Philip Eisenlohr

List of Publications by Year
in descending order

93 papers	6,930 citations	134610 34 h-index	66518 82 g-index

98 all docs	98 docs citations	98 times ranked	4450 citing authors

#	Article	IF	Citations
1	Predicting shear transmission across grain boundaries with an iterative stress relief model. Acta Materialia, 2021, 215, 116992.	3.8	7
2	Heterogeneous Internal Strain Evolution in Commercial Purity Titanium Due to Anisotropic Coefficients of Thermal Expansion. Jom, 2020, 72, 39-47.	0.9	13
3	Assessment of surface and bulk-dominated methodologies to measure critical resolved shear stresses in hexagonal materials. Acta Materialia, 2020, 184, 241-253.	3.8	18
4	Effect of strain rate on tensile mechanical properties of high-purity niobium single crystals for SRF applications. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2020, 797, 140258.	2.6	7
5	Grain boundary slip transfer classification and metric selection with artificial neural networks. Scripta Materialia, 2020, 185, 71-75.	2.6	13
6	Spectral Solvers for Crystal Plasticity and Multi-physics Simulations. , 2019, , 1-25.		0
7	Strain Rate Contribution due to Dynamic Recovery of Ultrafine-Grained Cuâ€“Zr as Evidenced by Load Reductions during Quasi-Stationary Deformation at 0.5 Tm. Metals, 2019, 9, 1150.	1.0	6
8	Quasi-Stationary Strength of ECAP-Processed Cu-Zr at 0.5Tm. Metals, 2019, 9, 1149.	1.0	2
9	Chemo-thermo-mechanically Coupled Crystal Plasticity Simulation of Stress Evolution in Thermally Strained Î²-Sn Films. Journal of Electronic Materials, 2019, 48, 85-91.	1.0	8
10	DAMASK â€“ The DÃ¼sseldorf Advanced Material Simulation Kit for modeling multi-physics crystal plasticity, thermal, and damage phenomena from the single crystal up to the component scale. Computational Materials Science, 2019, 158, 420-478.	1.4	440
11	Spectral Solvers for Crystal Plasticity and Multi-physics Simulations. , 2019, , 1-26.		2
12	Spectral Solvers for Crystal Plasticity and Multi-physics Simulations. , 2019, , 1347-1372.		7
13	Contraction Twinning Dominated Tensile Deformation and Subsequent Fracture in Extruded Mg-1Mn (WtÂPct) at Ambient Temperature. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2018, 49, 2441-2454.	1.1	21
14	Comparison of dislocation content measured with transmission electron microscopy and micro-Laue diffraction based streak analysis. Scripta Materialia, 2018, 144, 74-77.	2.6	5
15	Fourier-based spectral method solution to finite strain crystal plasticity with free surfaces. Scripta Materialia, 2018, 145, 37-40.	2.6	30
16	Spectral Solvers for Crystal Plasticity and Multi-physics Simulations. , 2018, , 1-27.		5
17	Spectral Solvers for Crystal Plasticity and Multi-physics Simulations. , 2018, , 1-25.		1
18	Exploring the accuracy limits of lattice strain quantification with synthetic diffraction data. Scripta Materialia, 2018, 154, 127-130.	2.6	2

