

Martin P Harmer

List of Publications by Year in descending order

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129
papers

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61945

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129
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129
docs citations

129
times ranked

3914
citing authors

#	ARTICLE	IF	CITATIONS
1	Grain boundary complexions. <i>Acta Materialia</i> , 2014, 62, 1-48.	3.8	660
2	Ordering Structure and Dielectric Properties of Undoped and La/Na-Doped $\text{Pb}(\text{Mg}_{1/3}\text{Nb}_{2/3})\text{O}_3$. <i>Journal of the American Ceramic Society</i> , 1989, 72, 593-598.	1.9	507
3	Complexion: A new concept for kinetic engineering in materials science. <i>Acta Materialia</i> , 2007, 55, 6208-6218.	3.8	496
4	Mechanical Behavior of Alumina-Silicon Carbide "Nanocomposites". <i>Journal of the American Ceramic Society</i> , 1993, 76, 503-510.	1.9	335
5	The Role of a Bilayer Interfacial Phase on Liquid Metal Embrittlement. <i>Science</i> , 2011, 333, 1730-1733.	6.0	250
6	Creep of Duplex Microstructures. <i>Journal of the American Ceramic Society</i> , 1994, 77, 2857-2865.	1.9	193
7	Effect of Yttrium and Lanthanum on the Tensile Creep Behavior of Aluminum Oxide. <i>Journal of the American Ceramic Society</i> , 1997, 80, 1013-1017.	1.9	183
8	Unique Opportunities for Microstructural Engineering with Duplex and Lamellar Ceramic Composites. <i>Journal of the American Ceramic Society</i> , 1992, 75, 1715-1728.	1.9	180
9	The Phase Behavior of Interfaces. <i>Science</i> , 2011, 332, 182-183.	6.0	143
10	Multiple grain boundary transitions in ceramics: A case study of alumina. <i>Acta Materialia</i> , 2007, 55, 5247-5254.	3.8	137
11	Segregation-induced ordered superstructures at general grain boundaries in a nickel-bismuth alloy. <i>Science</i> , 2017, 358, 97-101.	6.0	130
12	Effect of MgO Solute on the Kinetics of Grain Growth in Al_2O_3 . <i>Journal of the American Ceramic Society</i> , 1983, 66, C-90-C-92.	1.9	129
13	Crack Healing and Stress Relaxation in Al_2O_3 SiC "Nanocomposites". <i>Journal of the American Ceramic Society</i> , 1995, 78, 567-571.	1.9	129
14	Effect of Yttrium and Lanthanum on the Final Stage Sintering Behavior of Ultrahigh Purity Alumina. <i>Journal of the American Ceramic Society</i> , 1997, 80, 2005-2012.	1.9	126
15	Effect of Pore Distribution on Microstructure Development: II, First- and Second-Generation Pores. <i>Journal of the American Ceramic Society</i> , 1988, 71, 530-539.	1.9	111
16	Microstructure and Dielectric Properties of Lead Magnesium Niobate-Pyrochlore Diphasic Mixtures. <i>Journal of the American Ceramic Society</i> , 1990, 73, 68-73.	1.9	111
17	Coarsening-Resistant Dual-Phase Interpenetrating Microstructures. <i>Journal of the American Ceramic Society</i> , 1990, 73, 2508-2510.	1.9	105
18	Mechanism for the Role of Magnesia in the Sintering of Alumina Containing Small Amounts of a liquid Phase. <i>Journal of the American Ceramic Society</i> , 1989, 72, 1241-1244.	1.9	103

