

Brian J Riley

List of Publications by Year in descending order

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122
papers

3,686
citations

186209

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155592

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151
all docs

151
docs citations

151
times ranked

3086
citing authors

#	ARTICLE	IF	CITATIONS
1	Crystalline compounds for remediation of rare-earth fission products: A review. <i>Journal of Rare Earths</i> , 2022, 40, 365-380.	2.5	5
2	Effects of composition and canister centerline cooling on microstructure, phase distribution, and chemical durability of dehalogenated iron phosphate waste forms. <i>Journal of Non-Crystalline Solids</i> , 2022, 579, 121319.	1.5	1
3	Metallic technetium sequestration in nickel core/shell microstructure during Fe(OH) ₂ transformation with Ni doping. <i>Journal of Hazardous Materials</i> , 2022, 425, 127779.	6.5	3
4	Thermal conversion in air of rare-earth fluorides to rare-earth oxyfluorides and rare-earth oxides. <i>Journal of Nuclear Materials</i> , 2022, 561, 153538.	1.3	0
5	Cs ₃ Bi ₂ I ₉ -hydroxyapatite composite waste forms for cesium and iodine immobilization. <i>Journal of Advanced Ceramics</i> , 2022, 11, 712-728.	8.9	13
6	Sol-gel derived silica: A review of polymer-tailored properties for energy and environmental applications. <i>Microporous and Mesoporous Materials</i> , 2022, 336, 111874.	2.2	31
7	Review and experimental comparison of the durability of iodine waste forms in semi-dynamic leach testing. <i>Chemical Engineering Journal Advances</i> , 2022, 11, 100300.	2.4	7
8	Role of Zeolite Structural Properties toward Iodine Capture: A Head-to-head Evaluation of Framework Type and Chemical Composition. <i>ACS Applied Materials & Interfaces</i> , 2022, 14, 18439-18452.	4.0	27
9	Silver-Loaded Xerogel Nanostructures for Iodine Capture: A Comparison of Thiolated versus Unthiolated Sorbents. <i>ACS Applied Nano Materials</i> , 2022, 5, 9478-9494.	2.4	10
10	Immobilization of cesium and iodine into Cs ₃ Bi ₂ I ₉ perovskite-silica composites and core-shell waste forms with high waste loadings and chemical durability. <i>Journal of Hazardous Materials</i> , 2021, 401, 123279.	6.5	24
11	Molten salt reactors and electrochemical reprocessing: synthesis and chemical durability of potential waste forms for metal and salt waste streams. <i>International Materials Reviews</i> , 2021, 66, 339-363.	9.4	11
12	Syntheses and Crystal Structures of Rare-Earth Oxyapatites Ca ₂ RE ₈ (SiO ₄) ₆ O ₂ (RE = Pr, Tb, Ho, Tm). <i>Journal of Chemical Crystallography</i> , 2021, 51, 293-300.	0.5	6
13	Influence of ion site occupancies on the unit cell parameters, specific volumes, and densities of M ₈ (AlSiO ₄) ₆ X ₂ sodalites where M = Li, Na, K, Rb, and Ag and X = Cl, Br, and I. <i>Physics and Chemistry of Minerals</i> , 2021, 48, 1.	0.5	1
14	Molecular Iodine Interactions with Fe, Ni, Cr, and Stainless Steel Alloys. <i>Industrial & Engineering Chemistry Research</i> , 2021, 60, 2447-2454.	1.8	5
15	Single-component Ca ²⁺ time variation study for glass-ceramic waste forms. <i>Journal of the American Ceramic Society</i> , 2021, 104, 3738-3749.	1.9	1
16	Effect of reduced dehalogenation on the performance of Y zeolite-based sintered waste forms. <i>Journal of Nuclear Materials</i> , 2021, 545, 152753.	1.3	1
17	Iodine Capture with Mechanically Robust Heat-Treated Ag-Al-Si-O Xerogel Sorbents. <i>ACS Omega</i> , 2021, 6, 11628-11638.	1.6	14
18	Molecular iodine interactions with metal substrates: Towards the understanding of iodine interactions in the environment following a nuclear accident. <i>Journal of Nuclear Materials</i> , 2021, 546, 152771.	1.3	4

