-modifier's field-strength in the chemical durability of aluminoborate glasses. <i>Journal of Non-Crystalline Solids</i> , <b>2019</b> , 505, 279-285	3.9	17
81	Statistical Mechanical Modeling of Borate Glass Structure and Topology: Prediction of Superstructural Units and Glass Transition Temperature. <i>Journal of Physical Chemistry B</i> , <b>2019</b> , 123, 12063-12113	3.4	22
80	Compositional Dependence of Solubility/Retention of Molybdenum Oxides in Aluminoborosilicate-Based Model Nuclear Waste Glasses. <i>Journal of Physical Chemistry B</i> , <b>2018</b> , 122, 1714-1729	3.4	26
79	Pressure-induced structural changes in titanophosphate glasses studied by neutron and X-ray total scattering analyses. <i>Journal of Non-Crystalline Solids</i> , <b>2018</b> , 483, 50-59	3.9	10
78	NMR Spectroscopy in Glass Science: A Review of the Elements. <i>Materials</i> , <b>2018</b> , 11,	3.5	46
77	Competitive effects of modifier charge and size on mechanical and chemical resistance of aluminoborate glasses. <i>Journal of Non-Crystalline Solids</i> , <b>2018</b> , 499, 264-271	3.9	5

76	Predicting Q-Speciation in Binary Phosphate Glasses Using Statistical Mechanics. <i>Journal of Physical Chemistry B</i> , <b>2018</b> , 122, 7609-7615	3.4	11
75	Combining high hardness and crack resistance in mixed network glasses through high-temperature densification. <i>Physical Review Materials</i> , <b>2018</b> , 2,	3.2	7
74	Structures and mechanisms in clay nanopore trapping of structurally-different fluoroquinolone antimicrobials. <i>Journal of Colloid and Interface Science</i> , <b>2018</b> , 513, 367-378	9.3	21
73	Understanding the structural drivers governing glass-water interactions in borosilicate based model bioactive glasses. <i>Acta Biomaterialia</i> , <b>2018</b> , 65, 436-449	10.8	33
72	Structural and Chemical Approach toward Understanding the Aqueous Corrosion of Sodium Aluminoborate Glasses. <i>Journal of Physical Chemistry B</i> , <b>2018</b> , 122, 10913-10927	3.4	14
71	Phase-Separated AluminaSilica Glass-Based Erbium-Doped Fibers for Optical Amplifier: Material and Optical Characterization along with Amplification Properties. <i>Fibers</i> , <b>2018</b> , 6, 67	3.7	5
70	Nano-phase separation and structural ordering in silica-rich mixed network former glasses. <i>Physical Chemistry Chemical Physics</i> , <b>2018</b> , 20, 15707-15717	3.6	9
69	Structural Compromise between High Hardness and Crack Resistance in Aluminoborate Glasses. <i>Journal of Physical Chemistry B</i> , <b>2018</b> , 122, 6287-6295	3.4	17
68	Structural origin of high crack resistance in sodium aluminoborate glasses. <i>Journal of Non-Crystalline Solids</i> , <b>2017</b> , 460, 54-65	3.9	53
67	Topological engineering of glasses using temperature-dependent constraints. <i>MRS Bulletin</i> , <b>2017</b> , 42, 29-33	3.2	17
66	Pressure-driven structural depolymerization of zinc phosphate glass. <i>Journal of Non-Crystalline Solids</i> , <b>2017</b> , 469, 31-38	3.9	10
65	Structure of MgO/CaO sodium aluminosilicate glasses: Raman spectroscopy study. <i>Journal of Non-Crystalline Solids</i> , <b>2017</b> , 470, 145-151	3.9	24
64	Discovery of Ultra-Crack-Resistant Oxide Glasses with Adaptive Networks. <i>Chemistry of Materials</i> , <b>2017</b> , 29, 5865-5876	9.6	77
63	The Structure of Borophosphosilicate Pure Network Former Glasses Studied by Multinuclear NMR Spectroscopy. <i>Journal of Physical Chemistry C</i> , <b>2017</b> , 121, 1838-1850	3.8	9
