

# Nathan S Jacobson

## 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.

82  
papers

3,942  
citations

33  
h-index

62  
g-index

89  
ext. papers

4,361  
ext. citations

3.5  
avg, IF

5.54  
L-index

#	Paper	IF	Citations
82	Thermodynamics of the TiAlO system. <i>Calphad: Computer Coupling of Phase Diagrams and Thermochemistry</i> , <b>2022</b> , 77, 102400	1.9	0
81	Thermochemistry of Gaseous Ytterbium and Gadolinium Hydroxides and Oxyhydroxides. <i>Journal of Physical Chemistry A</i> , <b>2021</b> , 125, 2913-2922	2.8	1
80	Thermodynamics of the Lu <sub>2</sub> O <sub>3</sub> -SiO <sub>2</sub> system and comparison to other rare earth silicates. <i>Journal of Chemical Thermodynamics</i> , <b>2021</b> , 161, 106483	2.9	1
79	Thermodynamics of high-temperature aluminum, zirconium, and yttrium hydroxide and oxyhydroxide vapor species. <i>Journal of the American Ceramic Society</i> , <b>2020</b> , 103, 5870-5880	3.8	3
78	Volatile element chemistry during accretion of the earth. <i>Chemie Der Erde</i> , <b>2020</b> , 80, 125594	4.3	9
77	Solubility of CO <sub>2</sub> in Sodium Silicate Melts. <i>ACS Earth and Space Chemistry</i> , <b>2020</b> , 4, 2113-2120	3.2	1
76	Solubility of Water in Carbonatites. <i>ACS Earth and Space Chemistry</i> , <b>2020</b> , 4, 2144-2152	3.2	1
75	Vaporization of Protective Oxide Films into Different Gas Atmospheres. <i>Oxidation of Metals</i> , <b>2020</b> , 93, 247-282	1.6	5
74	Thermochemistry of volatile metal hydroxides and oxyhydroxides at elevated temperatures. <i>Journal of Materials Research</i> , <b>2019</b> , 34, 394-407	2.5	9
73	Introduction to proceedings of the workshop on Knudsen Effusion Mass Spectrometry. <i>Calphad: Computer Coupling of Phase Diagrams and Thermochemistry</i> , <b>2019</b> , 65, 111-126	1.9	2
72	Quantum chemical calculations of the thermochemistry of tantalum oxyhydroxide species. <i>Journal of the American Ceramic Society</i> , <b>2019</b> , 102, 3836-3842	3.8	5
71	Identification of volatile metal hydroxides with free jet expansion sampling mass spectrometry. <i>Calphad: Computer Coupling of Phase Diagrams and Thermochemistry</i> , <b>2019</b> , 65, 73-78	1.9	1
70	Thermodynamics of reaction between gas-turbine ceramic coatings and ingested CMAS corrodents. <i>Journal of the American Ceramic Society</i> , <b>2019</b> , 102, 2948-2964	3.8	22
69	Vaporization and thermodynamics of forsterite-rich olivine and some implications for silicate atmospheres of hot rocky exoplanets. <i>Icarus</i> , <b>2017</b> , 289, 42-55	3.8	19
68	Vaporization coefficients of SiO <sub>2</sub> and MgO. <i>Journal of the European Ceramic Society</i> , <b>2017</b> , 37, 2245-2258		7
67	Monte Carlo simulation of a Knudsen effusion mass spectrometer sampling system. <i>Rapid Communications in Mass Spectrometry</i> , <b>2017</b> , 31, 1041-1046	2.2	5
66	Interactions of Ta <sub>2</sub> O <sub>5</sub> with water vapor at elevated temperatures. <i>Journal of the American Ceramic Society</i> , <b>2017</b> , 100, 2353-2357	3.8	8