#	Article	IF	Citations
19	ECCI based characterization of dislocation shear in polycrystalline arrays during heterogeneous deformation of commercially pure titanium. Materials Characterization, 2018, 142, 504-514.	1.9	21
20	A full-field crystal plasticity study on how texture and grain structure influences hydrostatic stress in thermally strained Î²-Sn films. Journal of Applied Physics, 2018, 124, .	1.1	8
21	Atom Probe Tomography and Correlative Microscopy: 3D Nanoscale Characterization of Metals, Minerals and Materials. Jom, 2018, 70, 1723-1724.	0.9	0
22	Deformation Strength of Nanocrystalline Thin Films. Journal of Materials Science and Technology, 2017, 33, 718-722.	5.6	5
23	A Flexible and Efficient Output File Format for Grain-Scale Multiphysics Simulations. Integrating Materials and Manufacturing Innovation, 2017, 6, 83-91.	1.2	5
24	In situ study of thermally activated flow and dynamic restoration of ultrafine-grained pure Cu at 373 K. Journal of Materials Research, 2017, 32, 4514-4521.	1.2	0
25	Dynamic restoration of severely predeformed, ultrafine-grained pure Cu at 373 K observed in situ. Materials Characterization, 2017, 134, 329-334.	1.9	5
26	Subsurface Grain Morphology Reconstruction by Differential Aperture X-ray Microscopy. Jom, 2017, 69, 1100-1105.	0.9	2
27	Evaluation of an inverse methodology for estimating constitutive parameters in face-centered cubic materials from single crystal indentations. European Journal of Mechanics, A/Solids, 2017, 66, 114-124.	2.1	38
28	Identification of whisker grain in Sn coatings by analyzing crystallographic micro-texture using electron back-scatter diffraction. Acta Materialia, 2017, 134, 346-359.	3.8	33
29	Thermally activated flow in soft and hard regions: Getting information on work hardening strain and recovery strain from rate change tests. Metallic Materials, 2016, 53, 199-205.	0.2	2
30	From insect scales to sensor design: modelling the mechanochromic properties of bicontinuous cubic structures. Bioinspiration and Biomimetics, 2016, 11, 045001.	1.5	8
31	Neighborhood influences on stress and strain partitioning in dual-phase microstructures. Meccanica, 2016, 51, 429-441.	1.2	45
32	Quantifying deformation processes near grain boundaries in Î± titanium using nanoindentation and crystal plasticity modeling. International Journal of Plasticity, 2016, 86, 170-186.	4.1	53
33	Effects of Grain Refinement by ECAP on the Deformation Resistance of Al Interpreted in Terms of Boundary-Mediated Processes. Journal of Materials Science and Technology, 2016, 32, 1309-1320.	5.6	20
34	Interpretation of unloading tests on nanocrystalline Cu in terms of two mechanisms of deformation. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2016, 665, 171-174.	2.6	4
35	Crystal plasticity study of monocrystalline stochastic honeycombs under in-plane compression. Acta Materialia, 2016, 103, 796-808.	3.8	15
36	Synergy of atom-probe structural data and quantum-mechanical calculations in a theory-guided design of extreme-stiffness superlattices containing metastable phases. New Journal of Physics, 2015, 17, 093004.	1.2	15

