Brian J Riley

List of Publications by Year
in descending order

122 papers	3,686 citations	186209 28 h-index	155592 55 g-index
151 all docs	151 docs citations	151 times ranked	3086 citing authors

#	Article	IF	Citations
1	Materials and processes for the effective capture and immobilization of radioiodine: A review. Journal of Nuclear Materials, 2016, 470, 307-326.	1.3	437
2	Adsorbed Proteins Influence the Biological Activity and Molecular Targeting of Nanomaterials. Toxicological Sciences, 2007, 100, 303-315.	1.4	414
3	Chalcogenide Aerogels as Sorbents for Radioactive Iodine. Chemistry of Materials, 2015, 27, 2619-2626.	3.2	186
4	Chalcogen-Based Aerogels As Sorbents for Radionuclide Remediation. Environmental Science & Technology, 2013, 47, 7540-7547.	4.6	161
5	Single-mode low-loss chalcogenide glass waveguides for the mid-infrared. Optics Letters, 2006, 31, 1860.	1.7	130
6	Polyacrylonitrile-Chalcogel Hybrid Sorbents for Radioiodine Capture. Environmental Science & Technology, 2014, 48, 5832-5839.	4.6	90
7	Chalcogen-based aerogels as a multifunctional platform for remediation of radioactive iodine. RSC Advances, 2011, 1, 1704.	1.7	85
8	Multiâ€Phase Glassâ€Ceramics as a Waste Form for Combined Fission Products: Alkalis, Alkaline Earths, Lanthanides, and Transition Metals. Journal of the American Ceramic Society, 2012, 95, 1297-1303.	1.9	82
9	Cold crucible induction melter studies for making glass ceramic waste forms: A feasibility assessment. Journal of Nuclear Materials, 2014, 444, 481-492.	1.3	82
10	Reduction and Simultaneous Removal of ⁹⁹Tc and Cr by Fe(OH)₂(s) Mineral Transformation. Environmental Science & Technology, 2017, 51, 8635-8642.	4.6	68
11	Cluster formation of silica particles in glass batches during melting. Journal of Non-Crystalline Solids, 2010, 356, 1359-1367.	1.5	66
12	Rhenium Solubility in Borosilicate Nuclear Waste Glass: Implications for the Processing and Immobilization of Technetium-99. Environmental Science & Technology, 2012, 46, 12616-12622.	4.6	62
13	Iodine solubility in a low-activity waste borosilicate glass at 1000Â°C. Journal of Nuclear Materials, 2014, 452, 178-188.	1.3	60
14	Removal of TcO₄^{â€“} from Representative Nuclear Waste Streams with Layered Potassium Metal Sulfide Materials. Chemistry of Materials, 2016, 28, 3976-3983.	3.2	56
15	Molten salt reactor waste and effluent management strategies: A review. Nuclear Engineering and Design, 2019, 345, 94-109.	0.8	56
16	Silver-Loaded Aluminosilicate Aerogels As Iodine Sorbents. ACS Applied Materials & Interfaces, 2017, 9, 32907-32919.	4.0	53
17	Glass-bonded iodosodalite waste form for immobilization of 129I. Journal of Nuclear Materials, 2018, 504, 109-121.	1.3	50
18	Temperature Distribution within a Cold Cap during Nuclear Waste Vitrification. Environmental Science & Technology, 2015, 49, 8856-8863.	4.6	45

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19	Binary Phase Diagram of the Manganese Oxideâ€"Iron Oxide System. Journal of the American Ceramic Society, 2009, 92, 2378-2384.	1.9	44
20	Tellurite glass as a waste form for mixed alkaliâ€"chloride waste streams: Candidate materials selection and initial testing. Journal of Nuclear Materials, 2012, 424, 29-37.	1.3	41
21	Gaseous Iodine Sorbents: A Comparison between Ag-Loaded Aerogel and Xerogel Scaffolds. ACS Applied Materials & Interfaces, 2020, 12, 26127-26136.	4.0	38
