

Martin P Harmer

List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

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	Linking grain boundary structure and composition to microstructure in commercial-grade-doped specialty Aluminas. <i>Journal of the American Ceramic Society</i> , 2022 , 105, 626	3.8	
126	Effect of Eu-doping and grain boundary plane on complexion transitions in MgAl ₂ O ₄ . <i>Journal of the American Ceramic Society</i> , 2021 , 104, 4203-4213	3.8	0
125	Grain Boundary Complexion Transitions. <i>Annual Review of Materials Research</i> , 2020 , 50, 465-492	12.8	39
124	The influence of grain boundary area on the complexion time-temperature-transformation diagram of Eu-doped magnesium aluminate spinel. <i>Scripta Materialia</i> , 2020 , 178, 251-255	5.6	2
123	Achieving ultra hard refractory multi-principal element alloys via mechanical alloying. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2019 , 763, 138140	5.3	14
122	Data-driven glass/ceramic science research: Insights from the glass and ceramic and data science/informatics communities. <i>Journal of the American Ceramic Society</i> , 2019 , 102, 6385-6406	3.8	12
121	Surface energies, segregation, and fracture behavior of magnesium aluminate spinel low-index grain boundary planes. <i>Acta Materialia</i> , 2018 , 148, 320-329	8.4	12
120	Observations of grain boundary chemistry variations in a boron carbide processed with oxide additives. <i>Scripta Materialia</i> , 2018 , 142, 106-110	5.6	15
119	Microstructure and fracture toughness of electrodeposited Ni-21at.% W alloy thick films. <i>Acta Materialia</i> , 2018 , 143, 272-280	8.4	27
118	Review of grain boundary complexion engineering: Know your boundaries. <i>Journal of the American Ceramic Society</i> , 2018 , 102, 778	3.8	9
117	Calculation and validation of a grain boundary complexion diagram for Bi-doped Ni. <i>Scripta Materialia</i> , 2017 , 130, 165-169	5.6	17
116	Segregation-induced ordered superstructures at general grain boundaries in a nickel-bismuth alloy. <i>Science</i> , 2017 , 358, 97-101	33.3	96
115	Data analytics using canonical correlation analysis and Monte Carlo simulation. <i>Npj Computational Materials</i> , 2017 , 3,	10.9	15
114	Phase diagram of carbon-nickel-tungsten: A superatom model. <i>Physical Review Materials</i> , 2017 , 1,	3.2	1
113	Expanding time-temperature-transformation (TTT) diagrams to interfaces: A new approach for grain boundary engineering. <i>Acta Materialia</i> , 2016 , 106, 78-86	8.4	58
112	Grain boundary segregation in Al ₁₃ Mn electrodeposits prepared from ionic liquid. <i>Journal of Materials Science</i> , 2016 , 51, 438-448	4.3	18
111	Correlations between microstructure, fracture morphology, and fracture toughness of nanocrystalline Ni ₃ W alloys. <i>Scripta Materialia</i> , 2016 , 113, 84-88	5.6	22

110	A Grain Boundary Contribution to Thomas' <i>Microscopy and Microanalysis</i> , 2016 , 22, 1230-1231	0.5	
109	Connecting Phase Stability to the Grain Growth Behavior of Ni-W Alloys. <i>Microscopy and Microanalysis</i> , 2016 , 22, 270-271	0.5	2
108	Complexion time-temperature-transformation (TTT) diagrams: Opportunities and challenges. <i>Current Opinion in Solid State and Materials Science</i> , 2016 , 20, 316-323	12	20
107	The influence of oxygen contamination on the thermal stability and hardness of nanocrystalline Ni-W alloys. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2016 , 664, 49-57	5.3	34
106	Influence of Complexion Transitions on Microstructure Evolution in Specialty Aluminas. <i>Journal of the American Ceramic Society</i> , 2015 , 98, 1347-1355	3.8	9
105	Anti-thermal behavior of materials. <i>Scripta Materialia</i> , 2015 , 103, 1-5	5.6	17
104	An Order-Disorder Transition in Surface Complexions and Its Influence on Crystal Growth of Boron-Rich Nanostructures. <i>Crystal Growth and Design</i> , 2015 , 15, 3547-3551	3.5	9
103	The critical influence of carbon on the thermal stability of nanocrystalline Ni-W alloys. <i>Scripta Materialia</i> , 2015 , 96, 45-48	5.6	36
102	Theory and New Applications of Ex Situ Lift Out. <i>Microscopy and Microanalysis</i> , 2015 , 21, 1034-48	0.5	18
101	Embedding Ba Monolayers and Bilayers in Boron Carbide Nanowires. <i>Scientific Reports</i> , 2015 , 5, 16960	4.9	6
100	Effect of Hf ⁴⁺ Concentration on Oxygen Grain-Boundary Diffusion in Alumina. <i>Journal of the American Ceramic Society</i> , 2015 , 98, 3346-3351	3.8	13
99	Microstructure evolution of a Cu and Al ₂ O ₃ composite observed by aberration corrected HAADF-STEM. <i>Microscopy and Microanalysis</i> , 2015 , 21, 1351-1352	0.5	
98	A grain boundary mobility discontinuity in reactive element Zr-doped Al ₂ O ₃ . <i>Scripta Materialia</i> , 2014 , 90-91, 33-36	5.6	10
97	Influence of grain boundary energy on the nucleation of complexion transitions. <i>Scripta Materialia</i> , 2014 , 88, 1-4	5.6	27
96	Grain boundary complexions. <i>Acta Materialia</i> , 2014 , 62, 1-48	8.4	497
95	Atomic-resolution observation of Hf-doped alumina grain boundaries. <i>Scripta Materialia</i> , 2013 , 68, 703-706	9.6	31
94	Grain boundary complexion transitions in WO ₃ - and CuO-doped TiO ₂ bicrystals. <i>Acta Materialia</i> , 2013 , 61, 1691-1704	8.4	27
93	Identification of a bilayer grain boundary complexion in Bi-doped Cu. <i>Scripta Materialia</i> , 2013 , 68, 146-149	9.6	61