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19	Perovskite-Derived Cs ₂ SnCl ₆ Silica Composites as Advanced Waste Forms for Chloride Salt Wastes. <i>Environmental Science & Technology</i> , 2021, 55, 7605-7614.	4.6	3
20	Polyacrylonitrile Composites of Ag-Al-Si-O Aerogels and Xerogels as Iodine and Iodide Sorbents. <i>ACS Applied Polymer Materials</i> , 2021, 3, 3344-3353.	2.0	11
21	Micrometer-sized magnetite synthesis using Fe(OH) ₂ (s) as a precursor for technetium sequestration from liquid nuclear waste streams. <i>Journal of Nuclear Materials</i> , 2021, 552, 152964.	1.3	2
22	Adsorption of iodine on metal coupons in humid and dry environments. <i>Journal of Nuclear Materials</i> , 2021, 556, 153204.	1.3	3
23	Energy-Dispersive X-ray Spectroscopy and Atom-probe Tomography Data Quantifying Component-Ratios of Multicomponent Nano-Precipitates in Ion-Irradiated Ceria. <i>Data in Brief</i> , 2021, 39, 107460.	0.5	0
24	Review of molten salt reactor off-gas management considerations. <i>Nuclear Engineering and Design</i> , 2021, 385, 111529.	0.8	24
25	Dechlorination Apparatus for Treating Chloride Salt Wastes: System Evaluation and Scale-Up. <i>ACS Omega</i> , 2021, 6, 32239-32252.	1.6	2
26	Iodine Vapor Reactions with Pure Metal Wires at Temperatures of 100–139 °C in Air. <i>Industrial & Engineering Chemistry Research</i> , 2021, 60, 17162-17173.	1.8	11
27	Dehalogenation of electrochemical processing salt simulants with ammonium phosphates and immobilization of salt cations in an iron phosphate glass waste form. <i>Journal of Nuclear Materials</i> , 2020, 529, 151949.	1.3	16
28	Iodosodalite synthesis with hot isostatic pressing of precursors produced from aqueous and hydrothermal processes. <i>Journal of Nuclear Materials</i> , 2020, 538, 152222.	1.3	18
29	Sol-gel synthesis of idosodalite precursors and subsequent consolidation with a glass binder made from oxides and sol-gel routes. <i>Journal of Sol-Gel Science and Technology</i> , 2020, 96, 564-575.	1.1	7
30	Zinc-in-titania waste form for immobilizing lanthanide fission products from electrochemical reprocessing. <i>Journal of Nuclear Materials</i> , 2020, 539, 152313.	1.3	4
31	Metal-Organic Framework-Polyacrylonitrile Composite Beads for Xenon Capture. <i>ACS Applied Materials & Interfaces</i> , 2020, 12, 45342-45350.	4.0	25
32	Electrochemical Salt Wasteform Development: A Review of Salt Treatment and Immobilization Options. <i>Industrial & Engineering Chemistry Research</i> , 2020, 59, 9760-9774.	1.8	19
33	Hybrid Sorbents for ¹²⁹ I Capture from Contaminated Groundwater. <i>ACS Applied Materials & Interfaces</i> , 2020, 12, 26113-26126.	4.0	19
34	Gaseous Iodine Sorbents: A Comparison between Ag-Loaded Aerogel and Xerogel Scaffolds. <i>ACS Applied Materials & Interfaces</i> , 2020, 12, 26127-26136.	4.0	38
35	Glass waste form options for rare-earth fission products from electrochemical reprocessing. <i>Journal of Non-Crystalline Solids</i> , 2020, 545, 120161.	1.5	6
36	Environmental Remediation with Functional Aerogels and Xerogels. <i>Global Challenges</i> , 2020, 4, 2000013.	1.8	12