22	Conversion of Nuclear Waste to Molten Glass: Coldâ€Cap Reactions in CrucibleÂTests. Journal of the American Ceramic Society, 2016, 99, 2964-2970.	1.9	36
23	Incorporating technetium in minerals and other solids: A review. Journal of Nuclear Materials, 2015, 466, 526-538.	1.3	35
24	Glass binder development for a glass-bonded sodalite ceramic waste form. Journal of Nuclear Materials, 2017, 489, 42-63.	1.3	34
25	Evaluation of Getter Metals in Naâ€"Alâ€"Siâ€"O Aerogels and Xerogels for the Capture of Iodine Gas. ACS Applied Materials & Interfaces, 2020, 12, 19682-19692.	4.0	34
26	Synthesis and characterization of iodosodalite. Journal of the American Ceramic Society, 2017, 100, 2273-2284.	1.9	33
27	Effect of Alumina Source on the Rate of Melting Demonstrated with Nuclear Waste Glass Batch. International Journal of Applied Glass Science, 2012, 3, 59-68.	1.0	32
28	Solution-based approaches for making high-density sodalite waste forms to immobilize spent electrochemical salts. Journal of Nuclear Materials, 2013, 442, 350-359.	1.3	31
29	Sol-gel derived silica: A review of polymer-tailored properties for energy and environmental applications. Microporous and Mesoporous Materials, 2022, 336, 111874.	2.2	31
30	Structural analysis of some sodium and alumina rich high-level nuclear waste glasses. Journal of Non-Crystalline Solids, 2012, 358, 674-679.	1.5	30
31	Ion-Exchange Interdiffusion Model with Potential Application to Long-Term Nuclear Waste Glass Performance. Journal of Physical Chemistry C, 2016, 120, 9374-9384.	1.5	30
32	Liquidus temperature and chemical durability of selected glasses to immobilize rare earth oxides waste. Journal of Nuclear Materials, 2015, 465, 657-663.	1.3	28
33	Role of Zeolite Structural Properties toward Iodine Capture: A Head-to-head Evaluation of Framework Type and Chemical Composition. ACS Applied Materials & Interfaces, 2022, 14, 18439-18452.	4.0	27
34	Structure of Rheniumâ€Containing Sodium Borosilicate Glass. International Journal of Applied Glass Science, 2013, 4, 42-52.	1.0	25
35	Dilute condition corrosion behavior of glass-ceramic waste form. Journal of Nuclear Materials, 2016, 482, 1-11.	1.3	25
36	Chalcogenide Aerogels as Sorbents for Noble Gases (Xe, Kr). ACS Applied Materials & Interfaces, 2017, 9, 33389-33394.	4.0	25

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37	Metalâ€"Organic Frameworkâ€"Polyacrylonitrile Composite Beads for Xenon Capture. ACS Applied Materials & Interfaces, 2020, 12, 45342-45350.	4.0	25
38	Solutionâ€Derived, Chlorideâ€Containing Minerals as a Waste Form for Alkali Chlorides. Journal of the American Ceramic Society, 2012, 95, 3115-3123.	1.9	24
39	Immobilization of cesium and iodine into Cs3Bi2I9 perovskite-silica composites and core-shell waste forms with high waste loadings and chemical durability. Journal of Hazardous Materials, 2021, 401, 123279.	6.5	24
40	Review of molten salt reactor off-gas management considerations. Nuclear Engineering and Design, 2021, 385, 111529.	0.8	24
41	Structure-optical property correlations of arsenic sulfide glasses in visible, infrared, and sub-millimeter regions. Journal of Non-Crystalline Solids, 2010, 356, 1288-1293.	1.5	23
42	The Predictive Power of Electronic Polarizability for Tailoring the Refractivity of Highâ€Index Glasses: Optical Basicity Versus the Single Oscillator Model. Journal of the American Ceramic Society, 2010, 93, 1650-1662.	1.9	22