92	Grain Growth Anomaly and Dielectric Response in Ti-rich Strontium Titanate Ceramics. <i>Journal of Physical Chemistry C</i> , 2013 , 117, 24787-24795	3.8	19
91	The Relationship between Grain Boundary Energy, Grain Boundary Complexion Transitions, and Grain Size in Ca-Doped Yttria. <i>Materials Science Forum</i> , 2013 , 753, 87-92	0.4	11
90	A grain boundary phase transition in SiAlu. <i>Scripta Materialia</i> , 2012 , 66, 203-206	5.6	34
89	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	2.3	26
88	Near-Intrinsic Grain-Boundary Mobility in Dense Yttria. <i>Journal of the American Ceramic Society</i> , 2011 , 94, 651-655	3.8	6
87	Materials science. The phase behavior of interfaces. <i>Science</i> , 2011 , 332, 182-3	33.3	124
86	The role of a bilayer interfacial phase on liquid metal embrittlement. <i>Science</i> , 2011 , 333, 1730-3	33.3	204
85	Interfacial Kinetic Engineering: How Far Have We Come Since Kingery's Inaugural Sosman Address?. <i>Journal of the American Ceramic Society</i> , 2010 , 93, 301-317	3.8	70
84	The Relative Energies of Normally and Abnormally Growing Grain Boundaries in Alumina Displaying Different Complexions. <i>Journal of the American Ceramic Society</i> , 2010 , 93, 1796	3.8	51
83	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	0.5	23
82	Influence of interface energies on solute partitioning mechanisms in doped aluminas. <i>Acta Materialia</i> , 2010 , 58, 5097-5108	8.4	32
81	Grain boundary complexions in ceramics and metals: An overview. <i>Jom</i> , 2009 , 61, 38-44	2.1	71
80	Interface Stabilized Nanoscale Quasi-Liquid Films. <i>Microscopy Today</i> , 2009 , 17, 22-27	0.4	8
79	Demystifying the role of sintering additives with "complexion" <i>Journal of the European Ceramic Society</i> , 2008 , 28, 1485-1493	6	79
78	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	3.8	21
77	Relating Grain Boundary Complexion to Grain Boundary Kinetics II: Silica-Doped Alumina. <i>Journal of the American Ceramic Society</i> , 2008 , 91, 2314-2320	3.8	47
76	Relating Grain-Boundary Complexion to Grain-Boundary Kinetics I: Calcia-Doped Alumina. <i>Journal of the American Ceramic Society</i> , 2008 , 91, 2304-2313	3.8	61
75	Multiple grain boundary transitions in ceramics: A case study of alumina. <i>Acta Materialia</i> , 2007 , 55, 5247-5254	32.54	123