62	Network Glasses Under Pressure: Permanent Densification in Modifier-Free $Al_2O_3B_2O_3B_2O_5BiO_2$ Systems. <i>Physical Review Applied</i> , <b>2017</b> , 7,	4.3	21
61	Modifier field strength effects on densification behavior and mechanical properties of alkali aluminoborate glasses. <i>Physical Review Materials</i> , <b>2017</b> , 1,	3.2	22
60	Formation of Periodically-Ordered Calcium Phosphate Nanostructures by Block Copolymer-Directed Self-Assembly. <i>Chemistry of Materials</i> , <b>2016</b> , 28, 838-847	9.6	10
59	Effects of Thermal and Pressure Histories on the Chemical Strengthening of Sodium Aluminosilicate Glass. <i>Frontiers in Materials</i> , <b>2016</b> , 3,	4	11

58	Strong, Tough Glass-Ceramics for Emerging Markets. <i>International Journal of Applied Glass Science</i> , <b>2016</b> , 7, 486-491	1.8	5
57	Structure and mechanical properties of compressed sodium aluminosilicate glasses: Role of non-bridging oxygens. <i>Journal of Non-Crystalline Solids</i> , <b>2016</b> , 441, 49-57	3.9	71
56	Volume and structural relaxation in compressed sodium borate glass. <i>Physical Chemistry Chemical Physics</i> , <b>2016</b> , 18, 29879-29891	3.6	19
55	Structure-topology-property correlations of sodium phosphosilicate glasses. <i>Journal of Chemical Physics</i> , <b>2015</b> , 143, 064510	3.9	35
54	Structural and topological aspects of borophosphate glasses and their relation to physical properties. <i>Journal of Chemical Physics</i> , <b>2015</b> , 142, 184503	3.9	30
53	Temperature-dependent densification of sodium borosilicate glass. <i>RSC Advances</i> , <b>2015</b> , 5, 78845-78851	3.7	22
52	Structure-solubility relationships in fluoride-containing phosphate based bioactive glasses. <i>Journal of Materials Chemistry B</i> , <b>2015</b> , 3, 9360-9373	7.3	20
51	Amorphous Materials. Glimpsing glass structure under pressure. <i>Science</i> , <b>2014</b> , 345, 998-9	33.3	7
50	Composition-Structure-Property Relations of Compressed Borosilicate Glasses. <i>Physical Review Applied</i> , <b>2014</b> , 2,	4.3	38
49	Principles of Pyrex <sup>®</sup> glass chemistry: structure-property relationships. <i>Applied Physics A: Materials Science and Processing</i> , <b>2014</b> , 116, 491-504	2.6	32
48	Pressure-induced changes in interdiffusivity and compressive stress in chemically strengthened glass. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2014</b> , 6, 10436-44	9.5	19
47	Irreversibility of pressure induced boron speciation change in glass. <i>Scientific Reports</i> , <b>2014</b> , 4, 3770	4.9	46
46	Structure of glasses in the pseudobinary system Ga <sub>2</sub> Se <sub>3</sub> -GeSe <sub>2</sub> : violation of chemical order and 8-N coordination rule. <i>Journal of Physical Chemistry B</i> , <b>2013</b> , 117, 16594-601	3.4	36
45	Sodium tracer diffusion and <sup>11</sup> B NMR study of glasses of the type (Na <sub>2</sub> O) <sub>0.17</sub> (B <sub>2</sub> O <sub>3</sub> ) <sub>x</sub> (SiO <sub>2</sub> ) <sub>0.83-x</sub> . <i>Journal of Non-Crystalline Solids</i> , <b>2013</b> , 378, 168-176	3.9	28
44	Impact of ZnO on the structure and properties of sodium aluminosilicate glasses: Comparison with alkaline earth oxides. <i>Journal of Non-Crystalline Solids</i> , <b>2013</b> , 381, 58-64	3.9	23
43	Structure and bonding characteristics of chalcogenide glasses in the system BaSeGa <sub>2</sub> Se <sub>3</sub> GeSe <sub>2</sub> . <i>Journal of Non-Crystalline Solids</i> , <b>2013</b> , 375, 40-46	3.9	11
