Martin P Harmer

List of Publications by Citations

127 papers	6,104 citations	41 h-index	75 g-index
129 ext. papers	6,612 ext. citations	4.9 avg, IF	5.77 L-index

#	Paper	IF	Citations
127	Grain boundary complexions. *Acta Materialia*, **2014**, 62, 1-48	8.4	497
126	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	463
125	Complexion: A new concept for kinetic engineering in materials science. *Acta Materialia*, **2007**, 55, 6208-6218	4	412
124	Mechanical Behavior of Alumina Silicon Carbide Nanocomposites *Journal of the American Ceramic Society*, **1993**, 76, 503-510	3.8	293
123	The role of a bilayer interfacial phase on liquid metal embrittlement. *Science*, **2011**, 333, 1730-3	33.3	204
122	Creep of Duplex Microstructures. *Journal of the American Ceramic Society*, **1994**, 77, 2857-2865	3.8	173
121	Effect of Yttrium and Lanthanum on the Tensile Creep Behavior of Aluminum Oxide. *Journal of the American Ceramic Society*, **2005**, 80, 1013-1017	3.8	159
120	Unique Opportunities for Microstructural Engineering with Duplex and Laminar Ceramic Composites. *Journal of the American Ceramic Society*, **1992**, 75, 1715-1728	3.8	156
119	Materials science. The phase behavior of interfaces. *Science*, **2011**, 332, 182-3	33.3	124
118	Multiple grain boundary transitions in ceramics: A case study of alumina. *Acta Materialia*, **2007**, 55, 5247-5254	4	123
117	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	112
116	Crack Healing and Stress Relaxation in Al2O3 SiC Nanocomposites *Journal of the American Ceramic Society*, **1995**, 78, 567-571	3.8	111
115	Effect of Yttrium and Lanthanum on the Final-Stage Sintering Behavior of Ultrahigh-Purity Alumina. *Journal of the American Ceramic Society*, **2005**, 80, 2005-2012	3.8	102
114	Segregation-induced ordered superstructures at general grain boundaries in a nickel-bismuth alloy. *Science*, **2017**, 358, 97-101	33.3	96
113	Coarsening-Resistant Dual-Phase Interprenetrating Microstructures. *Journal of the American Ceramic Society*, **1990**, 73, 2508-2510	3.8	95
112	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	92
111	Microstructure and Dielectric Properties of Lead Magnesium Niobate-Pyrochlore Diphasic Mixtures. *Journal of the American Ceramic Society*, **1990**, 73, 68-73	3.8	90

110	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	88
109	Effect of Pore Distribution on Microstructure Development: I, Matrix Pores. *Journal of the American Ceramic Society*, **1988**, 71, 113-120	3.8	86
108	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	86
107	Dopant Distributions in Rare-Earth-Doped Alumina. *Journal of the American Ceramic Society*, **2005**, 80, 373-376	3.8	80
106	Demystifying the role of sintering additives with "complexion" *Journal of the European Ceramic Society*, **2008**, 28, 1485-1493	6	79
105	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	72
104	Grain boundary complexions in ceramics and metals: An overview. *Jom*, **2009**, 61, 38-44	2.1	71
103	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	70
102	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	64
101	Identification of a bilayer grain boundary complexion in Bi-doped Cu. *Scripta Materialia*, **2013**, 68, 146-149	3.6	61
100	Relating Grain-Boundary Complexion to Grain-Boundary Kinetics I: Calcia-Doped Alumina. *Journal of the American Ceramic Society*, **2008**, 91, 2304-2313	3.8	61
99	Effect of Pore Distribution on Microstructure Development: III, Model Experiments. *Journal of the American Ceramic Society*, **1992**, 75, 830-843	3.8	60
98	Single Crystals of Pb(Mg1/3Nb2/3)O3–35 mol% PbTiO3 from Polycrystalline Precursors. *Journal of the American Ceramic Society*, **2005**, 81, 244-248	3.8	59
97	Expanding time–temperature-transformation (TTT) diagrams to interfaces: A new approach for grain boundary engineering. *Acta Materialia*, **2016**, 106, 78-86	8.4	58
96	Codoping of Alumina to Enhance Creep Resistance. *Journal of the American Ceramic Society*, **2004**, 82, 1497-1504	3.8	58
95	Effect of Annealing Environment on the Crack Healing and Mechanical Behavior of Silicon Carbide-Reinforced Alumina Nanocomposites. *Journal of the American Ceramic Society*, **2005**, 81, 1203-1208	3.8	55
94	Machining-Induced Surface Residual Stress Behavior in Al2O3–SiC Nanocomposites. *Journal of the American Ceramic Society*, **1996**, 79, 2403-2409	3.8	52
93	The Relative Energies of Normally and Abnormally Growing Grain Boundaries in Alumina Displaying Different Complexions. *Journal of the American Ceramic Society*, **2010**, 93, 1796	3.8	51