74	Complexion: A new concept for kinetic engineering in materials science. <i>Acta Materialia</i> , 2007 , 55, 6208-6218	4.1	28
73	Mechanism of Solid-State Single-Crystal Conversion in Alumina. <i>Journal of the American Ceramic Society</i> , 2007 , 90, 993-995	3.8	35
72	Direct Observation of Multilayer Adsorption on Alumina Grain Boundaries. <i>Journal of the American Ceramic Society</i> , 2007 , 90, 996-998	3.8	20
71	Comment on Effect of Interface Structure on the Microstructural Evolution of Ceramics. <i>Journal of the American Ceramic Society</i> , 2007 , 90, 2291-2292	3.8	7
70	Diffusion Controlled Abnormal Grain Growth in Ceramics. <i>Materials Science Forum</i> , 2007 , 558-559, 1227-1236	4.1	21
69	Effect of PbO on the Kinetics of {001} Pb(Mg _{1/3} Nb _{2/3})O ₃ 5 mol% PbTiO ₃ Single Crystals Grown into Fully Dense Matrices. <i>Journal of the American Ceramic Society</i> , 2006 , 89, 856-862	3.8	15
68	Effect of Liquid Phase Chemistry on Single-Crystal Growth in PMN 5PT. <i>Journal of the American Ceramic Society</i> , 2006 , 89, 060601012420010-???	3.8	
67	Intrinsic Grain Boundary Mobility in Alumina. <i>Journal of the American Ceramic Society</i> , 2006 , 89, 3885-3887	3.8	41
66	Compositional tailoring of the thermal expansion coefficient of tantalum (V) oxide. <i>Journal of Materials Science</i> , 2006 , 41, 689-695	4.3	8
65	Dopant Distributions in Rare-Earth-Doped Alumina. <i>Journal of the American Ceramic Society</i> , 2005 , 80, 373-376	3.8	80
64	Effect of Yttrium and Lanthanum on the Tensile Creep Behavior of Aluminum Oxide. <i>Journal of the American Ceramic Society</i> , 2005 , 80, 1013-1017	3.8	159
63	Effect of Yttrium and Lanthanum on the Final-Stage Sintering Behavior of Ultrahigh-Purity Alumina. <i>Journal of the American Ceramic Society</i> , 2005 , 80, 2005-2012	3.8	102
62	Single Crystals of Pb(Mg _{1/3} Nb _{2/3})O ₃ 5 mol% PbTiO ₃ from Polycrystalline Precursors. <i>Journal of the American Ceramic Society</i> , 2005 , 81, 244-248	3.8	59
61	Effect of Annealing Environment on the Crack Healing and Mechanical Behavior of Silicon Carbide-Reinforced Alumina Nanocomposites. <i>Journal of the American Ceramic Society</i> , 2005 , 81, 1203-1208	3.8	55
60	Toughness-Curve Behavior of an Alumina-Mullite Composite. <i>Journal of the American Ceramic Society</i> , 2005 , 81, 2613-2623	3.8	15
59	Influence of Yttrium Doping on Grain Misorientation in Aluminum Oxide. <i>Journal of the American Ceramic Society</i> , 2005 , 81, 3001-3004	3.8	38
58	Conversion of Polycrystalline Alumina to Single-Crystal Sapphire by Localized Codoping with Silica. <i>Journal of the American Ceramic Society</i> , 2005 , 87, 1879-1882	3.8	17
57	Liquid Phase Sintering of Alumina, I. Microstructure Evolution and Densification. <i>Journal of the American Ceramic Society</i> , 2005 , 88, 1702-1707	3.8	18