43	The effect of high-level waste glass composition on spinel liquidus temperature. Journal of Non-Crystalline Solids, 2014, 384, 32-40.	1.5	22
44	Structure and Chemistry in Halide Leadâ€"Tellurite Glasses. Journal of Physical Chemistry C, 2013, 117, 3456-3466.	1.5	21
45	Melter Feed Reactions at <i>TÂ</i>â‰<i>Â</i>700Â°C for Nuclear Waste Vitrification. Journal of the American Ceramic Society, 2015, 98, 3105-3111.	1.9	21
46	Synthesis and characterization of oxyapatite [Ca2Nd8(SiO4)6O2] and mixed-alkaline-earth powellite [(Ca,Sr,Ba)MoO4] for a glass-ceramic waste form. Journal of Nuclear Materials, 2018, 510, 623-634.	1.3	21
47	Crystallization of Rhenium Salts in a Simulated Lowâ€Activity Waste Borosilicate Glass. Journal of the American Ceramic Society, 2013, 96, 1150-1157.	1.9	20
48	Radiation stability test on multiphase glass ceramic and crystalline ceramic waste forms. Nuclear Instruments & Methods in Physics Research B, 2014, 326, 293-297.	0.6	19
49	Electrochemical Salt Wasteform Development: A Review of Salt Treatment and Immobilization Options. Industrial & Engineering Chemistry Research, 2020, 59, 9760-9774.	1.8	19
50	Hybrid Sorbents for ¹²⁹I Capture from Contaminated Groundwater. ACS Applied Materials & Interfaces, 2020, 12, 26113-26126.	4.0	19
51	Iodosodalite synthesis with hot isostatic pressing of precursors produced from aqueous and hydrothermal processes. Journal of Nuclear Materials, 2020, 538, 152222.	1.3	18
52	Consolidation of Tin Sulfide Chalcogels and Xerogels with and without Adsorbed Iodine. Industrial & Engineering Chemistry Research, 2015, 54, 11259-11267.	1.8	17
53	Iodosodalite Waste Forms from Low-Temperature Aqueous Process. MRS Advances, 2018, 3, 1093-1103.	0.5	17
54	Kinetics of oxyapatite [Ca2Nd8(SiO4)6O2] and powellite [(Ca,Sr,Ba)MoO4] dissolution in glass-ceramic nuclear waste forms in acidic, neutral, and alkaline conditions. Journal of Nuclear Materials, 2019, 515, 227-237.	1.3	17

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55	Assessment of lead tellurite glass for immobilizing electrochemical salt wastes from used nuclear fuel reprocessing. Journal of Nuclear Materials, 2017, 495, 405-420.	1.3	16
56	Dehalogenation of electrochemical processing salt simulants with ammonium phosphates and immobilization of salt cations in an iron phosphate glass waste form. Journal of Nuclear Materials, 2020, 529, 151949.	1.3	16
57	Syntheses, crystal structures, and comparisons of rare-earth oxyapatites Ca₂ <i>RE</i> ₈(SiO₄)₆O₂ (<i>RE</i> = La, Nd, Sm, Eu, or Yb) and NaLa₉(SiO₄)₆O₂. Acta Crystallographica Section E: Crystallographic Communications, 2019, 75, 1020-1025.	0.2	16
58	Infrared-transparent glass ceramics: An exploratory study. Journal of Non-Crystalline Solids, 2015, 410, 160-173.	1.5	14
59	Waste form evaluation for RECl3 and REO fission products separated from used electrochemical salt. Progress in Nuclear Energy, 2018, 104, 102-108.	1.3	14
60	Iodine Capture with Mechanically Robust Heat-Treated Agâ€"Alâ€"Siâ€"O Xerogel Sorbents. ACS Omega, 2021, 6, 11628-11638.	1.6	14
61	Investigation of physical and chemical properties for upgraded SAP (SiO2Al2O3P2O5) waste form to immobilize radioactive waste salt. Journal of Nuclear Materials, 2019, 515, 382-391.	1.3	13
62	Cs3Bi2I9-hydroxyapatite composite waste forms for cesium and iodine immobilization. Journal of Advanced Ceramics, 2022, 11, 712-728.	8.9	13
