

# Elizabeth J Opila

## List of Publications by Year in descending order

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56  
papers

4,632  
citations

186265

28  
h-index

175258

52  
g-index

62  
all docs

62  
docs citations

62  
times ranked

2057  
citing authors

#	ARTICLE	IF	CITATIONS
1	Evaluation of ultra-high temperature ceramics for aer propulsion use. Journal of the European Ceramic Society, 2002, 22, 2757-2767.	5.7	710
2	Paralinear Oxidation of CVD SiC in Water Vapor. Journal of the American Ceramic Society, 1997, 80, 197-205.	3.8	433
3	SiC Recession Caused by SiO <sub>2</sub> Scale Volatility under Combustion Conditions: II, Thermodynamics and Gaseous Diffusion Model. Journal of the American Ceramic Society, 1999, 82, 1826-1834.	3.8	296
4	Variation of the Oxidation Rate of Silicon Carbide with Water Vapor Pressure. Journal of the American Ceramic Society, 1999, 82, 625-636.	3.8	295
5	Oxidation and Volatilization of Silica Formers in Water Vapor. Journal of the American Ceramic Society, 2003, 86, 1238-1248.	3.8	278
6	A Comparison of the Oxidation Kinetics of SiC and Si <sub>3</sub> N <sub>4</sub> . Journal of the Electrochemical Society, 1995, 142, 925-930.	2.9	194
7	Theoretical and Experimental Investigation of the Thermochemistry of CrO <sub>2</sub> (OH) <sub>2</sub> (g). Journal of Physical Chemistry A, 2007, 111, 1971-1980.	2.5	189
8	Oxidation Kinetics of Chemically Vapor-Deposited Silicon Carbide in Wet Oxygen. Journal of the American Ceramic Society, 1994, 77, 730-736.	3.8	187
9	Predicting oxide stability in high-temperature water vapor. Jom, 2006, 58, 22-28.	1.9	168
10	Mass Spectrometric Identification of Si <sup>-</sup> O <sup>-</sup> H( <i>g</i> ) Species from the Reaction of Silica with Water Vapor at Atmospheric Pressure. Journal of the American Ceramic Society, 1997, 80, 1009-1012.	3.8	160
11	SiC and Si <sub>3</sub> N <sub>4</sub> recession due to SiO <sub>2</sub> scale volatility under combustor conditions. Advanced Composite Materials, 1999, 8, 33-45.	1.9	148
12	Oxidation and corrosion of ceramics and ceramic matrix composites. Current Opinion in Solid State and Materials Science, 2001, 5, 301-309.	11.5	124
13	Alumina Volatility in Water Vapor at Elevated Temperatures. Journal of the American Ceramic Society, 2004, 87, 1701-1705.	3.8	120
14	Water Vapor-Mediated Volatilization of High-Temperature Materials. Annual Review of Materials Research, 2013, 43, 559-588.	9.3	108
15	Part I: Theoretical predictions of preferential oxidation in refractory high entropy materials. Acta Materialia, 2020, 197, 20-27.	7.9	94
16	Thermodynamics of gas phase species in the Si <sup>-</sup> O <sup>-</sup> H system. Journal of Chemical Thermodynamics, 2005, 37, 1130-1137.	2.0	88
17	Part II: Experimental verification of computationally predicted preferential oxidation of refractory high entropy ultra-high temperature ceramics. Acta Materialia, 2020, 197, 81-90.	7.9	88
18	Oxygen Tracer Diffusion in La <sub>2-x</sub> Sr <sub>x</sub> CuO <sub>4-y</sub> Single Crystals. Journal of the American Ceramic Society, 1993, 76, 2363-2369.	3.8	80

