Martin P Harmer

List of Publications by Year
in descending order

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129 papers	7,363 citations	57758 44 h-index	56724 83 g-index
129 all docs	129 docs citations	129 times ranked	3914 citing authors

#	Article	IF	Citations
1	Grain boundary complexions. Acta Materialia, 2014, 62, 1-48.	7.9	660
2	Ordering Structure and Dielectric Properties of Undoped and La/Na-Doped Pb(Mg1/3Nb2/3)O3. Journal of the American Ceramic Society, 1989, 72, 593-598.	3.8	507
3	Complexion: A new concept for kinetic engineering in materials science. Acta Materialia, 2007, 55, 6208-6218.	7.9	496
4	Mechanical Behavior of Alumina-Silicon Carbide "Nanocomposites". Journal of the American Ceramic Society, 1993, 76, 503-510.	3.8	335
5	The Role of a Bilayer Interfacial Phase on Liquid Metal Embrittlement. Science, 2011, 333, 1730-1733.	12.6	250
6	Creep of Duplex Microstructures. Journal of the American Ceramic Society, 1994, 77, 2857-2865.	3.8	193
7	Effect of Yttrium and Lanthanum on the Tensile Creep Behavior of Aluminum Oxide. Journal of the American Ceramic Society, 1997, 80, 1013-1017.	3.8	183
8	Unique Opportunities for Microstructural Engineering with Duplex and Laminar Ceramic Composites. Journal of the American Ceramic Society, 1992, 75, 1715-1728.	3.8	180
9	The Phase Behavior of Interfaces. Science, 2011, 332, 182-183.	12.6	143
10	Multiple grain boundary transitions in ceramics: A case study of alumina. Acta Materialia, 2007, 55, 5247-5254.	7.9	137
11	Segregation-induced ordered superstructures at general grain boundaries in a nickel-bismuth alloy. Science, 2017, 358, 97-101.	12.6	130
12	Effect of MgO Solute on the Kinetics of Grain Growth in A12O3. Journal of the American Ceramic Society, 1983, 66, C-90-C-92.	3.8	129
13	Crack Healing and Stress Relaxation in Al2O3 SiC "Nanocomposites". Journal of the American Ceramic Society, 1995, 78, 567-571.	3.8	129
14	Effect of Yttrium and Lanthanum on the Finalâ€Stage Sintering Behavior of Ultrahighâ€Purity Alumina. Journal of the American Ceramic Society, 1997, 80, 2005-2012.	3.8	126
15	Effect of Pore Distribution on Microstructure Development: II, First- and Second-Generation Pores. Journal of the American Ceramic Society, 1988, 71, 530-539.	3.8	111
16	Microstructure and Dielectric Properties of Lead Magnesium Niobate-Pyrochlore Diphasic Mixtures. Journal of the American Ceramic Society, 1990, 73, 68-73.	3.8	111
17	Coarsening-Resistant Dual-Phase Interprenetrating Microstructures. Journal of the American Ceramic Society, 1990, 73, 2508-2510.	3.8	105
18	Mechanism for the Role of Magnesia in the Sintering of Alumina Containing Small Amounts of a liquid Phase. Journal of the American Ceramic Society, 1989, 72, 1241-1244.	3.8	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.	3.8	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.	3.8	99
21	Dopant Distributions in Rareâ€Earthâ€Doped Alumina. Journal of the American Ceramic Society, 1997, 80, 373-376.	3.8	97
22	Grain Boundary Complexion Transitions. Annual Review of Materials Research, 2020, 50, 465-492.	9.3	96
23	Demystifying the role of sintering additives with â€œcomplexionâ€. Journal of the European Ceramic Society, 2008, 28, 1485-1493.	5.7	92
24	Grain boundary complexions in ceramics and metals: An overview. Jom, 2009, 61, 38-44.	1.9	85
