

# James L Smialek

## List of Publications by Year in descending order

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90  
papers

4,854  
citations

87843

38  
h-index

95218

68  
g-index

91  
all docs

91  
docs citations

91  
times ranked

1645  
citing authors

#	ARTICLE	IF	CITATIONS
1	Effect of the $\gamma$ - $\text{Al}_2\text{O}_3$ transformation on the oxidation behavior of $\gamma$ -NiAl + Zr. Oxidation of Metals, 1989, 31, 275-304.	1.0	406
2	SiC Recession Caused by $\text{SiO}_2$ Scale Volatility under Combustion Conditions: II, Thermodynamics and Gaseous Diffusion Model. Journal of the American Ceramic Society, 1999, 82, 1826-1834.	1.9	296
3	SiC Recession Caused by $\text{SiO}_2$ Scale Volatility under Combustion Conditions: I, Experimental Results and Empirical Model. Journal of the American Ceramic Society, 1999, 82, 1817-1825.	1.9	254
4	$^{18}\text{O}$ Tracer studies of $\text{Al}_2\text{O}_3$ scale formation on NiCrAl alloys. Oxidation of Metals, 1982, 17, 429-449.	1.0	181
5	Oxide morphology and spalling model for NiAl. Metallurgical and Materials Transactions A - Physical Metallurgy and Materials Science, 1978, 9, 309-320.	1.4	178
6	The oxidation and protection of gamma titanium aluminides. Jom, 1996, 48, 46-50.	0.9	177
7	SiC and $\text{Si}_3\text{N}_4$ recession due to $\text{SiO}_2$ scale volatility under combustor conditions. Advanced Composite Materials, 1999, 8, 33-45.	1.0	148
8	On the growth of $\text{Al}_2\text{O}_3$ scales. Acta Materialia, 2013, 61, 6670-6683.	3.8	140
9	Effects of hydrogen annealing, sulfur segregation and diffusion on the cyclic oxidation resistance of superalloys: a review. Thin Solid Films, 1994, 253, 285-292.	0.8	133
10	Alumina Scale Formation: A New Perspective. Journal of the American Ceramic Society, 2011, 94, s146.	1.9	131
11	Transformation temperatures of martensite in $\gamma$ -phase nickel aluminide. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 1973, 4, 1571-1575.	1.0	130
12	Effect of sulfur removal on $\text{Al}_2\text{O}_3$ scale adhesion. Metallurgical and Materials Transactions A - Physical Metallurgy and Materials Science, 1991, 22, 739-752.	1.4	128
13	Adherent $\text{Al}_2\text{O}_3$ scales formed on undoped NiCrAl alloys. Metallurgical and Materials Transactions A - Physical Metallurgy and Materials Science, 1987, 18, 164-167.	1.4	126
14	Hot Corrosion of Sintered $\alpha$ -SiC at 1000°C. Journal of the American Ceramic Society, 1985, 68, 432-439.	1.9	117
15	The role of Cr in promoting protective alumina scale formation by $\beta$ -based Ti-Al-Cr alloys II. Oxidation behavior in air. Acta Materialia, 1997, 45, 2371-2382.	3.8	100
16	Turbine airfoil degradation in the Persian Gulf War. Jom, 1994, 46, 39-41.	0.9	97
17	The role of Cr in promoting protective alumina scale formation by $\beta$ -based Ti-Al-Cr alloys I. Compatibility with alumina and oxidation behavior in oxygen. Acta Materialia, 1997, 45, 2357-2369.	3.8	97
18	Dopant Effect of Yttrium and the Growth and Adherence of Alumina on Nickel-Aluminum Alloys. Journal of the Electrochemical Society, 1985, 132, 1695-1701.	1.3	96