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19	Paralinear Oxidation of Silicon Nitride in a Water Vapor/Oxygen Environment. Journal of the American Ceramic Society, 2003, 86, 1256-1261.	3.8	73
20	Effect of Environment on the Stress-Rupture Behavior of a Carbon-Fiber-Reinforced Silicon Carbide Ceramic Matrix Composite. Journal of the American Ceramic Society, 2004, 87, 1536-1542.	3.8	65
21	Thermodynamic assessment of the group IV, V and VI oxides for the design of oxidation resistant multi-principal component materials. Journal of the European Ceramic Society, 2019, 39, 1796-1802.	5.7	63
22	Oxidation of ZrB <sub>2</sub> -SiC. , 0, , 221-228.		59
23	Oxidation of Ultrahigh Temperature Ceramics in Water Vapor. Journal of the Electrochemical Society, 2004, 151, B558.	2.9	53
24	Oxidation of Chemically Vapor-Deposited Silicon Carbide in Carbon Dioxide. Journal of the American Ceramic Society, 1998, 81, 1949-1952.	3.8	52
25	Additive Effects on Si <sub>3</sub> N <sub>4</sub> Oxidation/Volatilization in Water Vapor. Journal of the American Ceramic Society, 2003, 86, 1262-1271.	3.8	39
26	Borosilicate Glass-Induced Fiber Degradation of SiC/BN/SiC Composites Exposed in Combustion Environments. International Journal of Applied Ceramic Technology, 2016, 13, 434-442.	2.1	39
27	A method for assessing the volatility of oxides in high-temperature high-velocity water vapor. Journal of the European Ceramic Society, 2016, 36, 1135-1147.	5.7	39
28	Thermogravimetric Analysis and Defect Models of the Oxygen Nonstoichiometry in La <sub>2-x</sub> Sr <sub>x</sub> CuO <sub>4-y</sub> . Journal of the American Ceramic Society, 1994, 77, 2727-2737.	3.8	31
29	Oxidation of Carbon Fiber-Reinforced Silicon Carbide Matrix Composites at Reduced Oxygen Partial Pressures. Journal of the American Ceramic Society, 2011, 94, 2185-2192.	3.8	29
30	Silicon carbide fiber oxidation behavior in the presence of boron nitride. Journal of the American Ceramic Society, 2018, 101, 5534-5551.	3.8	27
31	Observation of solid-state bidirectional thermal conductivity switching in antiferroelectric lead zirconate (PbZrO <sub>3</sub> ). Nature Communications, 2022, 13, 1573.	12.8	25
32	Stability of the Y <sub>2</sub> O <sub>3</sub> -SiO <sub>2</sub> system in high-temperature, high-velocity water vapor. Journal of the American Ceramic Society, 2020, 103, 2715-2726.	3.8	21
33	Thermochemical stability of Y <sub>2</sub> Si <sub>2</sub> O <sub>7</sub> in high-temperature water vapor. Journal of the American Ceramic Society, 2020, 103, 4517-4535.	3.8	19
34	Paralinear Oxidation of CVD SiC in Simulated Fuel-Rich Combustion. Journal of the American Ceramic Society, 2000, 83, 1761-1767.	3.8	18
35	Local thermal conductivity measurements to determine the fraction of $\beta$ -cristobalite in thermally grown oxides for aerospace applications. Scripta Materialia, 2020, 177, 214-217.	5.2	18
36	Characterization of Thermochemical and Thermomechanical Properties of Eyjafjallajökull Volcanic Ash Glass. Coatings, 2020, 10, 100.	2.6	18

