Gregory Rohrer

List of Publications by Citations

322 papers	11,254 citations	57 h-index	92 g-index
331 ext. papers	12,418 ext. citations	5 avg, IF	6.71 L-index

#	Paper	IF	Citations
322	Photocatalysts with internal electric fields. *Nanoscale*, **2014**, 6, 24-42	7.7	542
321	Grain boundary complexions. *Acta Materialia*, **2014**, 62, 1-48	8.4	497
320	Grain boundary energy anisotropy: a review. *Journal of Materials Science*, **2011**, 46, 5881-5895	4.3	275
319	Spatial Separation of Photochemical Oxidation and Reduction Reactions on the Surface of Ferroelectric BaTiO3. *Journal of Physical Chemistry B*, **2001**, 105, 8275-8277	3.4	204
318	Distribution of grain boundaries in magnesia as a function of five macroscopic parameters. *Acta Materialia*, **2003**, 51, 3663-3674	8.4	200
317	Open-core screw dislocations in GaN epilayers observed by scanning force microscopy and high-resolution transmission electron microscopy. *Applied Physics Letters*, **1995**, 67, 2284-2286	3.4	196
316	Orientation Dependence of Photochemical Reactions on TiO2Surfaces. *Journal of Physical Chemistry B*, **1998**, 102, 3216-3226	3.4	185
315	The distribution of internal interfaces in polycrystals. *International Journal of Materials Research*, **2004**, 95, 197-214		178
314	Spatially Selective Photochemical Reduction of Silver on the Surface of Ferroelectric Barium Titanate. *Chemistry of Materials*, **2001**, 13, 241-242	9.6	168
313	Distribution of grain boundaries in aluminum as a function of five macroscopic parameters. *Acta Materialia*, **2004**, 52, 3649-3655	8.4	167
312	Anisotropic Photochemical Reactivity of Bulk TiO2 Crystals. *Journal of Physical Chemistry B*, **1998**, 102, 7323-7327	3.4	166
311	Measuring the five-parameter grain-boundary distribution from observations of planar sections. *Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science*, **2004**, 35, 1981-1989	2.3	153
310	Grain boundary energies in body-centered cubic metals. *Acta Materialia*, **2015**, 88, 346-354	8.4	141
309	Nucleation Barrier for Volume-Conserving Shape Changes of Faceted Crystals. *Journal of the American Ceramic Society*, **2000**, 83, 214-16	3.8	135
308	The relative free energies of grain boundaries in magnesia as a function of five macroscopic parameters. *Acta Materialia*, **2003**, 51, 3675-3686	8.4	132
307	Relative grain boundary area and energy distributions in nickel. *Acta Materialia*, **2009**, 57, 4304-4311	8.4	129
306	Annealing twin development during recrystallization and grain growth in pure nickel. *Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing*, **2014**, 597, 295-303	5.3	127