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19	Effect of Pore Distribution on Microstructure Development: I, Matrix Pores. Journal of the American Ceramic Society, 1988, 71, 113-120.	1.9	100
20	Grain-Growth Kinetics for Alumina in the Absence of a Liquid Phase. Journal of the American Ceramic Society, 1985, 68, C-22-C-24.	1.9	99
21	Dopant Distributions in Rare-Earth-Doped Alumina. Journal of the American Ceramic Society, 1997, 80, 373-376.	1.9	97
22	Grain Boundary Complexion Transitions. Annual Review of Materials Research, 2020, 50, 465-492.	4.3	96
23	Demystifying the role of sintering additives with CaO complexion. Journal of the European Ceramic Society, 2008, 28, 1485-1493.	2.8	92
24	Grain boundary complexions in ceramics and metals: An overview. Jom, 2009, 61, 38-44.	0.9	85
25	Relating Grain-Boundary Complexion to Grain-Boundary Kinetics I: CaO -Doped Alumina. Journal of the American Ceramic Society, 2008, 91, 2304-2313.	1.9	80
26	Effect of Powder Purity and Second Phases on the Dielectric Properties of Lead Magnesium Niobate Ceramics. Journal of the American Ceramic Society, 1986, 69, C-303-C-305.	1.9	77
27	Interfacial Kinetic Engineering: How Far Have We Come Since Kingery's Inaugural Sosman Address?. Journal of the American Ceramic Society, 2010, 93, 301-317.	1.9	77
28	Mechanism for the Peritectic Reaction and Growth of Aligned Grains in $\text{YBa}_2\text{Cu}_3\text{O}_{6+x}$. Journal of the American Ceramic Society, 1992, 75, 1281-1283.	1.9	76
29	Effect of Pore Distribution on Microstructure Development: III, Model Experiments. Journal of the American Ceramic Society, 1992, 75, 830-843.	1.9	75
30	Effect of Annealing Environment on the Crack Healing and Mechanical Behavior of Silicon Carbide-Reinforced Alumina Nanocomposites. Journal of the American Ceramic Society, 1998, 81, 1203-1208.	1.9	74
31	Single Crystals of $\text{Pb}(\text{Mg}_{1/3}\text{Nb}_{2/3})\text{O}_3 \approx 35 \text{ mol\% PbTiO}_3$ from Polycrystalline Precursors. Journal of the American Ceramic Society, 1998, 81, 244-248.	1.9	73
32	Expanding time-temperature-transformation (TTT) diagrams to interfaces: A new approach for grain boundary engineering. Acta Materialia, 2016, 106, 78-86.	3.8	73
33	Identification of a bilayer grain boundary complexion in Bi-doped Cu. Scripta Materialia, 2013, 68, 146-149.	2.6	69
34	Codoping of Alumina to Enhance Creep Resistance. Journal of the American Ceramic Society, 1999, 82, 1497-1504.	1.9	68
35	The Relative Energies of Normally and Abnormally Growing Grain Boundaries in Alumina Displaying Different Complexions. Journal of the American Ceramic Society, 2010, 93, 1796-1802.	1.9	62
36	Machining-Induced Surface Residual Stress Behavior in $\text{Al}_2\text{O}_3\text{-SiC}$ Nanocomposites. Journal of the American Ceramic Society, 1996, 79, 2403-2409.	1.9	61