25	Relating Grainâ€Boundary Complexion to Grainâ€Boundary Kinetics I: Calciaâ€Doped Alumina. Journal of the American Ceramic Society, 2008, 91, 2304-2313.	3.8	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.	3.8	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.	3.8	77
28	Mechanism for the Peritectic Reaction and Growth of Aligned Grains in YBa2Cu3O6+x. Journal of the American Ceramic Society, 1992, 75, 1281-1283.	3.8	76
29	Effect of Pore Distribution on Microstructure Development: III, Model Experiments. Journal of the American Ceramic Society, 1992, 75, 830-843.	3.8	75
30	Effect of Annealing Environment on the Crack Healing and Mechanical Behavior of Silicon Carbideâ€Reinforced Alumina Nanocomposites. Journal of the American Ceramic Society, 1998, 81, 1203-1208.	3.8	74
31	Single Crystals of Pb(Mg_{1/3}Nb_{2/3})O₃â€”35 mol% PbTiO₃ from Polycrystalline Precursors. Journal of the American Ceramic Society, 1998, 81, 244-248.	3.8	73
32	Expanding timeâ€“temperature-transformation (TTT) diagrams to interfaces: A new approach for grain boundary engineering. Acta Materialia, 2016, 106, 78-86.	7.9	73
33	Identification of a bilayer grain boundary complexion in Bi-doped Cu. Scripta Materialia, 2013, 68, 146-149.	5.2	69
34	Codoping of Alumina to Enhance Creep Resistance. Journal of the American Ceramic Society, 1999, 82, 1497-1504.	3.8	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.	3.8	62
36	Machining-Induced Surface Residual Stress Behavior in Al2O3-SiC Nanocomposites. Journal of the American Ceramic Society, 1996, 79, 2403-2409.	3.8	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.	3.8	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.	3.8	60
39	Chemical Heterogeneity in PMNâ€“35PT Ceramics and Effects on Dielectric and Piezoelectric Properties. Journal of the American Ceramic Society, 2002, 85, 3018-3024.	3.8	54
40	Relating Grain Boundary Complexion to Grain Boundary Kinetics II: Silicaâ€Doped Alumina. Journal of the American Ceramic Society, 2008, 91, 2314-2320.	3.8	54
41	Intrinsic Grain Boundary Mobility in Alumina. Journal of the American Ceramic Society, 2006, 89, 3885-3887.	3.8	52
42	Sintering kinetics for a model final-stage microstructure: A study of Al2O3. Philosophical Magazine Letters, 1991, 63, 7-14.	1.2	46
43	Review of grain boundary complexion engineering: Know your boundaries. Journal of the American Ceramic Society, 2019, 102, 778-800.	3.8	46
44	Scanning Transmission Electron Microscopy Analysis of Grain Boundaries in Creepâ€Resistant Yttriumâ€• and Lanthanumâ€Doped Alumina Microstructures. Journal of the American Ceramic Society, 1999, 82, 2865-2870.	3.8	45
45	Influence of Yttrium Doping on Grain Misorientation in Aluminum Oxide. Journal of the American Ceramic Society, 1998, 81, 3001-3004.	3.8	43
46	The critical influence of carbon on the thermal stability of nanocrystalline Niâ€“W alloys. Scripta Materialia, 2015, 96, 45-48.	5.2	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.	3.8	41
48	A grain boundary phase transition in Siâ€“Au. Scripta Materialia, 2012, 66, 203-206.	5.2	38
49	The influence of oxygen contamination on the thermal stability and hardness of nanocrystalline Niâ€“W alloys. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2016, 664, 49-57.	5.6	38
50	Mechanism of ?Solid-State? Single-Crystal Conversion in Alumina. Journal of the American Ceramic Society, 2007, 90, 993-995.	3.8	37
51	Effects of CaO on the Strength and Toughness of AlN. Journal of the American Ceramic Society, 1989, 72, 469-473.	3.8	36