305	Three-Dimensional Characterization of Microstructure by Electron Back-Scatter Diffraction. *Annual Review of Materials Research*, **2007**, 37, 627-658	12.8	121
304	Variant selection and intervariant crystallographic planes distribution in martensite in a Ti□Al□V alloy. *Acta Materialia*, **2014**, 80, 478-489	8.4	120
303	Five-parameter grain boundary distribution of commercially grain boundary engineered nickel and copper. *Acta Materialia*, **2008**, 56, 2363-2373	8.4	120
302	Structure of the Reduced TiO2(110) Surface Determined by Scanning Tunneling Microscopy. *Science*, **1990**, 250, 1239-41	33.3	117
301	Spatially selective visible light photocatalytic activity of TiO2/BiFeO3 heterostructures. *Journal of Materials Chemistry*, **2011**, 21, 4168		113
300	Structure and Bonding in Crystalline Materials **2001**,		104
299	Residual-Stress Predictions in Polycrystalline Alumina. *Journal of the American Ceramic Society*, **2001**, 84, 2947-2954	3.8	102
298	Segregation-induced ordered superstructures at general grain boundaries in a nickel-bismuth alloy. *Science*, **2017**, 358, 97-101	33.3	96
297	Changes in the five-parameter grain boundary character distribution in □brass brought about by iterative thermomechanical processing. *Acta Materialia*, **2006**, 54, 4489-4502	8.4	95
296	Surface Energy Anisotropy of SrTiO3 at 1400□C in Air. *Journal of the American Ceramic Society*, **2003**, 86, 1933-1939	3.8	92
295	Comparing calculated and measured grain boundary energies in nickel. *Acta Materialia*, **2010**, 58, 5063-5069	8.4	88
294	The relative grain boundary area and energy distributions in a ferritic steel determined from three-dimensional electron backscatter diffraction maps. *Acta Materialia*, **2013**, 61, 1404-1412	8.4	87
293	Photochemical Reactivity of Titania Films on BaTiO3 Substrates: Origin of Spatial Selectivity. *Chemistry of Materials*, **2010**, 22, 5823-5830	9.6	87
292	Distribution of Grain Boundaries in SrTiO3 as a Function of Five Macroscopic Parameters. *Journal of the American Ceramic Society*, **2004**, 87, 670-676	3.8	85
291	A scanning tunneling microscopy and spectroscopy study of the TiO2□(110) surface. *Surface Science*, **1992**, 278, 146-156	1.8	84
290	Measuring the Influence of Grain-Boundary Misorientation on Thermal Groove Geometry in Ceramic Polycrystals. *Journal of the American Ceramic Society*, **2004**, 82, 1529-1536	3.8	82
289	Visible light photochemical activity of heterostructured PbTiO3□TiO2 core□shell particles. *Catalysis Science and Technology*, **2012**, 2, 1945	5.5	81
288	Deriving grain boundary character distributions and relative grain boundary energies from three-dimensional EBSD data. *Materials Science and Technology*, **2010**, 26, 661-669	1.5	78

287	Characterization of the Grain-Boundary Character and Energy Distributions of Yttria Using Automated Serial Sectioning and EBSD in the FIB. *Journal of the American Ceramic Society*, **2009**, 92, 1580-1585	3.8	78
286	Sparse data structure and algorithm for the phase field method. *Modelling and Simulation in Materials Science and Engineering*, **2006**, 14, 1189-1195	2	78
285	Towards an integrated materials characterization toolbox. *Journal of Materials Research*, **2011**, 26, 1341-1383	2.3	75
284	Measuring and Interpreting the Structure of Grain-Boundary Networks. *Journal of the American Ceramic Society*, **2011**, 94, 633-646	3.8	74
283	Mechanism for the development of anisotropic grain boundary character distributions during normal grain growth. *Acta Materialia*, **2009**, 57, 1-7	8.4	73
282	Five-parameter grain boundary distribution in grain boundary engineered brass. *Scripta Materialia*, **2005**, 52, 633-637	5.6	71
281	Heterostructured Ceramic Powders for Photocatalytic Hydrogen Production: Nanostructured TiO2 Shells Surrounding Microcrystalline (Ba,Sr)TiO3 Cores. *Journal of the American Ceramic Society*, **2012**, 95, 1414-1420	3.8	69
280	INFLUENCE OF INTERFACE ANISOTROPY ON GRAIN GROWTH AND COARSENING. *Annual Review of Materials Research*, **2005**, 35, 99-126	12.8	69
279	The origin of photochemical anisotropy in SrTiO3. *Topics in Catalysis*, **2007**, 44, 529-533	2.3	67
278	Interface Character Distributions in WC□Co Composites. *Journal of the American Ceramic Society*, **2008**, 91, 996-1001	3.8	66
277	Scanning Probe Microscopy of Cleaved Molybdates: □MoO3(010), Mo18O52(100), Mo8O23(010), and □Mo4O11(100). *Journal of Solid State Chemistry*, **1996**, 124, 104-115	3.3	66
276	The distribution of intervariant crystallographic planes in a lath martensite using five macroscopic parameters. *Acta Materialia*, **2014**, 63, 86-98	8.4	64
275	Misorientation texture development during grain growth. Part I: Simulation and experiment. *Acta Materialia*, **2009**, 57, 6102-6112	8.4	64
274	Five-parameter grain boundary analysis of a titanium alloy before and after low-temperature annealing. *Scripta Materialia*, **2008**, 58, 183-186	5.6	63
273	Habits of Grains in Dense Polycrystalline Solids. *Journal of the American Ceramic Society*, **2004**, 87, 724-726	3.8	63
272	Stress hot spots in viscoplastic deformation of polycrystals. *Modelling and Simulation in Materials Science and Engineering*, **2010**, 18, 074005	2	60
271	Composition Dependence of the Photochemical reduction of Ag by Ba1□SrxTiO3. *Chemistry of Materials*, **2010**, 22, 3527-3534	9.6	60
270	Distribution and Energies of Grain Boundaries in Magnesia as a Function of Five Degrees of Freedom. *Journal of the American Ceramic Society*, **2004**, 85, 3081-3083	3.8	60