65	Influence of silicon on high-temperature (600 °C) chlorosilane interactions with iron. <i>Solar Energy Materials and Solar Cells</i> , <b>2017</b> , 160, 410-417	6.4	
64	Thermodynamic Constraints on the Lower Atmosphere of Venus. <i>ACS Earth and Space Chemistry</i> , <b>2017</b> , 1, 422-430	3.2	4
63	Computational and Experimental Study of Thermodynamics of the Reaction of Titania and Water at High Temperatures. <i>Journal of Physical Chemistry A</i> , <b>2017</b> , 121, 9508-9517	2.8	15
62	High Temperature Chlorosilane Corrosion of AISI 316L. <i>Journal of the Electrochemical Society</i> , <b>2016</b> , 163, C452-C458	3.9	5
61	Combustion Methods for Measuring Low Levels of Carbon in Nickel, Copper, Silver, and Gold. <i>Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science</i> , <b>2016</b> , 47, 3533-3543	2.5	3
60	High-Temperature (550-700°C) Chlorosilane Interactions with Iron. <i>Journal of the Electrochemical Society</i> , <b>2016</b> , 163, C666-C674	3.9	2
59	SOLUBILITY OF ROCK IN STEAM ATMOSPHERES OF PLANETS. <i>Astrophysical Journal</i> , <b>2016</b> , 824, 103	4.7	28
58	Mass spectrometric measurements of the silica activity in the Yb <sub>2</sub> O <sub>3</sub> BiO <sub>2</sub> system and implications to assess the degradation of silicate-based coatings in combustion environments. <i>Journal of the European Ceramic Society</i> , <b>2015</b> , 35, 4259-4267	6	39
57	Oxidation and Corrosion of Ceramics <b>2014</b> , 1-93		
56	Silica Activity Measurements in the Y <sub>2</sub> O <sub>3</sub> BiO <sub>2</sub> System and Applications to Modeling of Coating Volatility. <i>Journal of the American Ceramic Society</i> , <b>2014</b> , 97, 1959-1965	3.8	33
55	Water Vapor-Mediated Volatilization of High-Temperature Materials. <i>Annual Review of Materials Research</i> , <b>2013</b> , 43, 559-588	12.8	80
54	Oxidation Transitions for SiC Part I. Active-to-Passive Transitions. <i>Journal of the American Ceramic Society</i> , <b>2013</b> , 96, 838-844	3.8	71
53	Oxidation Transitions for SiC Part II. Passive-to-Active Transitions. <i>Journal of the American Ceramic Society</i> , <b>2013</b> , 96, 606-612	3.8	69
52	Oxidation and Corrosion of Ceramics <b>2013</b> , 1-93		0
51	A Thermoanalytical Study of the Conversion of Amorphous Silicon Fibers to SiC. <i>International Journal of Applied Ceramic Technology</i> , <b>2012</b> , 9, 816-822	2	4
50	Measuring Thermodynamic Properties of Metals and Alloys <b>2012</b> , 1143-1180		2
49	Active oxidation of silicon carbide. <i>Materials at High Temperatures</i> , <b>2012</b> , 29, 193-198	1.1	6
48	Active Oxidation of SiC. <i>Oxidation of Metals</i> , <b>2011</b> , 75, 1-25	1.6	99