56	Liquid Phase Sintering of Alumina, II. Penetration of Liquid Phase into Model Microstructures. <i>Journal of the American Ceramic Society</i> , 2005 , 88, 1708-1713	3.8	11
55	Liquid Phase Sintering of Alumina, III. Effect of Trapped Gases in Pores on Densification. <i>Journal of the American Ceramic Society</i> , 2005 , 88, 1714-1719	3.8	8
54	Effect of Alumina Additions on Microstructural Aspects of the β to α Transformation in Tantalum (V) Oxide. <i>Journal of the American Ceramic Society</i> , 2005 , 88, 2369-2373	3.8	12
53	Changes in the distribution of interfaces in PMN-35 mol% PT as a function of time. <i>International Journal of Materials Research</i> , 2005 , 96, 207-210		4
52	Codoping of Alumina to Enhance Creep Resistance. <i>Journal of the American Ceramic Society</i> , 2004 , 82, 1497-1504	3.8	58
51	Scanning Transmission Electron Microscopy Analysis of Grain Boundaries in Creep-Resistant Yttrium- and Lanthanum-Doped Alumina Microstructures. <i>Journal of the American Ceramic Society</i> , 2004 , 82, 2865-2870	3.8	32
50	Modeling of Grain-Boundary Segregation Behavior in Aluminum Oxide. <i>Journal of the American Ceramic Society</i> , 2004 , 83, 344-352	3.8	18
49	Superplastic Deformation in Fine-Grained YBa ₂ Cu ₃ O _{7-x} . <i>Journal of the American Ceramic Society</i> , 2004 , 85, 1190-1196	3.8	1
48	Chemical Heterogeneity in PMN β 5PT Ceramics and Effects on Dielectric and Piezoelectric Properties. <i>Journal of the American Ceramic Society</i> , 2004 , 85, 3018-3024	3.8	50
47	Seeded Growth from Twinned and Untwinned Abnormal Grains of Pb(Mg _{1/3} Nb _{2/3})O ₃ β 5 mol% PbTiO ₃ in a Matrix Containing PbO Additions. <i>Journal of the American Ceramic Society</i> , 2004 , 87, 1339-1342	3.8	4
46	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	3.8	19
45	Toughening of an Alumina/Mullite Composite by Unbroken Bridging Elements. <i>Journal of the American Ceramic Society</i> , 2004 , 83, 833-840	3.8	11
44	Effect of Rigid Inclusions on the Densification and Constitutive Parameters of Liquid-Phase-Sintered YBa ₂ Cu ₃ O _{6+x} Powder Compacts. <i>Journal of the American Ceramic Society</i> , 2003 , 86, 883-892	3.8	16
43	Influence of Excess PbO Additions on {111} Single-Crystal Growth of Pb(Mg _{1/3} Nb _{2/3})O ₃ β 5 mol% PbTiO ₃ by Seeded Polycrystal Conversion. <i>Journal of the American Ceramic Society</i> , 2003 , 86, 2176-2181	3.8	16
42	Kinetics of {001} Pb(Mg _{1/3} Nb _{2/3})O ₃ β 5 mol% PbTiO ₃ Single Crystals Grown by Seeded Polycrystal Conversion. <i>Journal of the American Ceramic Society</i> , 2003 , 86, 2182-2187	3.8	33
41	X-ray Absorption Near-Edge Structure of Grain-Boundary-Segregated Y and Zr in Creep-Resistant Alumina. <i>Journal of the American Ceramic Society</i> , 2002 , 85, 2492-2498	3.8	17
40	Ignition phenomena and controlled firing of reaction-bonded aluminum oxide. <i>Acta Materialia</i> , 2001 , 49, 1095-1103	8.4	7
39	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	3.8	26

38	Improved tensile creep properties of yttrium- and lanthanum-doped alumina: a solid solution effect. <i>Journal of Materials Research</i> , 2001 , 16, 425-429	2.5	27
37	Alumina Agglomerate Effects on Toughness-Curve Behavior of Alumina/Mullite Composites. <i>Journal of the American Ceramic Society</i> , 2000 , 83, 3089-3094	3.8	5
36	Processing and application of solid state converted high-strain materials 1999 ,		4
35	Alumina platelet reinforced reaction bonded aluminum oxide composites: Textured and random. <i>Journal of Materials Research</i> , 1997 , 12, 3300-3306	2.5	8
34	High-Temperature Fracture Toughness of Duplex Microstructures. <i>Journal of the American Ceramic Society</i> , 1996 , 79, 58-64	3.8	17
33	Machining-Induced Surface Residual Stress Behavior in Al ₂ O ₃ /SiC Nanocomposites. <i>Journal of the American Ceramic Society</i> , 1996 , 79, 2403-2409	3.8	52
32	Crack Healing and Stress Relaxation in Al ₂ O ₃ /SiC Nanocomposites. <i>Journal of the American Ceramic Society</i> , 1995 , 78, 567-571	3.8	111
31	Effect of silver addition on the microstructure of YBa ₂ Cu ₃ O _{7-x} . <i>Journal of Materials Research</i> , 1994 , 9, 1342-1349	2.5	12
30	Creep of Duplex Microstructures. <i>Journal of the American Ceramic Society</i> , 1994 , 77, 2857-2865	3.8	173
29	Controlled heterogeneous nucleation of melt-textured YBa ₂ Cu ₃ O _{6+x} by addition of Al ₂ O ₃ particles. <i>Journal of Materials Research</i> , 1993 , 8, 2128-2133	2.5	9
28	Mechanical Behavior of Alumina/Silicon Carbide Nanocomposites. <i>Journal of the American Ceramic Society</i> , 1993 , 76, 503-510	3.8	293
27	Influence of Atmosphere on the Final-Stage Sintering Kinetics of Ultra-High-Purity Alumina. <i>Journal of the American Ceramic Society</i> , 1993 , 76, 2248-2256	3.8	33
26	Effect of Pore Distribution on Microstructure Development: III, Model Experiments. <i>Journal of the American Ceramic Society</i> , 1992 , 75, 830-843	3.8	60
25	Deterioration of a Classical Final-Stage Microstructure: A Study in Alumina. <i>Journal of the American Ceramic Society</i> , 1992 , 75, 976-980	3.8	9
24	Thermal Healing of Laser-Induced Internal Cracks in Lithium Fluoride Crystals. <i>Journal of the American Ceramic Society</i> , 1992 , 75, 1596-1602	3.8	16
23	Mechanism for the Peritectic Reaction and Growth of Aligned Grains in YBa ₂ Cu ₃ O _{6+x} . <i>Journal of the American Ceramic Society</i> , 1992 , 75, 1281-1283	3.8	72
22	Unique Opportunities for Microstructural Engineering with Duplex and Lamellar Ceramic Composites. <i>Journal of the American Ceramic Society</i> , 1992 , 75, 1715-1728	3.8	156
21	Mechanical Properties of Interpenetrating Microstructures: The Al ₂ O ₃ /c-ZrO ₂ System. <i>Journal of the American Ceramic Society</i> , 1992 , 75, 418-423	3.8	18