92	Chemical Heterogeneity in PMN–35PT Ceramics and Effects on Dielectric and Piezoelectric Properties. *Journal of the American Ceramic Society*, **2004**, 85, 3018-3024	3.8	50
91	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	50
90	Relating Grain Boundary Complexion to Grain Boundary Kinetics II: Silica-Doped Alumina. *Journal of the American Ceramic Society*, **2008**, 91, 2314-2320	3.8	47
89	Sintering kinetics for a model final-stage microstructure: A study of AI2O3. *Philosophical Magazine Letters*, **1991**, 63, 7-14	1	43
88	Sintering of Ultra-High-Purity Alumina Doped Simultaneously with MgO and FeO. *Journal of the American Ceramic Society*, **1987**, 70, 860-866	3.8	42
87	Intrinsic Grain Boundary Mobility in Alumina. *Journal of the American Ceramic Society*, **2006**, 89, 3885-3887	3.8	41
86	Grain Boundary Complexion Transitions. *Annual Review of Materials Research*, **2020**, 50, 465-492	12.8	39
85	Influence of Yttrium Doping on Grain Misorientation in Aluminum Oxide. *Journal of the American Ceramic Society*, **2005**, 81, 3001-3004	3.8	38
84	The critical influence of carbon on the thermal stability of nanocrystalline Ni–W alloys. *Scripta Materialia*, **2015**, 96, 45-48	5.6	36
83	Mechanism of Solid-State Single-Crystal Conversion in Alumina. *Journal of the American Ceramic Society*, **2007**, 90, 993-995	3.8	35
82	A grain boundary phase transition in Si–Au. *Scripta Materialia*, **2012**, 66, 203-206	5.6	34
81	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	5.3	34
80	Kinetics of {001} Pb(Mg1/3Nb2/3)O3–35 mol% PbTiO3 Single Crystals Grown by Seeded Polycrystal Conversion. *Journal of the American Ceramic Society*, **2003**, 86, 2182-2187	3.8	33
79	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	33
78	Influence of interface energies on solute partitioning mechanisms in doped aluminas. *Acta Materialia*, **2010**, 58, 5097-5108	8.4	32
77	Scanning Transmission Electron Microscopy Analysis of Grain Boundaries in Creep-Resistant Yttrium- and Lanthanum-Doped Alumina Microstructures. *Journal of the American Ceramic Society*, **2004**, 82, 2865-2870	3.8	32
76	Atomic-resolution observation of Hf-doped alumina grain boundaries. *Scripta Materialia*, **2013**, 68, 703-706	3.6	31
75	Effects of CaO on the Strength and Toughness of AIN. *Journal of the American Ceramic Society*, **1989**, 72, 469-473	3.8	31

74	Formation of Grain-Boundary Carbon-Containing Phase During Annealing of YBa2Cu3O6+x. *Journal of the American Ceramic Society*, **1989**, 72, 1997-2000	3.8	28
73	Influence of grain boundary energy on the nucleation of complexion transitions. *Scripta Materialia*, **2014**, 88, 1-4	5.6	27
72	Grain boundary complexion transitions in WO3- and CuO-doped TiO2 bicrystals. *Acta Materialia*, **2013**, 61, 1691-1704	8.4	27
71	Improved tensile creep properties of yttrium- and lanthanum-doped alumina: a solid solution effect. *Journal of Materials Research*, **2001**, 16, 425-429	2.5	27
70	Microstructure and fracture toughness of electrodeposited Ni-21□at.% W alloy thick films. *Acta Materialia*, **2018**, 143, 272-280	8.4	27
69	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	2.3	26
68	Influence of Dopant Concentration on Creep Properties of Nd2O3-Doped Alumina. *Journal of the American Ceramic Society*, **2001**, 84, 1010-1016	3.8	26
67	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	0.5	23
66	Correlations between microstructure, fracture morphology, and fracture toughness of nanocrystalline Ni□W alloys. *Scripta Materialia*, **2016**, 113, 84-88	5.6	22
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	21
64	Diffusion Controlled Abnormal Grain Growth in Ceramics. *Materials Science Forum*, **2007**, 558-559, 1227-1236	0.4	21
63	Direct Observation of Multilayer Adsorption on Alumina Grain Boundaries. *Journal of the American Ceramic Society*, **2007**, 90, 996-998	3.8	20
62	Complexion time-temperature-transformation (TTT) diagrams: Opportunities and challenges. *Current Opinion in Solid State and Materials Science*, **2016**, 20, 316-323	12	20
61	Grain Growth Anomaly and Dielectric Response in Ti-rich Strontium Titanate Ceramics. *Journal of Physical Chemistry C*, **2013**, 117, 24787-24795	3.8	19
60	Effect of Nd2O3 Doping on the Densification and Abnormal Grain Growth Behavior of High-Purity Alumina. *Journal of the American Ceramic Society*, **2004**, 87, 378-383	3.8	19
59	Grain boundary segregation in Al□Mn electrodeposits prepared from ionic liquid. *Journal of Materials Science*, **2016**, 51, 438-448	4.3	18
58	Theory and New Applications of Ex Situ Lift Out. *Microscopy and Microanalysis*, **2015**, 21, 1034-48	0.5	18
57	Modeling of Grain-Boundary Segregation Behavior in Aluminum Oxide. *Journal of the American Ceramic Society*, **2004**, 83, 344-352	3.8	18