269	Structure Se nsitivity of Photochemical Oxidation and Reduction Reactions on SrTiO3 Surfaces. *Journal of the American Ceramic Society*, **2003**, 86, 1182-1189	3.8	59
268	Observation of annealing twin nucleation at triple lines in nickel during grain growth. *Acta Materialia*, **2015**, 99, 63-68	8.4	58
267	Expanding time□temperature-transformation (TTT) diagrams to interfaces: A new approach for grain boundary engineering. *Acta Materialia*, **2016**, 106, 78-86	8.4	58
266	Effect of anisotropic grain boundary properties on grain boundary plane distributions during grain growth. *Scripta Materialia*, **2005**, 53, 351-355	5.6	58
265	Grain boundary planes: New dimensions in the grain boundary character distribution. *Scripta Materialia*, **2006**, 54, 1005-1009	5.6	57
264	The five parameter grain boundary character distribution of polycrystalline silicon. *Journal of Materials Science*, **2014**, 49, 4938-4945	4.3	56
263	Photochemical Reactivity of Titania Films on BaTiO3 Substrates: Influence of Titania Phase and Orientation. *Chemistry of Materials*, **2010**, 22, 5831-5837	9.6	56
262	Effect of crystal and domain orientation on the visible-light photochemical reduction of Ag on BiFeO□*ACS Applied Materials & Interfaces*, **2011**, 3, 1562-7	9.5	56
261	Geometric and Crystallographic Characterization of WC Surfaces and Grain Boundaries in WC-Co Composites. *Journal of Materials Science*, **2004**, 12, 19-27		56
260	Heat affected zone microstructures and their influence on toughness in two microalloyed HSLA steels. *Acta Materialia*, **2015**, 97, 380-391	8.4	55
259	Effect of ferrite-to-austenite phase transformation path on the interface crystallographic character distributions in a duplex stainless steel. *Acta Materialia*, **2018**, 145, 196-209	8.4	55
258	A scanning probe microscopy study of the (001) surfaces of V2O5 and V6O13. *Surface Science*, **1996**, 367, 87-95	1.8	54
257	Validating computed grain boundary energies in fcc metals using the grain boundary character distribution. *Acta Materialia*, **2011**, 59, 5250-5256	8.4	53
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255	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
254	Grain boundary energy and grain growth in Al films: Comparison of experiments and simulations. *Scripta Materialia*, **2006**, 54, 1059-1063	5.6	51
253	Nucleation Energy Barriers for Volume-Conserving Shape Changes of Crystals with Nonequilibrium Morphologies. *Journal of the American Ceramic Society*, **2004**, 84, 2099-2104	3.8	51
252	Coarsening of Faceted Crystals. *Journal of the American Ceramic Society*, **2004**, 85, 675-682	3.8	49