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37	Synthesis and characterization of sintered H ⁺ Y zeolite-derived waste forms for dehalogenated electrorefiner salt. <i>Ceramics International</i> , 2020, 46, 17707-17716.	2.3	9
38	Evaluation of Getter Metals in Na ⁺ Al ⁺ Si ⁺ O Aerogels and Xerogels for the Capture of Iodine Gas. <i>ACS Applied Materials & Interfaces</i> , 2020, 12, 19682-19692.	4.0	34
39	Crystal structures and comparisons of huntite aluminum borates $\text{Al}_3(\text{BO}_3)_4(\text{RE})$ (RE = Tb, Dy and Ho). <i>Acta Crystallographica Section E: Crystallographic Communications</i> , 2020, 76, 339-343.	0.2	4
40	Dehydration synthesis and crystal structure of terbium oxychloride, TbOCl. <i>Acta Crystallographica Section E: Crystallographic Communications</i> , 2020, 76, 621-624.	0.2	2
41	Synthesis and crystal structure of a mixed alkaline-earth powellite, $\text{Ca}_{0.84}\text{Sr}_{0.16}\text{MoO}_4$. <i>Acta Crystallographica Section E: Crystallographic Communications</i> , 2020, 76, 121-124.	0.2	0
42	Crystal structures and comparisons of potassium rare-earth molybdates $\text{K}(\text{MoO}_4)_2(\text{RE})$ (RE = Tb, Dy, Ho, Er, Yb). <i>Acta Crystallographica Section E: Crystallographic Communications</i> , 2020, 76, 1871-1875.	0.2	0
43	Crystal structures and comparisons of potassium rare-earth molybdates $\text{K}(\text{MoO}_4)_2(\text{RE})$ (RE = Tb, Dy, Ho, Er, Yb, and Lu). <i>Acta Crystallographica Section E: Crystallographic Communications</i> , 2020, 76, 1871-1875.	0.2	3
44	Method Development for High Temperature In-Situ Neutron Diffraction Measurements of Glass Crystallization on Cooling from Melt. <i>MRS Advances</i> , 2019, 4, 1009-1019.	0.5	0
45	Glass structure and crystallization in boro-alumino-silicate glasses containing rare earth and transition metal cations: a US-UK collaborative program. <i>MRS Advances</i> , 2019, 4, 1029-1043.	0.5	6
46	Crystallization study of rare earth and molybdenum containing nuclear waste glass ceramics. <i>Journal of the American Ceramic Society</i> , 2019, 102, 5149-5163.	1.9	11
47	Molten salt reactor waste and effluent management strategies: A review. <i>Nuclear Engineering and Design</i> , 2019, 345, 94-109.	0.8	56
48	Laboratory-scale quartz crucible melter tests for vitrifying a high-MoO ₃ raffinate waste simulant. <i>Progress in Nuclear Energy</i> , 2019, 110, 13-23.	1.3	2
49	Investigation of physical and chemical properties for upgraded SAP (SiO ₂ Al ₂ O ₃ P ₂ O ₅) waste form to immobilize radioactive waste salt. <i>Journal of Nuclear Materials</i> , 2019, 515, 382-391.	1.3	13
50	Synthesis of Nd ₃ BSi ₂ O ₁₀ using a LiCl-flux method. <i>Journal of Nuclear Materials</i> , 2019, 515, 370-381.	1.3	4
51	Kinetics of oxyapatite [Ca ₂ Nd ₈ (SiO ₄) ₆ O ₂] and powellite [(Ca,Sr,Ba)MoO ₄] dissolution in glass-ceramic nuclear waste forms in acidic, neutral, and alkaline conditions. <i>Journal of Nuclear Materials</i> , 2019, 515, 227-237.	1.3	17
52	Viscosities and working region predictions for bismuth aluminoborosilicate glasses. <i>International Journal of Applied Glass Science</i> , 2019, 10, 190-201.	1.0	2
53	Synthesis and crystal structure of a neodymium borosilicate, Nd ₃ BSi ₂ O ₁₀ . <i>Acta Crystallographica Section E: Crystallographic Communications</i> , 2019, 75, 700-702.	0.2	3
54	Syntheses, crystal structures, and comparisons of rare-earth oxyapatites $\text{Ca}_2(\text{RE})_8(\text{SiO}_4)_6\text{O}_2$ (RE = La, Nd, Sm, Eu, or Yb) and $\text{NaLa}_9(\text{SiO}_4)_6\text{O}_2$. <i>Acta Crystallographica Section E: Crystallographic Communications</i> , 2019, 75, 1020-1025.	0.2	16