52	Influence of interface energies on solute partitioning mechanisms in doped aluminas. Acta Materialia, 2010, 58, 5097-5108.	7.9	35
53	Kinetics of {001} Pb(Mg_{1/3}Nb_{2/3})O₃â€“35 mol% PbTiO₃ Single Crystals Grown by Seeded Polycrystal Conversion. Journal of the American Ceramic Society, 2003, 86, 2182-2187.	3.8	34
54	Microstructure and fracture toughness of electrodeposited Ni-21Âat.% W alloy thick films. Acta Materialia, 2018, 143, 272-280.	7.9	34

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55	Atomic-resolution observation of Hf-doped alumina grain boundaries. Scripta Materialia, 2013, 68, 703-706.	5.2	33
56	Influence of grain boundary energy on the nucleation of complexion transitions. Scripta Materialia, 2014, 88, 1-4.	5.2	32
57	Influence of Dopant Concentration on Creep Properties of Nd₂O₃â€Doped Alumina. Journal of the American Ceramic Society, 2001, 84, 1010-1016.	3.8	31
58	Changes in the Grain Boundary Character and Energy Distributions Resulting from a Complexion Transition in Ca-Doped Yttria. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2012, 43, 3532-3538.	2.2	31
59	Complexion time-temperature-transformation (TTT) diagrams: Opportunities and challenges. Current Opinion in Solid State and Materials Science, 2016, 20, 316-323.	11.5	31
60	Grain boundary complexion transitions in WO3- and CuO-doped TiO2 bicrystals. Acta Materialia, 2013, 61, 1691-1704.	7.9	30
61	Formation of Grain-Boundary Carbon-Containing Phase During Annealing of YBa2Cu3O6+x. Journal of the American Ceramic Society, 1989, 72, 1997-2000.	3.8	29
62	Improved tensile creep properties of yttrium- and lanthanum-doped alumina: a solid solution effect. Journal of Materials Research, 2001, 16, 425-429.	2.6	29
63	Theory and New Applications ofEx SituLift Out. Microscopy and Microanalysis, 2015, 21, 1034-1048.	0.4	27
64	High-Temperature Fracture Toughness of Duplex Microstructures. Journal of the American Ceramic Society, 1996, 79, 58-64.	3.8	26
65	The Effect of Yttrium on Oxygen Grain-Boundary Transport in Polycrystalline Alumina Measured Using Ni Marker Particles. Journal of the American Ceramic Society, 2008, 91, 2002-2008.	3.8	26
66	Anti-thermal behavior of materials. Scripta Materialia, 2015, 103, 1-5.	5.2	26
67	Diffusion Controlled Abnormal Grain Growth in Ceramics. Materials Science Forum, 2007, 558-559, 1227-1236.	0.3	25
68	Effect of Nd₂O₃ Doping on the Densification and Abnormal Grain Growth Behavior of Highâ€Purity Alumina. Journal of the American Ceramic Society, 2004, 87, 378-383.	3.8	24
69	Direct Observation of Multilayer Adsorption on Alumina Grain Boundaries. Journal of the American Ceramic Society, 2007, 90, 996-998.	3.8	24
70	Grain boundary plane distributions in aluminas evolving by normal and abnormal grain growth and displaying different complexions. International Journal of Materials Research, 2010, 101, 50-56.	0.3	24
71	Grain Growth Anomaly and Dielectric Response in Ti-rich Strontium Titanate Ceramics. Journal of Physical Chemistry C, 2013, 117, 24787-24795.	3.1	23
72	Correlations between microstructure, fracture morphology, and fracture toughness of nanocrystalline Niâ€“W alloys. Scripta Materialia, 2016, 113, 84-88.	5.2	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.	5.2	23
74	Observations of grain boundary chemistry variations in a boron carbide processed with oxide additives. Scripta Materialia, 2018, 142, 106-110.	5.2	23
75	Modeling of Grainâ€Boundary Segregation Behavior in Aluminum Oxide. Journal of the American Ceramic Society, 2000, 83, 344-352.	3.8	22