251	Grain boundary segregation in oxide ceramics. *Journal of the European Ceramic Society*, **2003**, 23, 2841-2848	3	49
250	Five-parameter intervariant boundary characterization of martensite in commercially pure titanium. *Acta Materialia*, **2018**, 154, 147-160	8.4	49
249	The five-parameter grain boundary character and energy distributions of a fully austenitic high-manganese steel using three dimensional data. *Acta Materialia*, **2014**, 70, 281-289	8.4	48
248	Extracting Grain Boundary and Surface Energy from Measurement of Triple Junction Geometry. *Journal of Materials Science*, **1999**, 7, 321-337		48
247	The five parameter grain boundary character distribution of □Ti determined from three-dimensional orientation data. *Acta Materialia*, **2016**, 111, 22-30	8.4	48
246	The Distribution of Grain Boundary Planes in Interstitial Free Steel. *Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science*, **2013**, 44, 115-124	2.3	47
245	Visible-light photochemical activity of heterostructured core-shell materials composed of selected ternary titanates and ferrites coated by tiO2. *ACS Applied Materials & Interfaces*, **2013**, 5, 5064-71	9.5	47
244	The equilibrium crystal shape of strontium titanate and its relationship to the grain boundary plane distribution. *Acta Materialia*, **2015**, 82, 32-40	8.4	46
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242	Modeling the relationship between microstructural features and the strength of WC□o composites. *International Journal of Refractory Metals and Hard Materials*, **2006**, 24, 89-100	4.1	45
241	Heteroepitaxial growth of TiO2 films by ion-beam sputter deposition. *Journal of Crystal Growth*, **1996**, 166, 779-785	1.6	45
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239	The Protonation of MoO3during the Partial Oxidation of Alcohols. *Journal of Catalysis*, **1998**, 173, 219-228	7.3	42
238	The role of grain boundary energy in grain boundary complexion transitions. *Current Opinion in Solid State and Materials Science*, **2016**, 20, 231-239	12	41
237	Consistent representations of and conversions between 3D rotations. *Modelling and Simulation in Materials Science and Engineering*, **2015**, 23, 083501	2	41
236	Orientation relationships of copper crystals on c-plane sapphire. *Acta Materialia*, **2011**, 59, 5320-5331	8.4	41
235	Synthesis of di- and trivalent □-aluminas by ion exchange. *Journal of Solid State Chemistry*, **1986**, 65, 231-240	3.3	41
234	Heterostructured (Ba,Sr)TiO3/TiO2 core/shell photocatalysts: Influence of processing and structure on hydrogen production. *International Journal of Hydrogen Energy*, **2013**, 38, 6948-6959	6.7	40

233	Crystallographic texture in pulsed laser deposited hydroxyapatite bioceramic coatings. *Acta Materialia*, **2007**, 55, 131-139	8.4	40
232	Origin of domain structure in hexagonal silicon carbide boules grown by the physical vapor transport method. *Journal of Crystal Growth*, **2000**, 220, 308-315	1.6	40
231	Grain Boundary Complexion Transitions. *Annual Review of Materials Research*, **2020**, 50, 465-492	12.8	39
230	An atomic force microscopy study of super-dislocation/micropipe complexes on the 6H-SiC(0 0 0 1) growth surface. *Journal of Crystal Growth*, **1997**, 181, 351-362	1.6	39
229	The distribution of grain boundary planes in polycrystals. *Jom*, **2007**, 59, 38-42	2.1	38
228	Misorientation Dependence of the Grain Boundary Energy in Magnesia. *Journal of Materials Science*, **2000**, 8, 131-140		38
227	The observation of oxygen disorder on the V2O5(001) surface using scanning tunneling microscopy. *Surface Science*, **1995**, 322, 293-300	1.8	38
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225	Grain boundary character distribution of nanocrystalline Cu thin films using stereological analysis of transmission electron microscope orientation maps. *Microscopy and Microanalysis*, **2013**, 19, 111-9	0.5	36
224	Abnormal grain growth in the Potts model incorporating grain boundary complexion transitions that increase the mobility of individual boundaries. *Acta Materialia*, **2015**, 96, 390-398	8.4	36
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221	Piezotronic modulations in electro- and photochemical catalysis. *MRS Bulletin*, **2018**, 43, 946-951	3.2	35
220	Thermo-mechanical factors influencing annealing twin development in nickel during recrystallization. *Journal of Materials Science*, **2015**, 50, 5191-5203	4.3	34
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218	The five-parameter grain boundary curvature distribution in an austenitic and ferritic steel. *Acta Materialia*, **2017**, 123, 136-145	8.4	33
217	On the crystallographic characteristics of nanobainitic steel. *Acta Materialia*, **2017**, 127, 426-437	8.4	32
216	Polar Domains at the Surface of Centrosymmetric BiVO4. *Chemistry of Materials*, **2014**, 26, 2774-2776	9.6	32