47	High-temperature vaporization of B <sub>2</sub> O <sub>3</sub> (l) under reducing conditions. <i>Journal of Physical Chemistry B</i> , <b>2011</b> , 115, 13253-60	3.4	13
46	Characterization and Oxidation Behavior of Rayon-Derived Carbon Fibers. <i>Oxidation of Metals</i> , <b>2010</b> , 74, 193-203	1.6	3
45	Nondestructive Evaluation (NDE) for Characterizing Oxidation Damage in Cracked Reinforced Carbon/Carbon. <i>International Journal of Applied Ceramic Technology</i> , <b>2009</b> , 7, 652-661	2	
44	Oxidation of FeCrAlY Fibers at Low Oxygen Potentials. <i>Oxidation of Metals</i> , <b>2008</b> , 69, 343-358	1.6	2
43	Oxidation through coating cracks of SiC-protected carbon/carbon. <i>Surface and Coatings Technology</i> , <b>2008</b> , 203, 372-383	4.4	85
42	Theoretical and experimental investigation of the thermochemistry of CrO <sub>2</sub> (OH) <sub>2</sub> (g). <i>Journal of Physical Chemistry A</i> , <b>2007</b> , 111, 1971-80	2.8	153
41	Predicting oxide stability in high-temperature water vapor. <i>Jom</i> , <b>2006</b> , 58, 22-28	2.1	135
40	Oxidation microstructure studies of reinforced carbon/carbon. <i>Carbon</i> , <b>2006</b> , 44, 1142-1150	10.4	258
39	Thermodynamics of gas phase species in the SiO <sub>2</sub> H <sub>2</sub> O system. <i>Journal of Chemical Thermodynamics</i> , <b>2005</b> , 37, 1130-1137	2.9	73
38	Mass Spectrometric Identification of SiO <sub>2</sub> H <sub>2</sub> O(g) Species from the Reaction of Silica with Water Vapor at Atmospheric Pressure. <i>Journal of the American Ceramic Society</i> , <b>2005</b> , 80, 1009-1012	3.8	124
37	Interactions of water vapor with oxides at elevated temperatures. <i>Journal of Physics and Chemistry of Solids</i> , <b>2005</b> , 66, 471-478	3.9	78
36	High-Temperature Oxidation of Boron Nitride: II, Boron Nitride Layers in Composites. <i>Journal of the American Ceramic Society</i> , <b>2004</b> , 82, 1473-1482	3.8	131
35	High-Temperature Oxidation of Boron Nitride: I, Monolithic Boron Nitride. <i>Journal of the American Ceramic Society</i> , <b>2004</b> , 82, 393-398	3.8	117
34	High-Temperature Stability of Alumina in Argon and Argon/Water-Vapor Environments. <i>Journal of the American Ceramic Society</i> , <b>2004</b> , 82, 245-248	3.8	18
33	The influence of tungsten on the chemical composition of a temporally evolving nanostructure of a model Ni-Al-Cr superalloy. <i>Microscopy and Microanalysis</i> , <b>2004</b> , 10, 355-65	0.5	50
32	Oxidation and corrosion of ceramics and ceramic matrix composites. <i>Current Opinion in Solid State and Materials Science</i> , <b>2001</b> , 5, 301-309	12	107
31	SiC and Si <sub>3</sub> N <sub>4</sub> recession due to SiO <sub>2</sub> scale volatility under combustor conditions. <i>Advanced Composite Materials</i> , <b>1999</b> , 8, 33-45	2.8	119
30	SiC Recession Caused by SiO <sub>2</sub> Scale Volatility under Combustion Conditions: II, Thermodynamics and Gaseous-Diffusion Model. <i>Journal of the American Ceramic Society</i> , <b>1999</b> , 82, 1826-1834	3.8	241