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37	Sintering of Ultra-High-Purity Alumina Doped Simultaneously with MgO and FeO. Journal of the American Ceramic Society, 1987, 70, 860-866.	1.9	60
38	Effect of Magnesia Solute on Surface Diffusion in Sapphire and the Role-of Magnesia in the Sintering of Alumina. Journal of the American Ceramic Society, 1990, 73, 833-837.	1.9	60
39	Chemical Heterogeneity in PMN ³⁵ PT Ceramics and Effects on Dielectric and Piezoelectric Properties. Journal of the American Ceramic Society, 2002, 85, 3018-3024.	1.9	54
40	Relating Grain Boundary Complexion to Grain Boundary Kinetics II: Silica-Doped Alumina. Journal of the American Ceramic Society, 2008, 91, 2314-2320.	1.9	54
41	Intrinsic Grain Boundary Mobility in Alumina. Journal of the American Ceramic Society, 2006, 89, 3885-3887.	1.9	52
42	Sintering kinetics for a model final-stage microstructure: A study of Al ₂ O ₃ . Philosophical Magazine Letters, 1991, 63, 7-14.	0.5	46
43	Review of grain boundary complexion engineering: Know your boundaries. Journal of the American Ceramic Society, 2019, 102, 778-800.	1.9	46
44	Scanning Transmission Electron Microscopy Analysis of Grain Boundaries in Creep-Resistant Yttrium- and Lanthanum-Doped Alumina Microstructures. Journal of the American Ceramic Society, 1999, 82, 2865-2870.	1.9	45
45	Influence of Yttrium Doping on Grain Misorientation in Aluminum Oxide. Journal of the American Ceramic Society, 1998, 81, 3001-3004.	1.9	43
46	The critical influence of carbon on the thermal stability of nanocrystalline Ni-W alloys. Scripta Materialia, 2015, 96, 45-48.	2.6	42
47	Influence of Atmosphere on the Final-Stage Sintering Kinetics of Ultra-High-Purity Alumina. Journal of the American Ceramic Society, 1993, 76, 2248-2256.	1.9	41
48	A grain boundary phase transition in Si-Au. Scripta Materialia, 2012, 66, 203-206.	2.6	38
49	The influence of oxygen contamination on the thermal stability and hardness of nanocrystalline Ni-W alloys. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2016, 664, 49-57.	2.6	38
50	Mechanism of Solid-State Single-Crystal Conversion in Alumina. Journal of the American Ceramic Society, 2007, 90, 993-995.	1.9	37
51	Effects of CaO on the Strength and Toughness of AlN. Journal of the American Ceramic Society, 1989, 72, 469-473.	1.9	36
52	Influence of interface energies on solute partitioning mechanisms in doped aluminas. Acta Materialia, 2010, 58, 5097-5108.	3.8	35
53	Kinetics of {001} Pb(Mg ^{1/3} Nb ^{2/3})O ₃ 35 mol% PbTiO ₃ Single Crystals Grown by Seeded Polycrystal Conversion. Journal of the American Ceramic Society, 2003, 86, 2182-2187.	1.9	34
54	Microstructure and fracture toughness of electrodeposited Ni-21% W alloy thick films. Acta Materialia, 2018, 143, 272-280.	3.8	34

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55	Atomic-resolution observation of Hf-doped alumina grain boundaries. <i>Scripta Materialia</i> , 2013, 68, 703-706.	2.6	33
56	Influence of grain boundary energy on the nucleation of complexion transitions. <i>Scripta Materialia</i> , 2014, 88, 1-4.	2.6	32
57	Influence of Dopant Concentration on Creep Properties of Nd ₂ O ₃ -Doped Alumina. <i>Journal of the American Ceramic Society</i> , 2001, 84, 1010-1016.	1.9	31
58	Changes in the Grain Boundary Character and Energy Distributions Resulting from a Complexion Transition in Ca-Doped Yttria. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2012, 43, 3532-3538.	1.1	31
59	Complexion time-temperature-transformation (TTT) diagrams: Opportunities and challenges. <i>Current Opinion in Solid State and Materials Science</i> , 2016, 20, 316-323.	5.6	31
60	Grain boundary complexion transitions in WO ₃ - and CuO-doped TiO ₂ bicrystals. <i>Acta Materialia</i> , 2013, 61, 1691-1704.	3.8	30
61	Formation of Grain-Boundary Carbon-Containing Phase During Annealing of YBa ₂ Cu ₃ O _{6+x} . <i>Journal of the American Ceramic Society</i> , 1989, 72, 1997-2000.	1.9	29
62	Improved tensile creep properties of yttrium- and lanthanum-doped alumina: a solid solution effect. <i>Journal of Materials Research</i> , 2001, 16, 425-429.	1.2	29
63	Theory and New Applications of <i>Ex Situ</i> Lift Out. <i>Microscopy and Microanalysis</i> , 2015, 21, 1034-1048.	0.2	27
64	High-Temperature Fracture Toughness of Duplex Microstructures. <i>Journal of the American Ceramic Society</i> , 1996, 79, 58-64.	1.9	26
65	The Effect of Yttrium on Oxygen Grain-Boundary Transport in Polycrystalline Alumina Measured Using Ni Marker Particles. <i>Journal of the American Ceramic Society</i> , 2008, 91, 2002-2008.	1.9	26
66	Anti-thermal behavior of materials. <i>Scripta Materialia</i> , 2015, 103, 1-5.	2.6	26
67	Diffusion Controlled Abnormal Grain Growth in Ceramics. <i>Materials Science Forum</i> , 2007, 558-559, 1227-1236.	0.3	25
68	Effect of Nd ₂ O ₃ Doping on the Densification and Abnormal Grain Growth Behavior of High-Purity Alumina. <i>Journal of the American Ceramic Society</i> , 2004, 87, 378-383.	1.9	24
69	Direct Observation of Multilayer Adsorption on Alumina Grain Boundaries. <i>Journal of the American Ceramic Society</i> , 2007, 90, 996-998.	1.9	24
70	Grain boundary plane distributions in aluminas evolving by normal and abnormal grain growth and displaying different complexions. <i>International Journal of Materials Research</i> , 2010, 101, 50-56.	0.1	24
71	Grain Growth Anomaly and Dielectric Response in Ti-rich Strontium Titanate Ceramics. <i>Journal of Physical Chemistry C</i> , 2013, 117, 24787-24795.	1.5	23
72	Correlations between microstructure, fracture morphology, and fracture toughness of nanocrystalline Ni-W alloys. <i>Scripta Materialia</i> , 2016, 113, 84-88.	2.6	23