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19	Oxidation behavior of FeAl+Hf, Zr. <i>B. Oxidation of Metals</i> , 1990, 34, 259-275.	1.0	95
20	Mechanism of Strength Degradation for Hot Corrosion of alpha-SiC. <i>Journal of the American Ceramic Society</i> , 1986, 69, 741-752.	1.9	84
21	Cyclic oxidation of aluminide coatings on Ti3Al+Nb. <i>Scripta Metallurgica Et Materialia</i> , 1990, 24, 1291-1296.	1.0	70
22	Structure of transient oxides formed on nicrai alloys. <i>Metallurgical and Materials Transactions A - Physical Metallurgy and Materials Science</i> , 1983, 14, 2143-2161.	1.4	66
23	Oxidation behaviour of TiAl3 coatings and alloys. <i>Corrosion Science</i> , 1993, 35, 1199-1208.	3.0	66
24	Effects of Diffusion on Aluminum Depletion and Degradation of NiAl Coatings. <i>Journal of the Electrochemical Society</i> , 1974, 121, 800-805.	1.3	56
25	Kinetic Aspects of Ti2AlC MAX Phase Oxidation. <i>Oxidation of Metals</i> , 2015, 83, 351-366.	1.0	55
26	COSP for Windows – Strategies for Rapid Analyses of Cyclic-Oxidation Behavior. <i>Oxidation of Metals</i> , 2002, 57, 559-581.	1.0	52
27	Oxygen diffusivity in alumina scales grown on Al-MAX phases. <i>Corrosion Science</i> , 2015, 91, 281-286.	3.0	52
28	Oxidation of Al2O3 Scale-Forming MAX Phases in Turbine Environments. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2018, 49, 782-792.	1.1	50
29	A deterministic interfacial cyclic oxidation spalling model. <i>Acta Materialia</i> , 2003, 51, 469-483.	3.8	49
30	Corrosion Pitting of SiC by Molten Salts. <i>Journal of the Electrochemical Society</i> , 1986, 133, 2615-2621.	1.3	47
31	Maintaining adhesion of protective Al2O3 scales. <i>Jom</i> , 2000, 52, 22-25.	0.9	47
32	Burner Rig Hot Corrosion of Silicon Carbide and Silicon Nitride. <i>Journal of the American Ceramic Society</i> , 1990, 73, 303-311.	1.9	46
33	Optimizing Scale Adhesion on Single Crystal Superalloys. <i>Materials Science Forum</i> , 2001, 369-372, 459-466.	0.3	46
34	Sulfur at nickel-alumina interfaces. <i>Surface Science</i> , 1990, 230, 175-183.	0.8	42
35	Hot corrosion and low cycle fatigue of a Cr2AlC-coated superalloy. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2018, 711, 119-129.	2.6	42
36	Chromium and Reactive Element Modified Aluminide Diffusion Coatings on Superalloys: Environmental Testing. <i>Journal of the Electrochemical Society</i> , 1993, 140, 1191-1203.	1.3	41



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55	Moisture-Induced TBC Spallation on Turbine Blade Samples. <i>Surface and Coatings Technology</i> , 2011, 206, 1577-1585.	2.2	19
56	Discussion of "The Relationship Between Oxide Grain Morphology and Growth Mechanisms for Fe-Cr-Al and Fe-Cr-Al-Y Alloys" [F. A. Golightly, F. H. Stott, and G. C. Wood (pp. 1035-1042, Vol. 126, No. 6)]. <i>Journal of the Electrochemical Society</i> , 1979, 126, 2275-2276.	1.1	18
57	The effect of H <sub>2</sub> -anneal on the adhesion of Al <sub>2</sub> O <sub>3</sub> scales on a Fe <sub>3</sub> Al-based alloy. <i>Materials at High Temperatures</i> , 2000, 17, 79-85.	0.5	18
58	The Effect of Hydrogen Annealing on the Impurity Content of Alumina-Forming Alloys. <i>Oxidation of Metals</i> , 2001, 55, 75-86.	1.0	18
59	Improved oxidation life of segmented plasma sprayed 8YSZ thermal barrier coatings. <i>Journal of Thermal Spray Technology</i> , 2004, 13, 66-75.	1.6	18
60	Moisture-induced delamination video of an oxidized thermal barrier coating. <i>Scripta Materialia</i> , 2008, 59, 67-70.	2.6	18
61	Cyclic oxidation of alloy 718 produced by additive manufacturing compared to a wrought-718 alloy. <i>Corrosion Science</i> , 2021, 192, 109804.	3.0	18
62	Oxide Scales Formed on NiTi and NiPtTi Shape Memory Alloys. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2012, 43, 2325-2341.	1.1	17
63	Invited Review Paper in Commemoration of Over 50 Years of Oxidation of Metals: Alumina Scale Adhesion Mechanisms: A Retrospective Assessment. <i>Oxidation of Metals</i> , 2022, 97, 1-50.	1.0	17
64	Cyclic Oxidation of High Mo, Reduced Density Superalloys. <i>Metals</i> , 2015, 5, 2165-2185.	1.0	16
65	New oxidation features in NiCrAl-Zr revealed by an Auger microprobe. <i>Journal of Vacuum Science and Technology</i> , 1982, 20, 1403-1405.	1.9	14
66	Oxidation and Corrosion of Silicon-Based Ceramics and Composites*. <i>Materials Science Forum</i> , 1997, 251-254, 817-832.	0.3	13
67	Comparative Oxidation Kinetics of a NiPtTi High Temperature Shape Memory Alloy. <i>Oxidation of Metals</i> , 2010, 74, 125-144.	1.0	11
68	Compositional effects on the cyclic oxidation resistance of conventional superalloys. <i>Materials at High Temperatures</i> , 2016, 33, 489-500.	0.5	11
69	Type II Hot Corrosion Screening Tests of a Cr <sub>2</sub> AlC MAX Phase Compound. <i>Oxidation of Metals</i> , 2018, 90, 555-570.	1.0	11
70	The Effects of Reactive Element Additions, Sulfur Removal, and Specimen Thickness on the Oxidation Behaviour of Alumina-Forming Ni- and Fe-Base Alloys. <i>Materials Science Forum</i> , 1997, 251-254, 405-412.	0.3	9
71	Oxidative recession, sulfur release, and Al <sub>2</sub> O <sub>3</sub> spallation for Y-doped alloys. <i>Scripta Materialia</i> , 2001, 45, 1327-1333.	2.6	9
72	Cyclic Oxidation Modeling and Life Prediction. <i>Materials Science Forum</i> , 2004, 461-464, 663-670.	0.3	9