56	Liquid Phase Sintering of Alumina, I. Microstructure Evolution and Densification. *Journal of the American Ceramic Society*, **2005**, 88, 1702-1707	3.8	18
55	Mechanical Properties of Interpenetrating Microstructures: The Al2O3/c-ZrO2 System. *Journal of the American Ceramic Society*, **1992**, 75, 418-423	3.8	18
54	Calculation and validation of a grain boundary complexion diagram for Bi-doped Ni. *Scripta Materialia*, **2017**, 130, 165-169	5.6	17
53	Anti-thermal behavior of materials. *Scripta Materialia*, **2015**, 103, 1-5	5.6	17
52	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	17
51	Conversion of Polycrystalline Alumina to Single-Crystal Sapphire by Localized Codoping with Silica. *Journal of the American Ceramic Society*, **2005**, 87, 1879-1882	3.8	17
50	High-Temperature Fracture Toughness of Duplex Microstructures. *Journal of the American Ceramic Society*, **1996**, 79, 58-64	3.8	17
49	Effect of Rigid Inclusions on the Densification and Constitutive Parameters of Liquid-Phase-Sintered YBa2Cu3O6+x Powder Compacts. *Journal of the American Ceramic Society*, **2003**, 86, 883-892	3.8	16
48	Influence of Excess PbO Additions on {111} Single-Crystal Growth of Pb(Mg1/3Nb2/3)O3–5 mol% PbTiO3 by Seeded Polycrystal Conversion. *Journal of the American Ceramic Society*, **2003**, 86, 2176-2181	3.8	16
47	Thermal Healing of Laser-Induced Internal Cracks in Lithium Fluoride Crystals. *Journal of the American Ceramic Society*, **1992**, 75, 1596-1602	3.8	16
46	Observations of grain boundary chemistry variations in a boron carbide processed with oxide additives. *Scripta Materialia*, **2018**, 142, 106-110	5.6	15
45	Data analytics using canonical correlation analysis and Monte Carlo simulation. *Npj Computational Materials*, **2017**, 3,	10.9	15
44	Effect of PbO on the Kinetics of {001} Pb(Mg1/3Nb2/3)O3–5 mol% PbTiO3 Single Crystals Grown into Fully Dense Matrices. *Journal of the American Ceramic Society*, **2006**, 89, 856-862	3.8	15
43	Toughness-Curve Behavior of an Alumina-Mullite Composite. *Journal of the American Ceramic Society*, **2005**, 81, 2613-2623	3.8	15
42	Analytical Microscopy Study of Phases and Fracture in Y2O3-La2O3 Alloys. *Journal of the American Ceramic Society*, **1988**, 71, 820-825	3.8	15
41	Achieving ultra hard refractory multi-principal element alloys via mechanical alloying. *Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing*, **2019**, 763, 138140	5.3	14
40	Effect of Hf 4+ Concentration on Oxygen Grain-Boundary Diffusion in Alumina. *Journal of the American Ceramic Society*, **2015**, 98, 3346-3351	3.8	13
39	Surface energies, segregation, and fracture behavior of magnesium aluminate spinel low-index grain boundary planes. *Acta Materialia*, **2018**, 148, 320-329	8.4	12