63	Gamma Radiation Effects on Physical, Optical, and Structural Properties of Binary <scp><scp>Asâ€"S</scp></scp> Glasses. Journal of the American Ceramic Society, 2012, 95, 1048-1055.	1.9	12
64	Component effects on crystallization of RE-containing aluminoborosilicate glass. Journal of Nuclear Materials, 2016, 478, 261-267.	1.3	12
65	Environmental Remediation with Functional Aerogels and Xerogels. Global Challenges, 2020, 4, 2000013.	1.8	12
66	Liquidus Temperature of Rare Earth-Alumino-Borosilicate Glasses for Treatment of Americium and Curium. Materials Research Society Symposia Proceedings, 1999, 608, 677.	0.1	11
67	Chalcogenide glasses and structures for quantum sensing. , 2004, 5359, 234.		11
68	Compositional trends of Î3-induced optical changes observed in chalcogenide glasses of binary AsS system. Journal of Non-Crystalline Solids, 2014, 386, 95-99.	1.5	11
69	Efficacy of a solution-based approach for making sodalite waste forms for an oxide reduction salt utilized in the reprocessing of used uranium oxide fuel. Journal of Nuclear Materials, 2015, 459, 313-322.	1.3	11
70	Sodalite as a vehicle to increase Re retention in waste glass simulant during vitrification. Journal of Nuclear Materials, 2016, 479, 331-337.	1.3	11
71	Crystallization study of rare earth and molybdenum containing nuclear waste glass ceramics. Journal of the American Ceramic Society, 2019, 102, 5149-5163.	1.9	11
72	Molten salt reactors and electrochemical reprocessing: synthesis and chemical durability of potential waste forms for metal and salt waste streams. International Materials Reviews, 2021, 66, 339-363.	9.4	11

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73	Polyacrylonitrile Composites of Agâ€"Alâ€"Siâ€"O Aerogels and Xerogels as Iodine and Iodide Sorbents. ACS Applied Polymer Materials, 2021, 3, 3344-3353.	2.0	11
74	Iodine Vapor Reactions with Pure Metal Wires at Temperatures of 100â€"139 Â°C in Air. Industrial & Engineering Chemistry Research, 2021, 60, 17162-17173.	1.8	11
75	Synthesis and Characterization of Bulk, Vitreous Cadmium Germanium Arsenide. Journal of the American Ceramic Society, 2009, 92, 1236-1243.	1.9	10
76	Solution-derived sodalite made with Si- and Ge-ethoxide precursors for immobilizing electrorefiner salt. Journal of Nuclear Materials, 2016, 468, 140-146.	1.3	10
77	Silver-Loaded Xerogel Nanostructures for Iodine Capture: A Comparison of Thiolated versus Unthiolated Sorbents. ACS Applied Nano Materials, 2022, 5, 9478-9494.	2.4	10
78	The Liquidus Temperature of Nuclear Waste Glasses: An International Roundâ€Robin Study. International Journal of Applied Glass Science, 2011, 2, 321-333.	1.0	9
79	Synthesis and characterization of sintered Hâ€"Y zeolite-derived waste forms for dehalogenated electrorefiner salt. Ceramics International, 2020, 46, 17707-17716.	2.3	9
80	Infrared-transmitting glass-ceramics: a review. Proceedings of SPIE, 2013, , .	0.8	8
81	Electron backscatter diffraction of a Ge growth tip from a vertical gradient freeze furnace. Journal of Crystal Growth, 2008, 311, 10-14.	0.7	7
82	The Influence of Constitutional Supercooling on the Distribution of Te-Particles in Melt-Grown CZT. Journal of Electronic Materials, 2015, 44, 4604-4621.	1.0	7
83	Solâ€"gel synthesis of iodosodalite precursors and subsequent consolidation with a glass binder made from oxides and solâ€"gel routes. Journal of Sol-Gel Science and Technology, 2020, 96, 564-575.	1.1	7