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55	Crystal structure and chemistry of tricadmium digermanium tetraarsenide, Cd ₃ Ge ₂ As ₄ . Acta Crystallographica Section E: Crystallographic Communications, 2019, 75, 1291-1296.	0.2	0
56	Iodosodalite Waste Forms from Low-Temperature Aqueous Process. MRS Advances, 2018, 3, 1093-1103.	0.5	17
57	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
58	Immobilization of LiCl-Li ₂ O pyroprocessing salt wastes in chlorosodalite using glass-bonded hydrothermal and salt-occlusion methods. Journal of Nuclear Materials, 2018, 502, 236-246.	1.3	6
59	Waste form evaluation for RECl ₃ and REO fission products separated from used electrochemical salt. Progress in Nuclear Energy, 2018, 104, 102-108.	1.3	14
60	Synthesis and characterization of oxyapatite [Ca ₂ Nd ₈ (SiO ₄) ₆ O ₂] and mixed-alkaline-earth powellite [(Ca,Sr,Ba)MoO ₄] for a glass-ceramic waste form. Journal of Nuclear Materials, 2018, 510, 623-634.	1.3	21
61	Glass-bonded iodosodalite waste form for immobilization of ¹²⁹ I. Journal of Nuclear Materials, 2018, 504, 109-121.	1.3	50
62	Chalcogenide Aerogels as Sorbents for Noble Gases (Xe, Kr). ACS Applied Materials & Interfaces, 2017, 9, 33389-33394.	4.0	25
63	Glass binder development for a glass-bonded sodalite ceramic waste form. Journal of Nuclear Materials, 2017, 489, 42-63.	1.3	34
64	Synthesis and characterization of iodosodalite. Journal of the American Ceramic Society, 2017, 100, 2273-2284.	1.9	33
65	Silver-Loaded Aluminosilicate Aerogels As Iodine Sorbents. ACS Applied Materials & Interfaces, 2017, 9, 32907-32919.	4.0	53
66	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
67	Reduction and Simultaneous Removal of ⁹⁹ Tc and Cr by Fe(OH) ₂ (s) Mineral Transformation. Environmental Science & Technology, 2017, 51, 8635-8642.	4.6	68
68	Conversion of Nuclear Waste to Molten Glass: Cold-Cap Reactions in Crucible Tests. Journal of the American Ceramic Society, 2016, 99, 2964-2970.	1.9	36
69	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
70	Dilute condition corrosion behavior of glass-ceramic waste form. Journal of Nuclear Materials, 2016, 482, 1-11.	1.3	25
71	Component effects on crystallization of RE-containing aluminoborosilicate glass. Journal of Nuclear Materials, 2016, 478, 261-267.	1.3	12
72	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

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73	Removal of TcO ₄ ⁻ from Representative Nuclear Waste Streams with Layered Potassium Metal Sulfide Materials. <i>Chemistry of Materials</i> , 2016, 28, 3976-3983.	3.2	56
74	Materials and processes for the effective capture and immobilization of radioiodine: A review. <i>Journal of Nuclear Materials</i> , 2016, 470, 307-326.	1.3	437
75	Solution-derived sodalite made with Si- and Ge-ethoxide precursors for immobilizing electrorefiner salt. <i>Journal of Nuclear Materials</i> , 2016, 468, 140-146.	1.3	10
76	Liquidus temperature and chemical durability of selected glasses to immobilize rare earth oxides waste. <i>Journal of Nuclear Materials</i> , 2015, 465, 657-663.	1.3	28
77	Consolidation of Tin Sulfide Chalcogels and Xerogels with and without Adsorbed Iodine. <i>Industrial & Engineering Chemistry Research</i> , 2015, 54, 11259-11267.	1.8	17
78	Melter Feed Reactions at 700°C for Nuclear Waste Vitrification. <i>Journal of the American Ceramic Society</i> , 2015, 98, 3105-3111.	1.9	21
79	Incorporating technetium in minerals and other solids: A review. <i>Journal of Nuclear Materials</i> , 2015, 466, 526-538.	1.3	35
80	Infrared-transparent glass ceramics: An exploratory study. <i>Journal of Non-Crystalline Solids</i> , 2015, 410, 160-173.	1.5	14
81	Temperature Distribution within a Cold Cap during Nuclear Waste Vitrification. <i>Environmental Science & Technology</i> , 2015, 49, 8856-8863.	4.6	45
82	Chalcogenide Aerogels as Sorbents for Radioactive Iodine. <i>Chemistry of Materials</i> , 2015, 27, 2619-2626.	3.2	186
83	The Influence of Constitutional Supercooling on the Distribution of Te-Particles in Melt-Grown CZT. <i>Journal of Electronic Materials</i> , 2015, 44, 4604-4621.	1.0	7
84	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. <i>Journal of Nuclear Materials</i> , 2015, 459, 313-322.	1.3	11
85	The effect of high-level waste glass composition on spinel liquidus temperature. <i>Journal of Non-Crystalline Solids</i> , 2014, 384, 32-40.	1.5	22
86	Cold crucible induction melter studies for making glass ceramic waste forms: A feasibility assessment. <i>Journal of Nuclear Materials</i> , 2014, 444, 481-492.	1.3	82
87	Compositional trends of ^{137}Cs -induced optical changes observed in chalcogenide glasses of binary AsS system. <i>Journal of Non-Crystalline Solids</i> , 2014, 386, 95-99.	1.5	11
88	Polyacrylonitrile-Chalcogel Hybrid Sorbents for Radioiodine Capture. <i>Environmental Science & Technology</i> , 2014, 48, 5832-5839.	4.6	90
89	Radiation stability test on multiphase glass ceramic and crystalline ceramic waste forms. <i>Nuclear Instruments & Methods in Physics Research B</i> , 2014, 326, 293-297.	0.6	19
90	Iodine solubility in a low-activity waste borosilicate glass at 1000°C . <i>Journal of Nuclear Materials</i> , 2014, 452, 178-188.	1.3	60