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73	Calculation and validation of a grain boundary complexion diagram for Bi-doped Ni. Scripta Materialia, 2017, 130, 165-169.	2.6	23
74	Observations of grain boundary chemistry variations in a boron carbide processed with oxide additives. Scripta Materialia, 2018, 142, 106-110.	2.6	23
75	Modeling of Grain-Boundary Segregation Behavior in Aluminum Oxide. Journal of the American Ceramic Society, 2000, 83, 344-352.	1.9	22
76	Analytical Microscopy Study of Phases and Fracture in Y ₂ O ₃ -La ₂ O ₃ Alloys. Journal of the American Ceramic Society, 1988, 71, 820-825.	1.9	21
77	Thermal Healing of Laser-Induced Internal Cracks in Lithium Fluoride Crystals. Journal of the American Ceramic Society, 1992, 75, 1596-1602.	1.9	21
78	Mechanical Properties of Interpenetrating Microstructures: The Al ₂ O ₃ /c-ZrO ₂ System. Journal of the American Ceramic Society, 1992, 75, 418-423.	1.9	21
79	Grain boundary segregation in Al-Mn electrodeposits prepared from ionic liquid. Journal of Materials Science, 2016, 51, 438-448.	1.7	21
80	Data-driven glass/ceramic science research: Insights from the glass and ceramic and data science/informatics communities. Journal of the American Ceramic Society, 2019, 102, 6385-6406.	1.9	20
81	Liquid Phase Sintering of Alumina, I. Microstructure Evolution and Densification. Journal of the American Ceramic Society, 2005, 88, 1702-1707.	1.9	19
82	X-ray Absorption Near-Edge Structure of Grain-Boundary-Segregated Y and Zr in Creep-Resistant Alumina. Journal of the American Ceramic Society, 2002, 85, 2492-2498.	1.9	18
83	Influence of Excess PbO Additions on {111} Single-Crystal Growth of Pb(Mg _{1/3} Nb _{2/3})O ₃ 35 mol% PbTiO ₃ by Seeded Polycrystal Conversion. Journal of the American Ceramic Society, 2003, 86, 2176-2181.	1.9	18
84	Effect of PbO on the Kinetics of {001} Pb(Mg _{1/3} Nb _{2/3})O ₃ -35 mol% PbTiO ₃ Single Crystals Grown into Fully Dense Matrices. Journal of the American Ceramic Society, 2006, 89, 856-862.	1.9	18
85	Data analytics using canonical correlation analysis and Monte Carlo simulation. Npj Computational Materials, 2017, 3, .	3.5	18
86	Achieving ultra hard refractory multi-principal element alloys via mechanical alloying. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2019, 763, 138140.	2.6	18
87	Conversion of Polycrystalline Alumina to Single-Crystal Sapphire by Localized Codoping with Silica. Journal of the American Ceramic Society, 2004, 87, 1879-1882.	1.9	17
88	Surface energies, segregation, and fracture behavior of magnesium aluminate spinel low-index grain boundary planes. Acta Materialia, 2018, 148, 320-329.	3.8	17
89	Effect of Rigid Inclusions on the Densification and Constitutive Parameters of Liquid-Phase-Sintered YBa ₂ Cu ₃ O _{6+x} Powder Compacts. Journal of the American Ceramic Society, 2003, 86, 883-892.	1.9	16
90	The Relationship between Grain Boundary Energy, Grain Boundary Complexion Transitions, and Grain Size in Ca-Doped Yttria. Materials Science Forum, 0, 753, 87-92.	0.3	16