29	Oxidative attack of carbon/carbon substrates through coating pinholes. <i>Carbon</i> , <b>1999</b> , 37, 411-419	10.4	34
28	Thermodynamics of Selected Ti-Al and Ti-Al-Cr Alloys. <i>Oxidation of Metals</i> , <b>1999</b> , 52, 537-556	1.6	36
27	Corrosion of Mullite by Molten Salts. <i>Journal of the American Ceramic Society</i> , <b>1996</b> , 79, 2161-2167	3.8	38
26	New Generation of Plasma-Sprayed Mullite Coatings on Silicon Carbide. <i>Journal of the American Ceramic Society</i> , <b>1995</b> , 78, 705-710	3.8	183
25	Chemical Stability of the Fiber Coating Matrix Interface in Silicon-Based Ceramic Matrix Composites. <i>Journal of the American Ceramic Society</i> , <b>1995</b> , 78, 711-715	3.8	24
24	Refractory Oxide Coatings on SiC Ceramics. <i>MRS Bulletin</i> , <b>1994</b> , 19, 35-38	3.2	22
23	Corrosion of Silicon-Based Ceramics in Combustion Environments. <i>Journal of the American Ceramic Society</i> , <b>1993</b> , 76, 3-28	3.8	609
22	Chemical Reactions in the Processing of MoSi <sub>2</sub> Carbon Compacts. <i>Journal of the American Ceramic Society</i> , <b>1993</b> , 76, 2005-2009	3.8	15
21	Thermodynamics of iron-aluminum alloys at 1573 K. <i>Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science</i> , <b>1993</b> , 24, 481-486	2.5	25
20	Volatile species in halide-activated diffusion coating packs. <i>Oxidation of Metals</i> , <b>1992</b> , 38, 33-43	1.6	24
19	Reactions of Silicon Carbide and Silicon(IV) Oxide at Elevated Temperatures. <i>Journal of the American Ceramic Society</i> , <b>1992</b> , 75, 1603-1611	3.8	100
18	Reactions of SiC with H <sub>2</sub> /H <sub>2</sub> O/Ar Mixtures at 1300°C. <i>Journal of the American Ceramic Society</i> , <b>1990</b> , 73, 2330-2332	3.8	35
17	Corrosion of cordierite ceramics by sodium sulphate at 1000°C. <i>Journal of Materials Science</i> , <b>1989</b> , 24, 2903-2910	4.3	10
16	Sodium sulfate: Deposition and dissolution of silica. <i>Oxidation of Metals</i> , <b>1989</b> , 31, 91-103	1.6	41
15	Reactions of Silicon-Based Ceramics in Mixed Oxidation Chlorination Environments. <i>Journal of the American Ceramic Society</i> , <b>1988</b> , 71, 1067-1073	3.8	31
14	Molten-Salt Corrosion of Silicon Nitride: I, Sodium Carbonate. <i>Journal of the American Ceramic Society</i> , <b>1988</b> , 71, 128-138	3.8	45
13	Molten-Salt Corrosion of Silicon Nitride: II, Sodium Sulfate. <i>Journal of the American Ceramic Society</i> , <b>1988</b> , 71, 139-148	3.8	53
12	Direct Mass Spectrometric Identification of Silicon Oxychloride Compounds. <i>Journal of the Electrochemical Society</i> , <b>1988</b> , 135, 1571-1574	3.9	12

11	Multielement Mapping of SiC by Scanning Auger Microscopy. <i>Advanced Ceramic Materials</i> , <b>1987</b> , 2, 773-779		32
10	Kinetics and Mechanism of Corrosion of SiC by Molten Salts. <i>Journal of the American Ceramic Society</i> , <b>1986</b> , 69, 74-82	3.8	82
9	Mechanism of Strength Degradation for Hot Corrosion of SiC. <i>Journal of the American Ceramic Society</i> , <b>1986</b> , 69, 741-752	3.8	67
8	Burner Rig Corrosion of SiC at 1000°C. <i>Advanced Ceramic Materials</i> , <b>1986</b> , 1, 154-161		35
7	Hot Corrosion of Sintered SiC at 1000°C. <i>Journal of the American Ceramic Society</i> , <b>1985</b> , 68, 432-439	3.8	104
6	The Reactions of Cobalt, Iron and Nickel in SO <sub>2</sub> Atmospheres: Similarities and Differences. <i>NATO ASI Series Series B: Physics</i> , <b>1985</b> , 451-461		
5	Reaction of Cobalt in SO <sub>2</sub> Atmospheres at Elevated Temperatures. <i>Journal of the Electrochemical Society</i> , <b>1984</b> , 131, 1182-1188	3.9	10
4	Corrosion of Ceramic Materials 327-388		1
3	NDE for Characterizing Oxidation Damage in Reinforced Carbon-Carbon. <i>Ceramic Transactions</i> , 167-180	0.1	
2	Kinetics and Mechanism of Oxidation of the Reinforced Carbon/Carbon on the Space Shuttle Orbiter. <i>Ceramic Engineering and Science Proceedings</i> , 3-21	0.1	
1	NDE for Characterizing Oxidation Damage in Reinforced Carbon-Carbon Used on the NASA Space Shuttle Thermal Protection System 133-141		3