

Eric R Homer

List of Publications by Year in descending order

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Version: 2024-02-01

60
papers

1,557
citations

279701

23
h-index

315616

38
g-index

62
all docs

62
docs citations

62
times ranked

1353
citing authors

#	ARTICLE	IF	CITATIONS
1	Determining Grain Boundary Position and Geometry from EBSD Data: Limits of Accuracy. <i>Microscopy and Microanalysis</i> , 2022, 28, 96-108.	0.2	3
2	An experimentally-based molecular dynamics analysis of grain boundary migration during recrystallization in aluminum. <i>Scripta Materialia</i> , 2022, 211, 114489.	2.6	8
3	Aluminum alloy compositions and properties extracted from a corpus of scientific manuscripts and US patents. <i>Scientific Data</i> , 2022, 9, 128.	2.4	12
4	Examination of computed aluminum grain boundary structures and energies that span the 5D space of crystallographic character. <i>Acta Materialia</i> , 2022, 234, 118006.	3.8	19
5	Computationally efficient barycentric interpolation of large grain boundary octonion point sets. <i>MethodsX</i> , 2022, 9, 101731.	0.7	0
6	Phase determination in dual phase steels via HREBSD-based tetragonality mapping. <i>Journal of Microscopy</i> , 2021, 282, 60-72.	0.8	3
7	Coupling kinetic Monte Carlo and finite element methods to model the strain path sensitivity of the isothermal stress-assisted martensite nucleation in TRIP-assisted steels. <i>Mechanics of Materials</i> , 2021, 154, 103707.	1.7	5
8	Grain boundary structure-property model inference using polycrystals: The underdetermined case. <i>Acta Materialia</i> , 2021, 209, 116769.	3.8	4
9	Measuring simulated hydrogen diffusion in symmetric tilt nickel grain boundaries and examining the relevance of the Borsov relationship for individual boundary diffusion. <i>Acta Materialia</i> , 2021, 212, 116882.	3.8	14
10	Inference and uncertainty propagation of GB structure-property models: H diffusivity in [100] tilt GBs in Ni. <i>Acta Materialia</i> , 2021, 215, 116967.	3.8	5
11	The grain boundary stiffness and its impact on equilibrium shapes and boundary migration: Analysis of the ξ boundaries in Ni. <i>Acta Materialia</i> , 2021, 218, 117220.	3.8	16
12	Five degree-of-freedom property interpolation of arbitrary grain boundaries via Voronoi fundamental zone framework. <i>Computational Materials Science</i> , 2021, 200, 110756.	1.4	9
13	Grain boundary structure-property model inference using polycrystals: the overdetermined case. <i>Journal of Materials Science</i> , 2020, 55, 1562-1576.	1.7	4
14	An investigation of geometrically necessary dislocations and back stress in large grained tantalum via EBSD and CPFEM. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2020, 772, 138704.	2.6	30
15	Slip band characteristics in the presence of grain boundaries in nickel-based superalloy. <i>Acta Materialia</i> , 2020, 193, 229-238.	3.8	27
16	Insights into grain boundary energy structure-property relationships by examining computed $\{110\}$ disorientation axis grain boundaries in Nickel. <i>Scripta Materialia</i> , 2020, 185, 165-169.	2.6	3
17	Digital Image Correlation of Forescatter Detector Images for Simultaneous Strain and Orientation Mapping. <i>Microscopy and Microanalysis</i> , 2020, 26, 641-652.	0.2	5
18	Cryogenic Stress-Driven Grain Growth Observed via Microcompression with in situ Electron Backscatter Diffraction. <i>Jom</i> , 2020, 72, 2051-2056.	0.9	11

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19	Shear Transformation Zone Dynamics Modeling of Deformation in Metallic Glasses. , 2020, , 1237-1263.		0
20	Machine-Learning Informed Representations for Grain Boundary Structures. <i>Frontiers in Materials</i> , 2019, 6, .	1.2	22
21	Atomistic survey of grain boundary-dislocation interactions in FCC nickel. <i>Computational Materials Science</i> , 2019, 164, 171-185.	1.4	27
22	High-throughput simulations for insight into grain boundary structure-property relationships and other complex microstructural phenomena. <i>Computational Materials Science</i> , 2019, 161, 244-254.	1.4	13
23	Antithermal mobility in $\hat{\epsilon}7$ and $\hat{\epsilon}9$ grain boundaries caused by stick-slip stagnation of ordered atomic motions about Coincidence Site Lattice atoms. <i>Acta Materialia</i> , 2019, 162, 10-18.	3.8	16
24	Improved twin detection via tracking of individual Kikuchi band intensity of EBSD patterns. <i>Ultramicroscopy</i> , 2018, 185, 5-14.	0.8	6
25	Incorporating the Element of Stochasticity in Coarse-Grained Modeling of Materials Mechanics. , 2018, , 1-14.		0
26	Simulated Microstructural and Compositional Evolution of U-Pu-Zr Alloys Using the Potts-Phase Field Modeling Technique. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2018, 49, 6457-6468.	1.1	5
27	Shear Transformation Zone Dynamics Modeling of Deformation in Metallic Glasses. , 2018, , 1-28.		0
28	Quantifying and connecting atomic and crystallographic grain boundary structure using local environment representation and dimensionality reduction techniques. <i>Acta Materialia</i> , 2018, 161, 431-443.	3.8	26
29	Simulation of kinematic Kikuchi diffraction patterns from atomistic structures. <i>MethodsX</i> , 2018, 5, 1187-1203.	0.7	6
30	Crystallographic Reconstruction of Parent Austenite Twin Boundaries in a Lath Martensitic Steel. <i>IOP Conference Series: Materials Science and Engineering</i> , 2018, 375, 012012.	0.3	5
31	Effect of strain path on forming limits and retained austenite transformation in Q&P 1180 steel. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2018, 734, 192-199.	2.6	7
32	The role of crystallography and the mechanisms associated with migration of incoherent twin grain boundaries. <i>Acta Materialia</i> , 2017, 131, 553-563.	3.8	33
33	An RVE procedure for micromechanical prediction of mechanical behavior of dual-phase steel. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2017, 695, 101-111.	2.6	40
34	Influence of Noise-Generating Factors on Cross-Correlation Electron Backscatter Diffraction (EBSD) Measurement of Geometrically Necessary Dislocations (GNDs). <i>Microscopy and Microanalysis</i> , 2017, 23, 460-471.	0.2	18
35	Variability of non-Schmid effects in grain boundary dislocation nucleation criteria. <i>Acta Materialia</i> , 2017, 124, 588-597.	3.8	24
36	Discovering the building blocks of atomic systems using machine learning: application to grain boundaries. <i>Npj Computational Materials</i> , 2017, 3, .	3.5	80