42	Controlled tin catalyzed hydrolysis of 3-acryloxypropyltrimethoxysilane with mono- and multi-functional mercaptans. <i>Journal of Organometallic Chemistry</i> , <b>2013</b> , 724, 213-224	2.3	3
41	Mixed alkaline earth effect in sodium aluminosilicate glasses. <i>Journal of Non-Crystalline Solids</i> , <b>2013</b> , 369, 61-68	3.9	62

40	Elastic and micromechanical properties of isostatically compressed soda lime borate glasses. <i>Journal of Non-Crystalline Solids</i> , <b>2013</b> , 364, 44-52	3.9	50
39	Influence of aluminum speciation on the stability of aluminosilicate glasses against crystallization. <i>Applied Physics Letters</i> , <b>2012</b> , 101, 041906	3.4	28
38	Glass-forming ability of soda lime borate liquids. <i>Journal of Non-Crystalline Solids</i> , <b>2012</b> , 358, 658-665	3.9	19
37	Composition-structure-property relationships in boroaluminosilicate glasses. <i>Journal of Non-Crystalline Solids</i> , <b>2012</b> , 358, 993-1002	3.9	76
36	Structure of boroaluminosilicate glasses: Impact of [Al <sub>2</sub> O <sub>3</sub> ]/[SiO <sub>2</sub> ] ratio on the structural role of sodium. <i>Physical Review B</i> , <b>2012</b> , 86,	3.3	51
35	Topological principles of borosilicate glass chemistry. <i>Journal of Physical Chemistry B</i> , <b>2011</b> , 115, 12930-464	3.4	234
34	Mechanistic understanding of the effect of rigidity percolation on structural relaxation in supercooled germanium selenide liquids. <i>Physical Review B</i> , <b>2010</b> , 82,	3.3	33
33	Direct Observation of Defect Dynamics in Nanocrystalline CaF <sub>2</sub> : Results from <sup>19</sup> F MAS NMR Spectroscopy. <i>Journal of Physical Chemistry Letters</i> , <b>2010</b> , 1, 1126-1129	6.4	16
32	Self-assembly and hydrogelation promoted by F5-phenylalanine. <i>Soft Matter</i> , <b>2010</b> , 6, 475-479	3.6	152
31	Force spectroscopy of hepatocytic extracellular matrix components. <i>Ultramicroscopy</i> , <b>2009</b> , 109, 942-7	3.1	2
30	Structure-Property Relations in Mixed-Network Glasses: Multinuclear Solid State NMR Investigations of the System xAl <sub>2</sub> O <sub>3</sub> :(30-x)P <sub>2</sub> O <sub>5</sub> :70SiO <sub>2</sub> . <i>Journal of Physical Chemistry C</i> , <b>2009</b> , 113, 3322-3331	3.8	28
29	Fluorine incorporation in silica glass by the MCVD process: Study of fluorine incorporation zone, evaluation of optical properties and structure of the glass. <i>Journal of Non-Crystalline Solids</i> , <b>2008</b> , 354, 5408-5420	3.9	7
28	Multinuclear NMR studies of mixed Ca <sub>1-x</sub> Sr <sub>x</sub> F <sub>2</sub> crystals. <i>Physical Review B</i> , <b>2008</b> , 78,	3.3	29
27	Structure of high alumina content Al <sub>2</sub> O <sub>3</sub> -SiO <sub>2</sub> composition glasses. <i>Journal of Physical Chemistry B</i> , <b>2008</b> , 112, 16726-33	3.4	48
26	Atomic-scale understanding of structural relaxation in simple and complex borosilicate glasses. <i>Physical Review B</i> , <b>2007</b> , 75,	3.3	24
25	Structure-energy map of alkali borosilicate glasses: Effects of pressure and temperature. <i>Physical Review B</i> , <b>2007</b> , 76,	3.3	85
24	Crystallization of Silicon Pyrophosphate from Silicophosphate Glasses as Monitored by Multi-Nuclear NMR. <i>Materials Research Society Symposia Proceedings</i> , <b>2006</b> , 984, 1		5
23	Integrated Approach to Studying the Development and Final Network Properties of Urethane Acrylate Coatings. <i>Macromolecules</i> , <b>2006</b> , 39, 2126-2136	5.5	13