84	Review and experimental comparison of the durability of iodine waste forms in semi-dynamic leach testing. Chemical Engineering Journal Advances, 2022, 11, 100300.	2.4	7
85	Differential etching of chalcogenides for infrared photonic waveguide structures. Journal of Non-Crystalline Solids, 2008, 354, 813-816.	1.5	6
86	Thermal and gamma-ray induced relaxation in Asâ€"S glasses: modelling and experiment. Journal Physics D: Applied Physics, 2011, 44, 395402.	1.3	6
87	Liquidus temperature in the spinel primary phase field: A comparison between optical and crystal fraction methods. Journal of Non-Crystalline Solids, 2018, 483, 1-9.	1.5	6
88	Immobilization of LiCl-Li2O pyroprocessing salt wastes in chlorosodalite using glass-bonded hydrothermal and salt-occlusion methods. Journal of Nuclear Materials, 2018, 502, 236-246.	1.3	6
89	Glass structure and crystallization in boro-alumino-silicate glasses containing rare earth and transition metal cations: a US-UK collaborative program. MRS Advances, 2019, 4, 1029-1043.	0.5	6
90	Glass waste form options for rare-earth fission products from electrochemical reprocessing. Journal of Non-Crystalline Solids, 2020, 545, 120161.	1.5	6

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91	Syntheses and Crystal Structures of Rare-Earth Oxyapatites Ca2RE8(SiO4)6O2 (REâ€‰=â€‰Pr, Tb, Ho, Tm). Journal of Chemical Crystallography, 2021, 51, 293-300.	0.5	6
92	Tricadmium Digermanium Tetraarsenide: A New Crystalline Phase Made with a Doubleâ€Containment Ampoule Method. Journal of the American Ceramic Society, 2012, 95, 2161-2168.	1.9	5
93	Sublimationâ€"Condensation of Multiscale Tellurium Structures. Journal of Physical Chemistry C, 2013, 117, 10128-10134.	1.5	5
94	Crystalline compounds for remediation of rare-earth fission products: A review. Journal of Rare Earths, 2022, 40, 365-380.	2.5	5
95	Molecular Iodine Interactions with Fe, Ni, Cr, and Stainless Steel Alloys. Industrial & Engineering Chemistry Research, 2021, 60, 2447-2454.	1.8	5
96	Synthesis of Nd3BSi2O10 using a LiCl-flux method. Journal of Nuclear Materials, 2019, 515, 370-381.	1.3	4
97	Zinc-in-titania waste form for immobilizing lanthanide fission products from electrochemical reprocessing. Journal of Nuclear Materials, 2020, 539, 152313.	1.3	4
98	Molecular iodine interactions with metal substrates: Towards the understanding of iodine interactions in the environment following a nuclear accident. Journal of Nuclear Materials, 2021, 546, 152771.	1.3	4
99	Crystal structures and comparisons of huntite aluminum borates<i>RE</i>Al₃(BO₃)₄(<i>RE</i>= Tb, Dy and Ho). Acta Crystallographica Section E: Crystallographic Communications, 2020, 76, 339-343.	0.2	4
100	DC Ionization Conductivity of Amorphous Semiconductors for Radiation Detection Applications. IEEE Transactions on Nuclear Science, 2009, 56, 863-868.	1.2	3
101	Fourier-transform infrared spectroscopy for rapid screening and live-cell monitoring: application to nanotoxicology. Nanomedicine, 2013, 8, 145-156.	1.7	3
102	Perovskite-Derived Cs₂SnCl₆â€"Silica Composites as Advanced Waste Forms for Chloride Salt Wastes. Environmental Science & Technology, 2021, 55, 7605-7614.	4.6	3
103	Adsorption of iodine on metal coupons in humid and dry environments. Journal of Nuclear Materials, 2021, 556, 153204.	1.3	3