76	Analytical Microscopy Study of Phases and Fracture in Y2O3-La2O3 Alloys. Journal of the American Ceramic Society, 1988, 71, 820-825.	3.8	21
77	Thermal Healing of Laser-Induced Internal Cracks in Lithium Fluoride Crystals. Journal of the American Ceramic Society, 1992, 75, 1596-1602.	3.8	21
78	Mechanical Properties of Interpenetrating Microstructures: The Al2O3/c-ZrO2 System. Journal of the American Ceramic Society, 1992, 75, 418-423.	3.8	21
79	Grain boundary segregation in Alâ€“Mn electrodeposits prepared from ionic liquid. Journal of Materials Science, 2016, 51, 438-448.	3.7	21
80	Dataâ€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.	3.8	20
81	Liquid Phase Sintering of Alumina, I. Microstructure Evolution and Densification. Journal of the American Ceramic Society, 2005, 88, 1702-1707.	3.8	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.	3.8	18
83	Influence of Excess PbO Additions on {111} Singleâ€Crystal Growth of Pb(Mg_{1/3}Nb_{2/3})O₃â€“35 mol% PbTiO₃by Seeded Polycrystal Conversion. Journal of the American Ceramic Society, 2003, 86, 2176-2181.	3.8	18
84	Effect of PbO on the Kinetics of {001} Pb(Mg1/3Nb2/3)O3-35 mol% PbTiO3 Single Crystals Grown into Fully Dense Matrices. Journal of the American Ceramic Society, 2006, 89, 856-862.	3.8	18
85	Data analytics using canonical correlation analysis and Monte Carlo simulation. Npj Computational Materials, 2017, 3, .	8.7	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.	5.6	18
87	Conversion of Polycrystalline Alumina to Singleâ€Crystal Sapphire by Localized Codoping with Silica. Journal of the American Ceramic Society, 2004, 87, 1879-1882.	3.8	17
88	Surface energies, segregation, and fracture behavior of magnesium aluminate spinel low-index grain boundary planes. Acta Materialia, 2018, 148, 320-329.	7.9	17
89	Effect of Rigid Inclusions on the Densification and Constitutive Parameters of Liquidâ€Phaseâ€Sintered YBa₂Cu₃O_{6+x} Powder Compacts. Journal of the American Ceramic Society, 2003, 86, 883-892.	3.8	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 Grainâ€Boundary Diffusion in Alumina. Journal of the American Ceramic Society, 2015, 98, 3346-3351.	3.8	16
92	Deterioration of a Classical Final-Stage Microstructure: A Study in Alumina. Journal of the American Ceramic Society, 1992, 75, 976-980.	3.8	15
93	Toughnessâ€Curve Behavior of an Aluminaâ€Mullite Composite. Journal of the American Ceramic Society, 1998, 81, 2613-2623.	3.8	15
94	Toughening of an Aluminaâ€"Mullite Composite by Unbroken Bridging Elements. Journal of the American Ceramic Society, 2000, 83, 833-840.	3.8	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.	3.8	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.	3.8	13
97	Effect of silver addition on the microstructure of YBa2Cu3O7â^'x. Journal of Materials Research, 1994, 9, 1342-1349.	2.6	12
98	A grain boundary mobility discontinuity in reactive element Zr-doped Al 2 O 3. Scripta Materialia, 2014, 90-91, 33-36.	5.2	12
99	Controlled heterogeneous nucleation of melt-textured YBa₂Cu₃O_{6+x} by addition of Al₂O₃ particles. Journal of Materials Research, 1993, 8, 2128-2133.	2.6	11
100	Influence of Complexion Transitions on Microstructure Evolution in Specialty Aluminas. Journal of the American Ceramic Society, 2015, 98, 1347-1355.	3.8	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.	3.8	10
102	Compositional tailoring of the thermal expansion coefficient of tantalum (V) oxide. Journal of Materials Science, 2006, 41, 689-695.	3.7	10