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37	Oxidation of SiC Fiber-Reinforced SiC Matrix Composites with a BN Interphase. <i>Materials Science Forum</i> , 0, 696, 342-347.	0.3	17
38	High-temperature oxidation of yttrium silicides. <i>Journal of Materials Science</i> , 2018, 53, 3981-4000.	3.7	17
39	Evolution of microstructure and thermal conductivity of multifunctional environmental barrier coating systems. <i>Materials Today Physics</i> , 2021, 17, 100304.	6.0	16
40	Viscosity of CaO-MgO-Al <sub>2</sub> O <sub>3</sub> -SiO <sub>2</sub> (CMAS) melts: Experimental measurements and comparison to model calculations. <i>Journal of Non-Crystalline Solids</i> , 2022, 584, 121508.	3.1	16
41	High-temperature Na <sub>2</sub> SO <sub>4</sub> Deposit-Assisted Corrosion of Silicon Carbide II: Temperature and Time Dependence. <i>Journal of the American Ceramic Society</i> , 2015, 98, 1275-1284.	3.8	13
42	Thermochemistry of volatile metal hydroxides and oxyhydroxides at elevated temperatures. <i>Journal of Materials Research</i> , 2019, 34, 394-407.	2.6	12
43	Anisotropic thermal conductivity tensor of $\hat{\Gamma}^2$ -Y <sub>2</sub> Si <sub>2</sub> O <sub>7</sub> for orientational control of heat flow on micrometer scales. <i>Acta Materialia</i> , 2020, 189, 299-305.	7.9	12
44	Cyclic Oxidation of Monolithic SiC and Si <sub>3</sub> N <sub>4</sub> Materials. , 0, , 367-374.		12
45	Mixed phase ytterbium silicate environmental-barrier coating materials for improved calcium-magnesium-alumino-silicate resistance. <i>Journal of Materials Research</i> , 2020, 35, 2358-2372.	2.6	11
46	Oxidation Behavior of Prospective Silicon Nitride Materials for Advanced Microturbine Applications. , 2001, , .		8
47	High-temperature water-vapor reaction mechanism of barium strontium aluminosilicate (BSAS). <i>Journal of the European Ceramic Society</i> , 2022, 42, 3305-3312.	5.7	7
48	Thermomechanical and thermochemical stability of HfSiO <sub>4</sub> for environmental barrier coating applications. <i>Journal of the American Ceramic Society</i> , 2021, 104, 3593-3602.	3.8	6
49	High-temperature Na <sub>2</sub> SO <sub>4</sub> interaction with air plasma sprayed Yb <sub>2</sub> Si <sub>2</sub> O <sub>7</sub> - $\hat{\Gamma}^2$ -Si EBC system: Topcoat behavior. <i>Journal of the American Ceramic Society</i> , 2021, 104, 6496-6507.	3.8	6
50	The Transport Properties and Defect Chemistry of La <sub>2</sub> -XSrxCuO <sub>4</sub> - $\hat{\Gamma}^2$ . <i>Materials Research Society Symposia Proceedings</i> , 1989, 169, 65.	0.1	5
51	High-temperature Na <sub>2</sub> SO <sub>4</sub> deposit-assisted corrosion of silicon carbide II: Effects of B, C, and Si. <i>Journal of the American Ceramic Society</i> , 2017, 100, 761-773.	3.8	5
52	Sol-gel derived borosilicate glasses and thin film coatings on SiC substrates: Boron loss and carbon retention due to processing and heat treatment. <i>Journal of Non-Crystalline Solids</i> , 2016, 449, 59-69.	3.1	4
53	Na <sub>2</sub> SO <sub>4</sub> deposit-induced hot corrosion of SiC fibers relevant for SiC CMCs. <i>Journal of the American Ceramic Society</i> , 2021, 104, 5908-5922.	3.8	3
54	The Oxygen Defect Chemistry of La <sub>2</sub> -xSrxCuO <sub>4</sub> - $\hat{\Gamma}^2$ . <i>Materials Research Society Symposia Proceedings</i> , 1990, 209, 867.	0.1	2

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55	Computational Chemistry Derivation of Cr, Mn, and La Hydroxide and Oxyhydroxide Thermodynamics. Journal of Physical Chemistry A, 2022, 126, 1551-1561.	2.5	2
56	Quantitative Evaluation of (0001) Sapphire Recession in High-Temperature High-Velocity Steamjet Exposures. Journal of the European Ceramic Society, 2021, , .	5.7	0