104	Synthesis and crystal structure of a neodymium borosilicate, Nd₃BSi₂O₁₀. Acta Crystallographica Section E: Crystallographic Communications, 2019, 75, 700-702.	0.2	3
105	Metallic technetium sequestration in nickel core/shell microstructure during Fe(OH)2 transformation with Ni doping. Journal of Hazardous Materials, 2022, 425, 127779.	6.5	3
106	Crystal structures and comparisons of potassium rare-earth molybdates K<i>RE</i>(MoO₄)₂ (<i>RE</i> = Tb, Dy, Ho, Er, Yb, and Lu). Acta Crystallographica Section E: Crystallographic Communications, 2020, 76, 1871-1875.	0.2	3
107	Laboratory-scale quartz crucible melter tests for vitrifying a high-MoO3 raffinate waste simulant. Progress in Nuclear Energy, 2019, 110, 13-23.	1.3	2
108	Viscosities and working region predictions for bismuth aluminoborosilicate glasses. International Journal of Applied Glass Science, 2019, 10, 190-201.	1.0	2

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109	Micrometer-sized magnetite synthesis using Fe(OH)2(s) as a precursor for technetium sequestration from liquid nuclear waste streams. Journal of Nuclear Materials, 2021, 552, 152964.	1.3	2
110	Dehydration synthesis and crystal structure of terbium oxychloride, TbOCl. Acta Crystallographica Section E: Crystallographic Communications, 2020, 76, 621-624.	0.2	2
111	Dechlorination Apparatus for Treating Chloride Salt Wastes: System Evaluation and Scale-Up. ACS Omega, 2021, 6, 32239-32252.	1.6	2
112	Influence of ion site occupancies on the unit cell parameters, specific volumes, and densities of M8(AlSiO4)6X2 sodalites where Mâ€‰=â€‰Li, Na, K, Rb, and Ag and Xâ€‰=â€‰Cl, Br, and I. Physics and Chemistry of Minerals, 2021, 48, 1.	3.3	1
113	Singleâ€componentâ€atâ€aâ€time variation study for glassâ€ceramic waste forms. Journal of the American Ceramic Society, 2021, 104, 3738-3749.	1.9	1
114	Effect of reduced dehalogenation on the performance of Y zeolite-based sintered waste forms. Journal of Nuclear Materials, 2021, 545, 152753.	1.3	1
115	Synthesis of Dysprosium Oxychloride (DyOCl). Journal of Chemical Crystallography, 0, , 1.	0.5	1
116	Effects of composition and canister centerline cooling on microstructure, phase distribution, and chemical durability of dehalogenated iron phosphate waste forms. Journal of Non-Crystalline Solids, 2022, 579, 121319.	1.5	1
117	Method Development for High Temperature In-Situ Neutron Diffraction Measurements of Glass Crystallization on Cooling from Melt. MRS Advances, 2019, 4, 1009-1019.	0.5	0
118	Energy-Dispersive X-ray Spectroscopy and Atom-probe Tomography Data Quantifying Component-Ratios of Multicomponent Nano-Precipitates in Ion-Irradiated Ceria. Data in Brief, 2021, 39, 107460.	0.5	0
119	Crystal structure and chemistry of tricadmium digermanium tetraarsenide, Cd₃Ge₂As₄. Acta Crystallographica Section E: Crystallographic Communications, 2019, 75, 1291-1296.	0.2	0
120	Synthesis and crystal structure of a mixed alkaline-earth powellite, Ca_{0.84}Sr_{0.16}MoO₄. Acta Crystallographica Section E: Crystallographic Communications, 2020, 76, 121-124.	0.2	0
121	Crystal structures and comparisons of potassium rare-earth molybdates K(MoO) (= Tb, Dy, Ho, Er, Yb,) Tj ETQq1 1 0.784314 rgBT /Ov	0.2	0
122	Thermal conversion in air of rare-earth fluorides to rare-earth oxyfluorides and rare-earth oxides. Journal of Nuclear Materials, 2022, 561, 153538.	1.3	0