#	Article	IF	Citations
37	Multiscale deep drawing analysis of dual-phase steels using grain cluster-based RGC scheme. Modelling and Simulation in Materials Science and Engineering, 2015, 23, 045005.	0.8	22
38	Effect of realistic 3D microstructure in crystal plasticity finite element analysis of polycrystalline Ti-5Al-2.5Sn. International Journal of Plasticity, 2015, 69, 21-35.	4.1	84
39	In situstudy of microstructure and strength of severely predeformed pure Cu in deformation at 573ÂK. Philosophical Magazine, 2015, 95, 3696-3711.	0.7	14
40	Correct Interpretation of Creep Rates: A Case Study of Cu. Journal of Materials Science and Technology, 2015, 31, 1065-1068.	5.6	7
41	Analytical bounds of in-plane Youngâ€™s modulus and full-field simulations of two-dimensional monocrystalline stochastic honeycomb structures. Computational Materials Science, 2015, 109, 323-329.	1.4	4
42	Numerically robust spectral methods for crystal plasticity simulations of heterogeneous materials. International Journal of Plasticity, 2015, 66, 31-45.	4.1	159
43	Grain Boundary Responses to Heterogeneous Deformation in Tantalum Polycrystals. Jom, 2014, 66, 121-128.	0.9	17
44	What is â€œstationaryâ€•deformation of pure Cu?. Journal of Materials Science, 2014, 49, 2987-2997.	1.7	12
45	Effect of grain refinement by ECAP on creep of pure Cu. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2014, 590, 423-432.	2.6	35
46	Grain boundaries and interfaces in slip transfer. Current Opinion in Solid State and Materials Science, 2014, 18, 212-226.	5.6	237
47	Dislocation density distribution around an indent in single-crystalline nickel: Comparing nonlocal crystal plasticity finite-element predictions with experiments. Acta Materialia, 2014, 71, 333-348.	3.8	103
48	Simulation of shear banding in heterophase co-deformation: Example of plane strain compressed Cuâ€“Ag and Cuâ€“Nb metal matrix composites. Acta Materialia, 2013, 61, 4591-4606.	3.8	68
49	Study of $$ { 11ar{2} 1} $$ Twinning in Î±-Ti by EBSD and Laue Microdiffraction. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2013, 44, 3664-3674.	1.1	52
50	Revealing the strain-hardening behavior of twinning-induced plasticity steels: Theory, simulations, experiments. Acta Materialia, 2013, 61, 494-510.	3.8	429
51	A spectral method solution to crystal elasto-viscoplasticity at finite strains. International Journal of Plasticity, 2013, 46, 37-53.	4.1	332
52	Simulation of dislocation penetration through a general low-angle grain boundary. Acta Materialia, 2012, 60, 5380-5390.	3.8	79
53	Non-crystallographic shear banding in crystal plasticity FEM simulations: Example of texture evolution in Î±-brass. Acta Materialia, 2012, 60, 1099-1115.	3.8	87
54	On the importance of a connected hard-phase skeleton for the creep resistance of Mg alloys. Acta Materialia, 2012, 60, 2277-2289.	3.8	89

#	Article	IF	Citations
55	Orientation dependence of shear banding in face-centered-cubic single crystals. Acta Materialia, 2012, 60, 3415-3434.	3.8	129
56	An elasto-viscoplastic formulation based on fast Fourier transforms for the prediction of micromechanical fields in polycrystalline materials. International Journal of Plasticity, 2012, 32-33, 59-69.	4.1	438
57	DAMASK: the DÃ¼sseldorf Advanced MAterial Simulation Kit for studying crystal plasticity using an FE based or a spectral numerical solver. Procedia IUTAM, 2012, 3, 3-10.	1.2	159
58	A dislocation density-based crystal plasticity constitutive model for prismatic slip in Î±-titanium. Acta Materialia, 2011, 59, 7003-7009.	3.8	65
59	Dislocation interactions and low-angle grain boundary strengthening. Acta Materialia, 2011, 59, 7125-7134.	3.8	84
60	Experimental Characterization and Crystal Plasticity Modeling of Heterogeneous Deformation in Polycrystalline Î±-Ti. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2011, 42, 626-635.	1.1	121
61	Quantitative Atomic Force Microscopy Characterization and Crystal Plasticity Finite Element Modeling of Heterogeneous Deformation in Commercial Purity Titanium. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2011, 42, 636-644.	1.1	54
62	Characterization and modeling of heterogeneous deformation in commercial purity titanium. Jom, 2011, 63, 66-73.	0.9	35
63	Control of dynamic recovery and strength by subgrain boundaries â€“ insights from stress-change tests on CaF2single crystals. Philosophical Magazine, 2011, 91, 908-931.	0.7	7
64	Influence of microstructure on creep strength of MRI 230D Mg alloy. Journal of Physics: Conference Series, 2010, 240, 012068.	0.3	7
65	A simple dislocation model of the influence of high-angle boundaries on the deformation behavior of ultrafine-grained materials. Journal of Physics: Conference Series, 2010, 240, 012136.	0.3	6
66	Overview of constitutive laws, kinematics, homogenization and multiscale methods in crystal plasticity finite-element modeling: Theory, experiments, applications. Acta Materialia, 2010, 58, 1152-1211.	3.8	1,558
67	Twin Nucleation by Slip Transfer across Grain Boundaries in Commercial Purity Titanium. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2010, 41, 421-430.	1.1	235
68	Nucleation of paired twins at grain boundaries in titanium. Scripta Materialia, 2010, 63, 827-830.	2.6	157
69	Comparison of finite element and fast Fourier transform crystal plasticity solvers for texture prediction. Modelling and Simulation in Materials Science and Engineering, 2010, 18, 085005.	0.8	81
70	A novel grain cluster-based homogenization scheme. Modelling and Simulation in Materials Science and Engineering, 2010, 18, 015006.	0.8	32
71	Comparison of texture evolution in fcc metals predicted by various grain cluster homogenization schemes. International Journal of Materials Research, 2009, 100, 500-509.	0.1	24
72	Microstructural evolution during creep of Ca-containing AZ91. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2009, 510-511, 398-402.	2.6	63