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73	Erratum to "Alumina Scale Formation: A New Perspective" Journal of the American Ceramic Society, 2011, 94, 2698-2698.	1.9	9
74	Durability of YSZ coated Ti <sub>2</sub> AlC in 1300°C high velocity burner rig tests. Journal of the American Ceramic Society, 2020, 103, 7014-7030.	1.9	9
75	Origins of a Low-Sulfur Superalloy Al <sub>2</sub> O <sub>3</sub> Scale Adhesion Map. Crystals, 2021, 11, 60.	1.0	9
76	Relative Ti <sub>2</sub> AlC Scale Volatility under 1300 °C Combustion Conditions. Coatings, 2020, 10, 142.	1.2	9
77	Moisture-Induced Delayed Alumina Scale Spallation on a Ni(Pt)Al Coating. Oxidation of Metals, 2009, 72, 259-278.	1.0	8
78	Investigation of Na <sub>2</sub> SO <sub>4</sub> Deposit Induced Corrosion of Cr, Al, C Binary and Ternary Thin Film Coatings on Ni-201. Journal of the Electrochemical Society, 2017, 164, C218-C223.	1.3	8
79	Scale Adhesion, Sulfur Content, and TBC Failure on Single Crystal Superalloys. Ceramic Engineering and Science Proceedings, 0, , 485-495.	0.1	7
80	Non-protective alumina growth in sulfur-doped NiAl(Zr). Materials at High Temperatures, 2000, 17, 71-77.	0.5	6
81	Hydrogen and moisture-induced scale spallation: Cathodic descaling of a single crystal superalloy. Electrochimica Acta, 2011, 56, 1823-1834.	2.6	6
82	Scanning Auger microscopy of corroded SiC. Journal of Materials Science Letters, 1986, 5, 1122-1124.	0.5	5
83	Issues Concerning the Oxidation of Ni(Pt)Ti Shape Memory Alloys. ECS Transactions, 2012, 41, 127-135.	0.3	5
84	Long Term Oxidation of Model and Engineering TiAl Alloys. Materials Research Society Symposia Proceedings, 2000, 646, 444.	0.1	4
85	Oxidation Resistance and Critical Sulfur Content of Single Crystal Superalloys. , 1996, , .		2
86	Oxidation of FeCrAlY Fibers at Low Oxygen Potentials. Oxidation of Metals, 2008, 69, 343-358.	1.0	2
87	Low Temperature Hot Corrosion Screening of Single Crystal Superalloys. Materials, 2018, 11, 2098.	1.3	2
88	Predicting Material Consumption by Cyclic Oxidation Spalling Models. , 0, , 147-154.		1
89	Processing of Fused Silicide Coatings for Carbon-Based Materials. Ceramic Engineering and Science Proceedings, 0, , 757-783.	0.1	1
90	Diffusional Limits of Superalloy Desulfurization by Hydrogen Annealing. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2021, 52, 2698.	1.1	0