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214	Influence of interface energies on solute partitioning mechanisms in doped aluminas. *Acta Materialia*, **2010**, 58, 5097-5108	8.4	32
213	Five-Parameter Grain Boundary Analysis by 3D EBSD of an Ultra Fine Grained CuZr Alloy Processed by Equal Channel Angular Pressing. *Advanced Engineering Materials*, **2011**, 13, 237-244	3.5	31
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210	High visible-light photochemical activity of titania decorated on single-wall carbon nanotube aerogels. *RSC Advances*, **2016**, 6, 22285-22294	3.7	30
209	Determining Crystal Habits from Observations of Planar Sections. *Journal of the American Ceramic Society*, **2004**, 85, 2799-2804	3.8	30
208	Focused ion beam and scanning electron microscopy for 3D materials characterization. *MRS Bulletin* , **2014**, 39, 361-365	3.2	29
207	Tail Departure of Log-Normal Grain Size Distributions in Synthetic Three-Dimensional Microstructures. *Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science*, **2012**, 43, 2810-2822	2.3	29
206	Conversion of Diaspore to Corundum: A New □Alumina Transformation Sequence. *Journal of the American Ceramic Society*, **2005**, 80, 2677-2680	3.8	28
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198	The five-parameter grain boundary character distribution of nanocrystalline tungsten. *Scripta Materialia*, **2013**, 69, 413-416	5.6	25

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196	Surface engineering along the close-packed direction of SrTiO3. *Journal of Crystal Growth*, **2001**, 225, 178-182	1.6	25
195	Comparison of grain size distributions in a Ni-based superalloy in three and two dimensions using the Saltykov method. *Scripta Materialia*, **2012**, 66, 554-557	5.6	24
194	The Morphological Evolution of the MoO3(010) Surface during Reactions in Methanol/Air Mixtures. *Journal of Catalysis*, **1998**, 180, 270-278	7.3	24
193	The orientation dependence of the photochemical reactivity of BiVO4. *Journal of Materials Chemistry A*, **2015**, 3, 2370-2377	13	23
192	Enhanced Photochemical Reactivity at the Ferroelectric Phase Transition in Ba1−xSrxTiO3. *Journal of the American Ceramic Society*, **2010**, 93, 4129-4134	3.8	23
191	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
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189	Identification of prismatic slip bands in 4H SiC boules grown by physical vapor transport. *Journal of Electronic Materials*, **2000**, 29, L5-L8	1.9	23
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187	Influence of Y and La Additions on Grain Growth and the Grain-Boundary Character Distribution of Alumina. *Journal of the American Ceramic Society*, **2014**, 97, 622-630	3.8	22
186	Modeling the Influence of Orientation Texture on the Strength of WC–Co Composites. *Journal of the American Ceramic Society*, **2007**, 90, 199-204	3.8	22
185	Mesoscale Simulation of the Evolution of the Grain Boundary Character Distribution. *Materials Science Forum*, **2004**, 467-470, 1063-1068	0.4	22
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175	Topological characteristics of plane sections of polycrystals. *Acta Materialia*, **2010**, 58, 3805-3814	8.4	19
174	Experimental Evidence for the Development of Bimodal Grain Size Distributions by the Nucleation-Limited Coarsening Mechanism. *Journal of the American Ceramic Society*, **2007**, 90, 211-216	3.8	19
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171	Competitive Growth of Scrutinyite (□PbO2) and Rutile Polymorphs of SnO2 on All Orientations of Columbite CoNb2O6 Substrates. *Crystal Growth and Design*, **2017**, 17, 3929-3939	3.5	19
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164	Evolution of the Annealing Twin Density during □Supersolvus Grain Growth in the Nickel-Based Superalloy Inconel□718. *Metals*, **2016**, 6, 5	2.3	18
163	The role of ceramic and glass science research in meeting societal challenges: Report from an NSF-sponsored workshop. *Journal of the American Ceramic Society*, **2017**, 100, 1777-1803	3.8	17
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159	Multidomain simulations of coated ferroelectrics exhibiting spatially selective photocatalytic activity with high internal quantum efficiencies. *Journal of Materials Chemistry A*, **2016**, 4, 16085-16093	13	17
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157	The temperature dependence of the relative grain-boundary energy of yttria-doped alumina. *Journal of the American Ceramic Society*, **2017**, 100, 783-791	3.8	16
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155	Electrical Properties of Individual Zinc Oxide Grain Boundaries Determined by Spatially Resolved Tunneling Spectroscopy. *Journal of the American Ceramic Society*, **1990**, 73, 3026-3032	3.8	16
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