38	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	3.8	12
37	Effect of Alumina Additions on Microstructural Aspects of the □to □Transformation in Tantalum (V) Oxide. *Journal of the American Ceramic Society*, **2005**, 88, 2369-2373	3.8	12
36	Effect of silver addition on the microstructure of YBa2Cu3O7□. *Journal of Materials Research*, **1994**, 9, 1342-1349	2.5	12
35	The Relationship between Grain Boundary Energy, Grain Boundary Complexion Transitions, and Grain Size in Ca-Doped Yttria. *Materials Science Forum*, **2013**, 753, 87-92	0.4	11
34	Toughening of an Alumina□Mullite Composite by Unbroken Bridging Elements. *Journal of the American Ceramic Society*, **2004**, 83, 833-840	3.8	11
33	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	11
32	A grain boundary mobility discontinuity in reactive element Zr-doped Al 2 O 3. *Scripta Materialia*, **2014**, 90-91, 33-36	5.6	10
31	Influence of Complexion Transitions on Microstructure Evolution in Specialty Aluminas. *Journal of the American Ceramic Society*, **2015**, 98, 1347-1355	3.8	9
30	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	3.5	9
29	Controlled heterogeneous nucleation of melt-textured YBa2Cu3O6+x by addition of Al2O3 particles. *Journal of Materials Research*, **1993**, 8, 2128-2133	2.5	9
28	Deterioration of a Classical Final-Stage Microstructure: A Study in Alumina. *Journal of the American Ceramic Society*, **1992**, 75, 976-980	3.8	9
27	Effects of Inclusions on the Sintering Behavior of YBa2Cu3O6+x. *Journal of the American Ceramic Society*, **1990**, 73, 2740-2742	3.8	9
26	Review of grain boundary complexion engineering: Know your boundaries. *Journal of the American Ceramic Society*, **2018**, 102, 778	3.8	9
25	Interface Stabilized Nanoscale Quasi-Liquid Films. *Microscopy Today*, **2009**, 17, 22-27	0.4	8
24	Alumina platelet reinforced reaction bonded aluminum oxide composites: Textured and random. *Journal of Materials Research*, **1997**, 12, 3300-3306	2.5	8
23	Compositional tailoring of the thermal expansion coefficient of tantalum (V) oxide. *Journal of Materials Science*, **2006**, 41, 689-695	4.3	8
22	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	8
21	Comment on □ffect of Interface Structure on the Microstructural Evolution of Ceramics□ *Journal of the American Ceramic Society*, **2007**, 90, 2291-2292	3.8	7

20	Ignition phenomena and controlled firing of reaction-bonded aluminum oxide. *Acta Materialia*, **2001**, 49, 1095-1103	8.4	7
19	Embedding Ba Monolayers and Bilayers in Boron Carbide Nanowires. *Scientific Reports*, **2015**, 5, 16960	4.9	6
18	Near-Intrinsic Grain-Boundary Mobility in Dense Yttria. *Journal of the American Ceramic Society*, **2011**, 94, 651-655	3.8	6
17	Alumina Agglomerate Effects on Toughness-Curve Behavior of Alumina□Mullite Composites. *Journal of the American Ceramic Society*, **2000**, 83, 3089-3094	3.8	5
16	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
15	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		4
14	Processing and application of solid state converted high-strain materials **1999**,		4
13	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	3
12	Surface Coating Technique for Revealing Grain Structures in Alumina. *Journal of the American Ceramic Society*, **1988**, 71, C-174-C-175	3.8	2
11	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	5.6	2
10	Connecting Phase Stability to the Grain Growth Behavior of Ni-W Alloys. *Microscopy and Microanalysis*, **2016**, 22, 270-271	0.5	2
9	Superplastic Deformation in Fine-Grained YBa2Cu3O7□. *Journal of the American Ceramic Society*, **2004**, 85, 1190-1196	3.8	1
8	Seeding Induced Aligned Microstructures (S.I.A.M.) in Yba2Cu306+X. *Materials Research Society Symposia Proceedings*, **1989**, 169, 271		1
7	Phase diagram of carbon-nickel-tungsten: A superatom model. *Physical Review Materials*, **2017**, 1,	3.2	1
6	Effect of Eu-doping and grain boundary plane on complexion transitions in MgAl2O4. *Journal of the American Ceramic Society*, **2021**, 104, 4203-4213	3.8	0
5	Microstructure evolution of a Cu and □Al2O3 composite observed by aberration corrected HAADF-STEM. *Microscopy and Microanalysis*, **2015**, 21, 1351-1352	0.5	
4	Effect of Liquid Phase Chemistry on Single-Crystal Growth in PMN□5PT. *Journal of the American Ceramic Society*, **2006**, 89, 060601012420010-???	3.8	
3	The Lehigh Presidential Nano-Human Interface Initiative: Convergence of materials and cognitive sciences. *MRS Bulletin*,1	3.2	

2	A Grain Boundary □TT□ribute to Thomas□ *Microscopy and Microanalysis*, **2016**, 22, 1230-1231	0.5
1	Linking grain boundary structure and composition to microstructure in commercial-grade-doped specialty Aluminas. *Journal of the American Ceramic Society*, **2022**, 105, 626	3.8