

# James L Smialek

## List of Publications by Year in descending order

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90  
papers

4,854  
citations

87843

38  
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95218

68  
g-index

91  
all docs

91  
docs citations

91  
times ranked

1645  
citing authors

#	ARTICLE	IF	CITATIONS
1	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
2	Origins of a Low-Sulfur Superalloy Al <sub>2</sub> O <sub>3</sub> Scale Adhesion Map. <i>Crystals</i> , 2021, 11, 60.	1.0	9
3	Diffusional Limits of Superalloy Desulfurization by Hydrogen Annealing. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2021, 52, 2698.	1.1	0
4	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
5	Durability of YSZ coated Ti <sub>2</sub> AlC in 1300Å°C high velocity burner rig tests. <i>Journal of the American Ceramic Society</i> , 2020, 103, 7014-7030.	1.9	9
6	Relative Ti <sub>2</sub> AlC Scale Volatility under 1300 Å°C Combustion Conditions. <i>Coatings</i> , 2020, 10, 142.	1.2	9
7	Oxidation of Al <sub>2</sub> O <sub>3</sub> 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
8	Hot corrosion and low cycle fatigue of a Cr <sub>2</sub> AlC-coated superalloy. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2018, 711, 119-129.	2.6	42
9	Low Temperature Hot Corrosion Screening of Single Crystal Superalloys. <i>Materials</i> , 2018, 11, 2098.	1.3	2
10	Revisiting the Birth of 7YSZ Thermal Barrier Coatings: Stephan Stecura â€. <i>Coatings</i> , 2018, 8, 255.	1.2	41
11	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
12	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. <i>Journal of the Electrochemical Society</i> , 2017, 164, C218-C223.	1.3	8
13	Environmental resistance of a Ti <sub>2</sub> AlC-type MAX phase in a high pressure burner rig. <i>Journal of the European Ceramic Society</i> , 2017, 37, 23-34.	2.8	27
14	Compositional effects on the cyclic oxidation resistance of conventional superalloys. <i>Materials at High Temperatures</i> , 2016, 33, 489-500.	0.5	11
15	Oxidative durability of TBCs on Ti <sub>2</sub> AlC MAX phase substrates. <i>Surface and Coatings Technology</i> , 2016, 285, 77-86.	2.2	31
16	Interfacial reactions of a MAX phase/superalloy hybrid. <i>Surface and Interface Analysis</i> , 2015, 47, 844-853.	0.8	23
17	Cyclic Oxidation of High Mo, Reduced Density Superalloys. <i>Metals</i> , 2015, 5, 2165-2185.	1.0	16
18	Hydrogen in metals studied by Thermal Desorption Spectroscopy (TDS). <i>Corrosion Science</i> , 2015, 93, 324-326.	3.0	20

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19	Kinetic Aspects of Ti <sub>2</sub> AlC MAX Phase Oxidation. <i>Oxidation of Metals</i> , 2015, 83, 351-366.	1.0	55
20	Compiled furnace cyclic lives of EB-PVD thermal barrier coatings. <i>Surface and Coatings Technology</i> , 2015, 276, 31-38.	2.2	37
21	Corrosion of copper in distilled water without O <sub>2</sub> and the detection of produced hydrogen. <i>Corrosion Science</i> , 2015, 95, 162-167.	3.0	35
22	Oxygen diffusivity in alumina scales grown on Al-MAX phases. <i>Corrosion Science</i> , 2015, 91, 281-286.	3.0	52
23	On the growth of Al <sub>2</sub> O <sub>3</sub> scales. <i>Acta Materialia</i> , 2013, 61, 6670-6683.	3.8	140
24	Issues Concerning the Oxidation of Ni(Pt)Ti Shape Memory Alloys. <i>ECS Transactions</i> , 2012, 41, 127-135.	0.3	5
25	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
26	Alumina Scale Formation: A New Perspective. <i>Journal of the American Ceramic Society</i> , 2011, 94, s146.	1.9	131
27	Erratum to "Alumina Scale Formation: A New Perspective". <i>Journal of the American Ceramic Society</i> , 2011, 94, 2698-2698.	1.9	9
28	Moisture-Induced TBC Spallation on Turbine Blade Samples. <i>Surface and Coatings Technology</i> , 2011, 206, 1577-1585.	2.2	19
29	Hydrogen and moisture-induced scale spallation: Cathodic descaling of a single crystal superalloy. <i>Electrochimica Acta</i> , 2011, 56, 1823-1834.	2.6	6
30	Comparative Oxidation Kinetics of a NiPtTi High Temperature Shape Memory Alloy. <i>Oxidation of Metals</i> , 2010, 74, 125-144.	1.0	11
31	Moisture-Induced Delayed Alumina Scale Spallation on a Ni(Pt)Al Coating. <i>Oxidation of Metals</i> , 2009, 72, 259-278.	1.0	8
32	Oxidation of FeCrAlY Fibers at Low Oxygen Potentials. <i>Oxidation of Metals</i> , 2008, 69, 343-358.	1.0	2
33	Moisture-induced delamination video of an oxidized thermal barrier coating. <i>Scripta Materialia</i> , 2008, 59, 67-70.	2.6	18
34	Thermally grown Al <sub>2</sub> O <sub>3</sub> on a H <sub>2</sub> -annealed Fe <sub>3</sub> Al alloy: Stress evolution and film adhesion. <i>Acta Materialia</i> , 2007, 55, 5601-5613.	3.8	28
35	Moisture-induced delayed spallation and interfacial hydrogen embrittlement of alumina scales. <i>Jom</i> , 2006, 58, 29-35.	0.9	31
36	Cyclic Oxidation Modeling and Life Prediction. <i>Materials Science Forum</i> , 2004, 461-464, 663-670.	0.3	9