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91	Effect of Hf 4+ Concentration on Oxygen Grain Boundary Diffusion in Alumina. Journal of the American Ceramic Society, 2015, 98, 3346-3351.	1.9	16
92	Deterioration of a Classical Final-Stage Microstructure: A Study in Alumina. Journal of the American Ceramic Society, 1992, 75, 976-980.	1.9	15
93	Toughness Curve Behavior of an Alumina-Mullite Composite. Journal of the American Ceramic Society, 1998, 81, 2613-2623.	1.9	15
94	Toughening of an Alumina-Mullite Composite by Unbroken Bridging Elements. Journal of the American Ceramic Society, 2000, 83, 833-840.	1.9	14
95	Effect of Alumina Additions on Microstructural Aspects of the beta to alpha Transformation in Tantalum (V) Oxide. Journal of the American Ceramic Society, 2005, 88, 2369-2373.	1.9	14
96	Liquid Phase Sintering of Alumina, II. Penetration of Liquid Phase into Model Microstructures. Journal of the American Ceramic Society, 2005, 88, 1708-1713.	1.9	13
97	Effect of silver addition on the microstructure of $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$. Journal of Materials Research, 1994, 9, 1342-1349.	1.2	12
98	A grain boundary mobility discontinuity in reactive element Zr-doped Al_2O_3 . Scripta Materialia, 2014, 90-91, 33-36.	2.6	12
99	Controlled heterogeneous nucleation of melt-textured $\text{YBa}_2\text{Cu}_3\text{O}_{6+x}$ by addition of Al_2O_3 particles. Journal of Materials Research, 1993, 8, 2128-2133.	1.2	11
100	Influence of Complexion Transitions on Microstructure Evolution in Specialty Aluminas. Journal of the American Ceramic Society, 2015, 98, 1347-1355.	1.9	11
101	Liquid Phase Sintering of Alumina, III. Effect of Trapped Gases in Pores on Densification. Journal of the American Ceramic Society, 2005, 88, 1714-1719.	1.9	10
102	Compositional tailoring of the thermal expansion coefficient of tantalum (V) oxide. Journal of Materials Science, 2006, 41, 689-695.	1.7	10
103	Effects of Inclusions on the Sintering Behavior of $\text{YBa}_2\text{Cu}_3\text{O}_{6+x}$. Journal of the American Ceramic Society, 1990, 73, 2740-2742.	1.9	9
104	Alumina platelet reinforced reaction bonded aluminum oxide composites: Textured and random. Journal of Materials Research, 1997, 12, 3300-3306.	1.2	9
105	An Order-Disorder Transition in Surface Complexions and Its Influence on Crystal Growth of Boron-Rich Nanostructures. Crystal Growth and Design, 2015, 15, 3547-3551.	1.4	9
106	Ignition phenomena and controlled firing of reaction-bonded aluminum oxide. Acta Materialia, 2001, 49, 1095-1103.	3.8	8
107	Interface Stabilized Nanoscale Quasi-Liquid Films. Microscopy Today, 2009, 17, 22-27.	0.2	8
108	The influence of grain boundary area on the complexion time-temperature-transformation diagram of Eu-doped magnesium aluminate spinel. Scripta Materialia, 2020, 178, 251-255.	2.6	8