22	Ex situ XRD, TEM, IR, Raman and NMR spectroscopy of crystallization of lithium disilicate glass at high pressure. <i>Journal of Non-Crystalline Solids</i> , <b>2006</b> , 352, 4101-4111	3.9	65
21	High temperature thermal expansion behavior of H[Al]ZSM-5 zeolites: The role of Brüsted sites. <i>Microporous and Mesoporous Materials</i> , <b>2006</b> , 87, 217-223	5.3	18
20	Structural Studies of (Ca,Sr)F <sub>2</sub> Single Crystals with Raman and NMR Spectroscopies. <i>Journal of the American Ceramic Society</i> , <b>2005</b> , 88, 2447-2450	3.8	20
19	A high-resolution <sup>19</sup> F NMR spectroscopic study of barium fluorozirconate glasses and related crystals. <i>Solid State Nuclear Magnetic Resonance</i> , <b>2005</b> , 27, 77-89	3.1	36
18	NMR Studies of Fluorine in Aluminosilicate–lanthanum Fluoride Glasses and Glass-Ceramics. <i>Journal of the American Ceramic Society</i> , <b>2004</b> , 85, 1077-1082	3.8	32
17	High-Resolution Multinuclear NMR Structural Study of Binary Aluminosilicate and Other Related Glasses. <i>Journal of Physical Chemistry B</i> , <b>2004</b> , 108, 7557-7564	3.4	102
16	The nature of fluorine in amorphous silica. <i>Journal of Non-Crystalline Solids</i> , <b>2004</b> , 337, 182-186	3.9	32
15	Structure and properties of GeGaP sulfide glasses. <i>Journal of Non-Crystalline Solids</i> , <b>2004</b> , 345-346, 50-55, 9	3.9	10
14	Structural role of fluorine in amorphous silica. <i>Journal of Non-Crystalline Solids</i> , <b>2004</b> , 349, 10-15	3.9	30
13	NMR study of Q-speciation and connectivity in K <sub>2</sub> O–Bi <sub>2</sub> O <sub>3</sub> glasses with high silica content. <i>Journal of Non-Crystalline Solids</i> , <b>2003</b> , 331, 100-107	3.9	68
12	Temperature-induced structural changes in fluorozirconate glasses and liquids. <i>Physical Review B</i> , <b>2002</b> , 66,	3.3	7
11	NMR studies of aluminum speciation in tellurite glasses. <i>Journal of Non-Crystalline Solids</i> , <b>2001</b> , 284, 9-15, 9	3.9	8
10	The effect of phosphorus on the properties and structure of GeAsS glasses. <i>Journal of Non-Crystalline Solids</i> , <b>2001</b> , 284, 34-42	3.9	10
9	Multi-nuclear NMR studies of borosilicophosphate glasses and microfoams. <i>Journal of Non-Crystalline Solids</i> , <b>2000</b> , 263-264, 111-116	3.9	7
8	GeAs thiophosphate glasses: properties and NMR spectroscopy. <i>Journal of Non-Crystalline Solids</i> , <b>2000</b> , 263-264, 117-122	3.9	4
7	Extended structural integrity in network glasses and liquids. <i>Journal of Non-Crystalline Solids</i> , <b>1997</b> , 222, 190-198	3.9	53
6	Network Modification in Potassium Borate Glasses: Structural Studies with NMR and Raman Spectroscopies. <i>The Journal of Physical Chemistry</i> , <b>1996</b> , 100, 16720-16728		90
5	The Structure of Sodium Tellurite Glasses: Sodium Cation Environments from Sodium-23 NMR. <i>The Journal of Physical Chemistry</i> , <b>1995</b> , 99, 5111-5116		48

- 4 Short-and Intermediate-Range Structural Ordering in Glassy Boron Oxide. *Science*, **1995**, 269, 1416-20 33.3 116
- 3 Microstructure and modification in borate and tellurite glasses. *Journal of Non-Crystalline Solids*, **1995**, 192-193, 157-160 3.9 8
- 2 On the Formation of Tetracoordinate Boron in Rubidium Borate Glasses. *Journal of the American Chemical Society*, **1995**, 117, 1397-1402 16.4 42
- 1 Multiple boron sites in borate glass detected with dynamic angle spinning nuclear magnetic resonance. *Journal of Non-Crystalline Solids*, **1994**, 168, 293-297 3.9 109