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37	Improved oxidation life of segmented plasma sprayed 8YSZ thermal barrier coatings. Journal of Thermal Spray Technology, 2004, 13, 66-75.	1.6	18
38	Universal characteristics of an interfacial spalling cyclic oxidation model. Acta Materialia, 2004, 52, 2111-2121.	3.8	24
39	A deterministic interfacial cyclic oxidation spalling model. Acta Materialia, 2003, 51, 469-483.	3.8	49
40	Delayed alumina scale spallation on Rene'N5+Y: moisture effects and acoustic emission. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2002, 332, 11-24.	2.6	34
41	COSP for Windowsâ€”Strategies for Rapid Analyses of Cyclic-Oxidation Behavior. Oxidation of Metals, 2002, 57, 559-581.	1.0	52
42	Advances in the oxidation resistance of high-temperature turbine materials. Surface and Interface Analysis, 2001, 31, 582-592.	0.8	33
43	The Effect of Hydrogen Annealing on the Impurity Content of Alumina-Forming Alloys. Oxidation of Metals, 2001, 55, 75-86.	1.0	18
44	Oxidative recession, sulfur release, and Al <sub>2</sub> O <sub>3</sub> spallation for Y-doped alloys. Scripta Materialia, 2001, 45, 1327-1333.	2.6	9
45	Optimizing Scale Adhesion on Single Crystal Superalloys. Materials Science Forum, 2001, 369-372, 459-466.	0.3	46
46	Non-protective alumina growth in sulfur-doped NiAl(Zr). Materials at High Temperatures, 2000, 17, 71-77.	0.5	6
47	Long Term Oxidation of Model and Engineering TiAl Alloys. Materials Research Society Symposia Proceedings, 2000, 646, 444.	0.1	4
48	Maintaining adhesion of protective Al <sub>2</sub> O <sub>3</sub> scales. Jom, 2000, 52, 22-25.	0.9	47
49	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. Materials at High Temperatures, 2000, 17, 79-85.	0.5	18
50	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.	1.0	148
51	SiC Recession Caused by SiO <sub>2</sub> Scale Volatility under Combustion Conditions: II, Thermodynamics and Gaseousâ€”Diffusion Model. Journal of the American Ceramic Society, 1999, 82, 1826-1834.	1.9	296
52	SiC Recession Caused by SiO <sub>2</sub> Scale Volatility under Combustion Conditions: I, Experimental Results and Empirical Model. Journal of the American Ceramic Society, 1999, 82, 1817-1825.	1.9	254
53	Oxidation and Corrosion of Silicon-Based Ceramics and Composites*. Materials Science Forum, 1997, 251-254, 817-832.	0.3	13
54	The Effects of Reactive Element Additions, Sulfur Removal, and Specimen Thickness on the Oxidation Behaviour of Alumina-Forming Ni-and Fe-Base Alloys. Materials Science Forum, 1997, 251-254, 405-412.	0.3	9