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109	Comment on "Effect of Interface Structure on the Microstructural Evolution of Ceramics". Journal of the American Ceramic Society, 2007, 90, 2291-2292.	1.9	7
110	Near-Intrinsic Grain Boundary Mobility in Dense Ytria. Journal of the American Ceramic Society, 2011, 94, 651-655.	1.9	7
111	Embedding Ba Monolayers and Bilayers in Boron Carbide Nanowires. Scientific Reports, 2015, 5, 16960.	1.6	6
112	Processing and application of solid state converted high-strain materials. , 1999, , .		5
113	Alumina Agglomerate Effects on Toughness-Curve Behavior of Alumina-Mullite Composites. Journal of the American Ceramic Society, 2000, 83, 3089-3094.	1.9	5
114	Changes in the distribution of interfaces in PMN-35 mol% PT as a function of time. International Journal of Materials Research, 2005, 96, 207-210.	0.8	5
115	Effect of Eu-doping and grain boundary plane on complexion transitions in MgAl ₂ O ₄ . Journal of the American Ceramic Society, 2021, 104, 4203-4213.	1.9	5
116	Journal Effect of a Liquid Phase on the Sintering of Heterogeneous YBa ₂ Cu ₃ O _{6+x} Compacts. Journal of the American Ceramic Society, 1991, 74, 2175-2179.	1.9	4
117	Seeded Growth from Twinned and Untwinned Abnormal Grains of Pb(Mg _{1/3} Nb _{2/3})O ₃₋₃₅ mol% PbTiO ₃ in a Matrix Containing PbO Additions. Journal of the American Ceramic Society, 2004, 87, 1339-1342.	1.9	4
118	Experimental observations of amorphization in multiple generations of boron carbide. Journal of the American Ceramic Society, 2022, 105, 3008-3029.	1.9	4
119	Surface Coating Technique for Revealing Grain Structures in Alumina. Journal of the American Ceramic Society, 1988, 71, C-174-C-175.	1.9	2
120	Effect of Liquid Phase Chemistry on Single-Crystal Growth in PMN-35PT. Journal of the American Ceramic Society, 2006, 89, 060601012420010-???	1.9	2
121	Connecting Phase Stability to the Grain Growth Behavior of Ni-W Alloys. Microscopy and Microanalysis, 2016, 22, 270-271.	0.2	2
122	Seeding Induced Aligned Microstructures (S.I.A.M.) in Yba ₂ Cu ₃ O _{6+X} . Materials Research Society Symposia Proceedings, 1989, 169, 271.	0.1	1
123	Superplastic Deformation in Fine-Grained YBa ₂ Cu ₃ O _{7-x} . Journal of the American Ceramic Society, 2002, 85, 1190-1196.	1.9	1
124	Phase diagram of carbon-nickel-tungsten: A superatom model. Physical Review Materials, 2017, 1, .	0.9	1
125	Microstructure evolution of a Cu and γ -Al ₂ O ₃ composite observed by aberration corrected HAADF-STEM. Microscopy and Microanalysis, 2015, 21, 1351-1352.	0.2	0
126	A Grain Boundary "Tribute to Thomas". Microscopy and Microanalysis, 2016, 22, 1230-1231. 0.2	0.2	0

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127	Applications of analytical electron microscopy to guide the design of boron carbide. Journal of the American Ceramic Society, 0, , .	1.9	0
128	Linking grain boundary structure and composition to microstructure in commercialâ€gradeâ€doped specialty Aluminas. Journal of the American Ceramic Society, 2022, 105, 626.	1.9	0
129	The Lehigh Presidential Nano-Human Interface Initiative: Convergence of materials and cognitive sciences. MRS Bulletin, 0, , 1.	1.7	0