20	Journal Effect of a Liquid Phase on the Sintering of Heterogeneous YBa ₂ Cu ₃ O _{6+x} Compacts. <i>Journal of the American Ceramic Society</i> , 1991 , 74, 2175-2179	3.8	3
19	Sintering kinetics for a model final-stage microstructure: A study of Al ₂ O ₃ . <i>Philosophical Magazine Letters</i> , 1991 , 63, 7-14	1	43
18	Microstructure and Dielectric Properties of Lead Magnesium Niobate-Pyrochlore Diphasic Mixtures. <i>Journal of the American Ceramic Society</i> , 1990 , 73, 68-73	3.8	90
17	Effect of Magnesia Solute on Surface Diffusion in Sapphire and the Role-of Magnesia in the Sintering of Alumina. <i>Journal of the American Ceramic Society</i> , 1990 , 73, 833-837	3.8	50
16	Effects of Inclusions on the Sintering Behavior of YBa ₂ Cu ₃ O _{6+x} . <i>Journal of the American Ceramic Society</i> , 1990 , 73, 2740-2742	3.8	9
15	Coarsening-Resistant Dual-Phase Interpenetrating Microstructures. <i>Journal of the American Ceramic Society</i> , 1990 , 73, 2508-2510	3.8	95
14	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	3.8	28
13	Effects of CaO on the Strength and Toughness of AlN. <i>Journal of the American Ceramic Society</i> , 1989 , 72, 469-473	3.8	31
12	Ordering Structure and Dielectric Properties of Undoped and La/Na-Doped Pb(Mg _{1/3} Nb _{2/3})O ₃ . <i>Journal of the American Ceramic Society</i> , 1989 , 72, 593-598	3.8	463
11	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	3.8	92
10	Seeding Induced Aligned Microstructures (S.I.A.M.) in Yba ₂ Cu ₃ O _{6+x} . <i>Materials Research Society Symposia Proceedings</i> , 1989 , 169, 271		1
9	Effect of Pore Distribution on Microstructure Development: I, Matrix Pores. <i>Journal of the American Ceramic Society</i> , 1988 , 71, 113-120	3.8	86
8	Surface Coating Technique for Revealing Grain Structures in Alumina. <i>Journal of the American Ceramic Society</i> , 1988 , 71, C-174-C-175	3.8	2
7	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	3.8	88
6	Analytical Microscopy Study of Phases and Fracture in Y ₂ O ₃ -La ₂ O ₃ Alloys. <i>Journal of the American Ceramic Society</i> , 1988 , 71, 820-825	3.8	15
5	Sintering of Ultra-High-Purity Alumina Doped Simultaneously with MgO and FeO. <i>Journal of the American Ceramic Society</i> , 1987 , 70, 860-866	3.8	42
4	Effect of Powder Purity and Second Phases on the Dielectric Properties of Lead Magnesium Niobate Ceramics. <i>Journal of the American Ceramic Society</i> , 1986 , 69, C-303-C-305	3.8	64
3	Grain-Growth Kinetics for Alumina in the Absence of a Liquid Phase. <i>Journal of the American Ceramic Society</i> , 1985 , 68, C-22-C-24	3.8	86

- 2 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
- 1 The Lehigh Presidential Nano-Human Interface Initiative: Convergence of materials and cognitive sciences. *MRS Bulletin*, 1 3.2