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91	Infrared-transmitting glass-ceramics: a review. Proceedings of SPIE, 2013, , .	0.8	8
92	Sublimationâ€“Condensation of Multiscale Tellurium Structures. Journal of Physical Chemistry C, 2013, 117, 10128-10134.	1.5	5
93	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
94	Structure of Rheniumâ€“Containing Sodium Borosilicate Glass. International Journal of Applied Glass Science, 2013, 4, 42-52.	1.0	25
95	Structure and Chemistry in Halide Leadâ€“Tellurite Glasses. Journal of Physical Chemistry C, 2013, 117, 3456-3466.	1.5	21
96	Chalcogen-Based Aerogels As Sorbents for Radionuclide Remediation. Environmental Science & Technology, 2013, 47, 7540-7547.	4.6	161
97	Fourier-transform infrared spectroscopy for rapid screening and live-cell monitoring: application to nanotoxicology. Nanomedicine, 2013, 8, 145-156.	1.7	3
98	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
99	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
100	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
101	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
102	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
103	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
104	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
105	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
106	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
107	Chalcogen-based aerogels as a multifunctional platform for remediation of radioactive iodine. RSC Advances, 2011, 1, 1704.	1.7	85
108	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

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109	Thermal and gamma-ray induced relaxation in As ³⁺ S glasses: modelling and experiment. Journal Physics D: Applied Physics, 2011, 44, 395402.	1.3	6
110	The Predictive Power of Electronic Polarizability for Tailoring the Refractivity of High-Index Glasses: Optical Basicity Versus the Single Oscillator Model. Journal of the American Ceramic Society, 2010, 93, 1650-1662.	1.9	22
111	Cluster formation of silica particles in glass batches during melting. Journal of Non-Crystalline Solids, 2010, 356, 1359-1367.	1.5	66
112	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
113	Synthesis and Characterization of Bulk, Vitreous Cadmium Germanium Arsenide. Journal of the American Ceramic Society, 2009, 92, 1236-1243.	1.9	10
114	Binary Phase Diagram of the Manganese Oxide- ²⁺ Iron Oxide System. Journal of the American Ceramic Society, 2009, 92, 2378-2384.	1.9	44
115	DC Ionization Conductivity of Amorphous Semiconductors for Radiation Detection Applications. IEEE Transactions on Nuclear Science, 2009, 56, 863-868.	1.2	3
116	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
117	Differential etching of chalcogenides for infrared photonic waveguide structures. Journal of Non-Crystalline Solids, 2008, 354, 813-816.	1.5	6
118	Adsorbed Proteins Influence the Biological Activity and Molecular Targeting of Nanomaterials. Toxicological Sciences, 2007, 100, 303-315.	1.4	414
119	Single-mode low-loss chalcogenide glass waveguides for the mid-infrared. Optics Letters, 2006, 31, 1860.	1.7	130
120	Chalcogenide glasses and structures for quantum sensing. , 2004, 5359, 234.		11
121	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
122	Synthesis of Dysprosium Oxychloride (DyOCl). Journal of Chemical Crystallography, 0, , 1.	0.5	1