#	Article	IF	Citations
73	Strain heterogeneity and damage nucleation at grain boundaries during monotonic deformation in commercial purity titanium. Jom, 2009, 61, 45-52.	0.9	116
74	Texture prediction from a novel grain cluster-based homogenization scheme. International Journal of Material Forming, 2009, 2, 523-526.	0.9	5
75	Relaxed grain cluster (RGC) homogenization scheme. International Journal of Material Forming, 2009, 2, 939-942.	0.9	5
76	Dislocation glide velocity in creep of Mg alloys derived from dip tests. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2009, 510-511, 393-397.	2.6	9
77	Evolution of dislocation structure and deformation resistance in creep exemplified on single crystals of CaF2. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2009, 510-511, 46-50.	2.6	13
78	New observations on high-temperature creep at very low stresses. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2009, 510-511, 20-24.	2.6	14
79	Dislocation mechanics of creep. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2009, 510-511, 7-13.	2.6	89
80	The role of heterogeneous deformation on damage nucleation at grain boundaries in single phase metals. International Journal of Plasticity, 2009, 25, 1655-1683.	4.1	304
81	Quantifying the distributions of dislocation spacings and cell sizes. Journal of Materials Science, 2008, 43, 2700-2707.	1.7	7
82	Modelling the transition from strengthening to softening due to grain boundaries. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2008, 483-484, 95-98.	2.6	4
83	Selecting a set of discrete orientations for accurate texture reconstruction. Computational Materials Science, 2008, 42, 670-678.	1.4	57
84	On Predicting Nucleation of Microcracks Due to Slip-Twin Interactions at Grain Boundaries in Duplex Near Î³-TiAl. Journal of Engineering Materials and Technology, Transactions of the ASME, 2008, 130, .	0.8	21
85	Iso-Work-Rate Weighted-Taylor Homogenization Scheme for Multiphase Steels Assisted by Transformation-induced Plasticity Effect. Steel Research International, 2007, 78, 777-783.	1.0	9
86	Bridging steady-state deformation behavior at low and high temperature by considering dislocation dipole annihilation. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2005, 400-401, 175-181.	2.6	12
87	Strain-rate sensitivity of ultrafine-grained materials. International Journal of Materials Research, 2005, 96, 566-571.	0.8	65
88	Migration of subgrain boundaries under stress in bi- and multi-granular structures. Physica Status Solidi A, 2003, 200, 339-345.	1.7	3
89	Understanding creepâ€"a review. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2002, 33, 291-303.	1.1	122
90	Harper-dorn creep and specimen size. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2002, 33, 305-310.	1.1	15

#	Article	IF	Citations
91	Structure Evolution and Deformation Resistance in Production and Application of Ultrafine-Grained Materials â€“ the Concept of Steady-State Grains. Materials Science Forum, 0, 683, 163-181.	0.3	5
92	Slip System Analysis in the Cold Rolling of a Ni₃Al Single Crystal. Materials Science Forum, 0, 783-786, 1111-1116.	0.3	1
93	Quantifying the Uncertainty of Critical Resolved Shear Stress Values Derived from Nano-Indentation in Hexagonal Ti Alloys. Experimental Mechanics, 0, , 1.	1.1	5