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37	Boundary migration in a 3D deformed microstructure inside an opaque sample. Scientific Reports, 2017, 7, 4423.	1.6	19
38	Competition between shear band nucleation and propagation across rate-dependent flow transitions in a model metallic glass. Acta Materialia, 2016, 111, 273-282.	3.8	29
39	Kinetic Monte Carlo Modeling of Nanomechanics in Amorphous Systems. Springer Series in Materials Science, 2016, , 441-468.	0.4	1
40	Performance of Dynamically Simulated Reference Patterns for Cross-Correlation Electron Backscatter Diffraction. Microscopy and Microanalysis, 2016, 22, 789-802.	0.2	23
41	Grain Boundary Plane Orientation Fundamental Zones and Structure-Property Relationships. Scientific Reports, 2015, 5, 15476.	1.6	73
42	Analysis of traction-free assumption in high-resolution EBSD measurements. Journal of Microscopy, 2015, 260, 73-85.	0.8	27
43	Investigating the mechanisms of grain boundary migration during recrystallization using molecular dynamics. IOP Conference Series: Materials Science and Engineering, 2015, 89, 012006.	0.3	10
44	Microstructural factors of strain delocalization in model metallic glass matrix composites. Acta Materialia, 2015, 83, 203-215.	3.8	27
45	New Methods for Developing and Manufacturing Compliant Mechanisms Utilizing Bulk Metallic Glass. Advanced Engineering Materials, 2014, 16, 850-856.	1.6	30
46	Examining the initial stages of shear localization in amorphous metals. Acta Materialia, 2014, 63, 44-53.	3.8	62
47	Trends in Grain Boundary Mobility: Survey of Motion Mechanisms. Jom, 2014, 66, 114-120.	0.9	68
48	Estimation of the full Nye's tensor and its gradients by micro-mechanical stereo-inference using EBSD dislocation microscopy. International Journal of Plasticity, 2013, 50, 146-157.	4.1	16
49	Hybrid Potts-phase field model for coupled microstructural-compositional evolution. Computational Materials Science, 2013, 69, 414-423.	1.4	27
50	Phenomenology of shear-coupled grain boundary motion in symmetric tilt and general grain boundaries. Acta Materialia, 2013, 61, 1048-1060.	3.8	99
51	Shear transformation zone dynamics model for metallic glasses incorporating free volume as a state variable. Acta Materialia, 2013, 61, 3347-3359.	3.8	131
52	Coupled microstructural-compositional evolution informed by a thermodynamic database using the hybrid Potts-phase field model. Materials Research Society Symposia Proceedings, 2013, 1524, 1.	0.1	3
53	Comment on "Toward realistic molecular dynamics simulations of grain boundary mobility" by Zhou and Mohles. Scripta Materialia, 2012, 66, 714-716.	2.6	6
54	Three-dimensional shear transformation zone dynamics model for amorphous metals. Modelling and Simulation in Materials Science and Engineering, 2010, 18, 065009.	0.8	33

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55	Nanoscale strength distribution in amorphous versus crystalline metals. Journal of Materials Research, 2010, 25, 2251-2263.	1.2	58
56	Kinetic Monte Carlo study of activated states and correlated shear-transformation-zone activity during the deformation of an amorphous metal. Physical Review B, 2010, 81, .	1.1	61
57	Cyclic hardening of metallic glasses under Hertzian contacts: Experiments and STZ dynamics simulations. Philosophical Magazine, 2010, 90, 1373-1390.	0.7	71
58	Mesoscale modeling of amorphous metals by shear transformation zone dynamics. Acta Materialia, 2009, 57, 2823-2833.	3.8	137
59	Recovery of the grain boundary character distribution through oblique double-sectioning. Scripta Materialia, 2006, 54, 1017-1021.	2.6	13
60	Two-dimensional grain boundary percolation in alloy 304 stainless steel. Scripta Materialia, 2005, 53, 959-963.	2.6	25