103	Effects of Inclusions on the Sintering Behavior of YBa2Cu3O6+x. Journal of the American Ceramic Society, 1990, 73, 2740-2742.	3.8	9
104	Alumina platelet reinforced reaction bonded aluminum oxide composites: Textured and random. Journal of Materials Research, 1997, 12, 3300-3306.	2.6	9
105	An Orderâ€"Disorder Transition in Surface Complexions and Its Influence on Crystal Growth of Boron-Rich Nanostructures. Crystal Growth and Design, 2015, 15, 3547-3551.	3.0	9
106	Ignition phenomena and controlled firing of reaction-bonded aluminum oxide. Acta Materialia, 2001, 49, 1095-1103.	7.9	8
107	Interface Stabilized Nanoscale Quasi-Liquid Films. Microscopy Today, 2009, 17, 22-27.	0.3	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.	5.2	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.	3.8	7
110	Nearâ€Intrinsic Grainâ€Boundary Mobility in Dense Yttria. Journal of the American Ceramic Society, 2011, 94, 651-655.	3.8	7
111	Embedding Ba Monolayers and Bilayers in Boron Carbide Nanowires. Scientific Reports, 2015, 5, 16960.	3.3	6
112	<title>Processing and application of solid state converted high-strain materials</title>. , 1999, , .		5
113	Alumina Agglomerate Effects on Toughnessâ€Curve Behavior of Aluminaâ€“Mullite Composites. Journal of the American Ceramic Society, 2000, 83, 3089-3094.	3.8	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 Euâ€doping and grain boundary plane on complexion transitions in MgAl 2 O 4. Journal of the American Ceramic Society, 2021, 104, 4203-4213.	3.8	5
116	Journal Effect of a Liquid Phase on the Sintering of Heterogeneous YBa2Cu3O6+x Compacts. Journal of the American Ceramic Society, 1991, 74, 2175-2179.	3.8	4
117	Seeded Growth from Twinned and Untwinned Abnormal Grains of Pb(Mg1/3Nb2/3)O3-35 mol% PbTiO3 in a Matrix Containing PbO Additions. Journal of the American Ceramic Society, 2004, 87, 1339-1342.	3.8	4
118	Experimental observations of amorphization in multiple generations of boron carbide. Journal of the American Ceramic Society, 2022, 105, 3008-3029.	3.8	4
119	Surface Coating Technique for Revealing Grain Structures in Alumina. Journal of the American Ceramic Society, 1988, 71, C-174-C-175.	3.8	2
120	Effect of Liquid Phase Chemistry on Single-Crystal Growth in PMN-35PT. Journal of the American Ceramic Society, 2006, 89, 060601012420010-???.	3.8	2
121	Connecting Phase Stability to the Grain Growth Behavior of Ni-W Alloys. Microscopy and Microanalysis, 2016, 22, 270-271.	0.4	2
122	Seeding Induced Aligned Microstructures (S.I.A.M.) in Yba2Cu306+X. Materials Research Society Symposia Proceedings, 1989, 169, 271.	0.1	1
123	Superplastic Deformation in Fineâ€Grained YBa₂Cu₃O_{7â^'x}. Journal of the American Ceramic Society, 2002, 85, 1190-1196.	3.8	1
124	Phase diagram of carbon-nickel-tungsten: A superatom model. Physical Review Materials, 2017, 1, .	2.4	1
125	Microstructure evolution of a Cu and Î¸-Al2O3 composite observed by aberration corrected HAADF-STEM. Microscopy and Microanalysis, 2015, 21, 1351-1352.	0.4	0
126	A Grain Boundary â€œTTâ€•â€“ â€œTribute to Thomasâ€¦. Microscopy and Microanalysis, 2016, 22, 1230-1231.	0.4	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, , .	3.8	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.	3.8	0
129	The Lehigh Presidential Nano-Human Interface Initiative: Convergence of materials and cognitive sciences. MRS Bulletin, 0, , 1.	3.5	0