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55	The role of Cr in promoting protective alumina scale formation by $\hat{1}^3$ -based Ti-Al-Cr alloysâ€™ II. Oxidation behavior in air. Acta Materialia, 1997, 45, 2371-2382.	3.8	100
56	The role of Cr in promoting protective alumina scale formation by $\hat{1}^3$ -based Ti-Al-Cr alloysâ€™I. Compatibility with alumina and oxidation behavior in oxygen. Acta Materialia, 1997, 45, 2357-2369.	3.8	97
57	The oxidation and protection of gamma titanium aluminides. Jom, 1996, 48, 46-50.	0.9	177
58	Oxidation Resistance and Critical Sulfur Content of Single Crystal Superalloys. , 1996, , .		2
59	The effect of surface condition and sulfur on the environmental resistance of airfoils. Oxidation of Metals, 1995, 43, 1-23.	1.0	20
60	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
61	Turbine airfoil degradation in the persian gulf war. Jom, 1994, 46, 39-41.	0.9	97
62	Oxidation behaviour of TiAl3 coatings and alloys. Corrosion Science, 1993, 35, 1199-1208.	3.0	66
63	Chromium and Reactive Element Modified Aluminide Diffusion Coatings on Superalloys: Environmental Testing. Journal of the Electrochemical Society, 1993, 140, 1191-1203.	1.3	41
64	Effect of sulfur removal on Al <sub>2</sub> O <sub>3</sub> scale adhesion. Metallurgical and Materials Transactions A - Physical Metallurgy and Materials Science, 1991, 22, 739-752.	1.4	128
65	Evidence from Transmission Electron Microscopy for an Oxynitride Layer in Oxidized Si <sub>3</sub> N <sub>4</sub> . Journal of the Electrochemical Society, 1991, 138, L51-L53.	1.3	32
66	Burner Rig Hot Corrosion of Silicon Carbide and Silicon Nitride. Journal of the American Ceramic Society, 1990, 73, 303-311.	1.9	46
67	Oxidation behavior of FeAl+Hf, Zr, B. Oxidation of Metals, 1990, 34, 259-275.	1.0	95
68	Cyclic oxidation of aluminide coatings on Ti3Al+Nb. Scripta Metallurgica Et Materialia, 1990, 24, 1291-1296.	1.0	70
69	Sulfur at nickel-alumina interfaces. Surface Science, 1990, 230, 175-183.	0.8	42
70	Effect of the $\gamma$ -Al <sub>2</sub> O <sub>3</sub> transformation on the oxidation behavior of $\gamma$ -NiAl + Zr. Oxidation of Metals, 1989, 31, 275-304.	1.0	406
71	Adherent Al <sub>2</sub> O <sub>3</sub> scales formed on undoped nicrai alloys. Metallurgical and Materials Transactions A - Physical Metallurgy and Materials Science, 1987, 18, 164-167.	1.4	126
72	Multielement Mapping of $\hat{1}^3$ -SiC by Scanning Auger Microscopy. Advanced Ceramic Materials, 1987, 2, 773-779.	2.3	35

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73	Corrosion Pitting of SiC by Molten Salts. Journal of the Electrochemical Society, 1986, 133, 2615-2621.	1.3	47
74	Mechanism of Strength Degradation for Hot Corrosion of alpha-SiC. Journal of the American Ceramic Society, 1986, 69, 741-752.	1.9	84
75	Scanning Auger microscopy of corroded SiC. Journal of Materials Science Letters, 1986, 5, 1122-1124.	0.5	5
76	Burner Rig Corrosion of SiC at 1000°C. Advanced Ceramic Materials, 1986, 1, 154-161.	2.3	41
77	Hot Corrosion of Sintered alpha-SiC at 1000°C. Journal of the American Ceramic Society, 1985, 68, 432-439.	1.9	117
78	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
79	Structure of transient oxides formed on nicrai alloys. Metallurgical and Materials Transactions A - Physical Metallurgy and Materials Science, 1983, 14, 2143-2161.	1.4	66
80	New oxidation features in NiCrAl-Zr revealed by an Auger microprobe. Journal of Vacuum Science and Technology, 1982, 20, 1403-1405.	1.9	14
81	<sup>18</sup> O Tracer studies of Al <sub>2</sub> O <sub>3</sub> scale formation on NiCrAl alloys. Oxidation of Metals, 1982, 17, 429-449.	1.0	181
82	Discussion of "The Relationship Between Oxide Grain Morphology and Growth Mechanisms for Fe-Cr-Al and Fe-Cr-Al Alloys" [F. A. Golightly, F. H. Stott, and G. C. Wood (pp. 1035-1042, Vol. 126, No. 6)]. Journal of the Electrochemical Society, 1979, 126, 2275-2276.		18
83	Oxide morphology and spalling model for NiAl. Metallurgical and Materials Transactions A - Physical Metallurgy and Materials Science, 1978, 9, 309-320.	1.4	178
84	Effects of Diffusion on Aluminum Depletion and Degradation of NiAl Coatings. Journal of the Electrochemical Society, 1974, 121, 800-805.	1.3	56
85	Transformation temperatures of martensite in -phase nickel aluminide. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 1973, 4, 1571-1575.	1.0	130
86	Martensite in NiAl oxidation-resistant coatings. Metallurgical and Materials Transactions A - Physical Metallurgy and Materials Science, 1971, 2, 913-915.	1.4	37
87	Enigmatic Moisture Effects on Al <sub>2</sub> O <sub>3</sub> Scale and TBC Adhesion. Materials Science Forum, 0, 595-598, 191-198.	0.3	27
88	Predicting Material Consumption by Cyclic Oxidation Spalling Models. , 0, , 147-154.		1
89	Scale Adhesion, Sulfur Content, and TBC Failure on Single Crystal Superalloys. Ceramic Engineering and Science Proceedings, 0, , 485-495.	0.1	7
90	Processing of Fused Silicide Coatings for Carbon-Based Materials. Ceramic Engineering and Science Proceedings, 0, , 757-783.	0.1	1