Martin Diehl

List of Publications by Year
in descending order

44 papers	3,515 citations	331670 21 h-index	315739 38 g-index
46 all docs	46 docs citations	46 times ranked	2149 citing authors

#	Article	IF	Citations
1	An Overview of Dual-Phase Steels: Advances in Microstructure-Oriented Processing and Micromechanically Guided Design. Annual Review of Materials Research, 2015, 45, 391-431.	9.3	469
2	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.	3.0	440
3	Strain localization and damage in dual phase steels investigated by coupled in-situ deformation experiments and crystal plasticity simulations. International Journal of Plasticity, 2014, 63, 198-210.	8.8	412
4	A spectral method solution to crystal elasto-viscoplasticity at finite strains. International Journal of Plasticity, 2013, 46, 37-53.	8.8	332
5	Integrated experimentalâ€“simulation analysis of stress and strain partitioning in multiphase alloys. Acta Materialia, 2014, 81, 386-400.	7.9	285
6	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
7	Numerically robust spectral methods for crystal plasticity simulations of heterogeneous materials. International Journal of Plasticity, 2015, 66, 31-45.	8.8	159
8	A virtual laboratory using high resolution crystal plasticity simulations to determine the initial yield surface for sheet metal forming operations. International Journal of Plasticity, 2016, 80, 111-138.	8.8	147
9	Unraveling the temperature dependence of the yield strength in single-crystal tungsten using atomistically-informed crystal plasticity calculations. International Journal of Plasticity, 2016, 78, 242-265.	8.8	137
10	An integrated crystal plasticityâ€“phase field model for spatially resolved twin nucleation, propagation, and growth in hexagonal materials. International Journal of Plasticity, 2018, 106, 203-227.	8.8	125
11	Current Challenges and Opportunities in Microstructure-Related Properties of Advanced High-Strength Steels. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2020, 51, 5517-5586.	2.2	115
12	In situ observation of collective grain-scale mechanics in Mg and Mgâ€“rare earth alloys. Acta Materialia, 2014, 80, 77-93.	7.9	91
13	On the interaction of precipitates and tensile twins in magnesium alloys. Acta Materialia, 2019, 178, 146-162.	7.9	80
14	Identifying Structureâ€“Property Relationships Through DREAM.3D Representative Volume Elements and DAMASK Crystal Plasticity Simulations: An Integrated Computational Materials Engineering Approach. Jom, 2017, 69, 848-855.	1.9	71
15	An efficient and robust approach to determine material parameters of crystal plasticity constitutive laws from macro-scale stressâ€“strain curves. International Journal of Plasticity, 2020, 134, 102779.	8.8	66
16	Crystal plasticity study on stress and strain partitioning in a measured 3D dual phase steel microstructure. Physical Mesomechanics, 2017, 20, 311-323.	1.9	58
17	Coupled Crystal Plasticityâ€“Phase Field Fracture Simulation Study on Damage Evolution Around a Void: Pore Shape Versus Crystallographic Orientation. Jom, 2017, 69, 872-878.	1.9	46
18	Neighborhood influences on stress and strain partitioning in dual-phase microstructures. Meccanica, 2016, 51, 429-441.	2.0	45

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19	Using spectral-based representative volume element crystal plasticity simulations to predict yield surface evolution during large scale forming simulations. Journal of Materials Processing Technology, 2020, 277, 116449.	6.3	28
20	Determination and analysis of the constitutive parameters of temperature-dependent dislocation-density-based crystal plasticity models. Mechanics of Materials, 2022, 164, 104117.	3.2	24
21	Predicting grain boundary damage by machine learning. International Journal of Plasticity, 2022, 150, 103186.	8.8	21
22	Review and outlook: mechanical, thermodynamic, and kinetic continuum modeling of metallic materials at the grain scale. MRS Communications, 2017, 7, 735-746.	1.8	16
23	Large-deformation crystal plasticity simulation of microstructure and microtexture evolution through adaptive remeshing. International Journal of Plasticity, 2021, 146, 103078.	8.8	16
24	Quantifying the Contribution of Crystallographic Texture and Grain Morphology on the Elastic and Plastic Anisotropy of bcc Steel. Metals, 2019, 9, 1252.	2.3	16
25	Crystal plasticity study of monocrystalline stochastic honeycombs under in-plane compression. Acta Materialia, 2016, 103, 796-808.	7.9	15
26	Numerical Benchmark of Phase-Field Simulations with Elastic Strains: Precipitation in the Presence of Chemo-Mechanical Coupling. Computational Materials Science, 2018, 155, 541-553.	3.0	15
27	Crystal plasticity simulation of in-grain microstructural evolution during large deformation of IF-steel. Acta Materialia, 2022, 237, 118167.	7.9	15
28	Site-specific quasi in situ investigation of primary static recrystallization in a low carbon steel. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2019, 755, 295-306.	5.6	14
29	Linking atomistic, kinetic Monte Carlo and crystal plasticity simulations of singleâ€crystal tungsten strength. GAMM Mitteilungen, 2015, 38, 213-227.	5.5	13
30	Lath Martensite Microstructure Modeling: A High-Resolution Crystal Plasticity Simulation Study. Materials, 2021, 14, 691.	2.9	13
31	On the role of the collinear dislocation interaction in deformation patterning and laminate formation in single crystal plasticity. Mechanics of Materials, 2018, 125, 70-79.	3.2	12
32	Solving Material Mechanics and Multiphysics Problems of Metals with Complex Microstructures Using DAMASKâ€"The DÃ¼sseldorf Advanced Material Simulation Kit. Advanced Engineering Materials, 2020, 22, 1901044.	3.5	11
33	Modeling and simulation of microstructure in metallic systems based on multi-physics approaches. Npj Computational Materials, 2022, 8, .	8.7	10
34	Spectral Solvers for Crystal Plasticity and Multi-physics Simulations. , 2019, , 1347-1372.		7
35	Coupling crystal plasticity and cellular automaton models to study meta-dynamic recrystallization during hot rolling at high strain rates. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2022, 849, 143471.	5.6	7
36	A Flexible and Efficient Output File Format for Grain-Scale Multiphysics Simulations. Integrating Materials and Manufacturing Innovation, 2017, 6, 83-91.	2.6	5

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37	Spectral Solvers for Crystal Plasticity and Multi-physics Simulations. , 2018, , 1-27.		5
38	Coupled experimental-computational analysis of primary static recrystallization in low carbon steel. Modelling and Simulation in Materials Science and Engineering, 2020, 28, 014001.	2.0	5
39	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.	3.0	4
40	The through-process texture analysis of plate rolling by coupling finite element and fast Fourier transform crystal plasticity analysis. Modelling and Simulation in Materials Science and Engineering, 2019, 27, 085005.	2.0	3
41	Spectral Solvers for Crystal Plasticity and Multi-physics Simulations. , 2019, , 1-26.		2
42	Spectral Solvers for Crystal Plasticity and Multi-physics Simulations. , 2018, , 1-25.		1
43	Spectral Solvers for Crystal Plasticity and Multi-physics Simulations. , 2019, , 1-25.		0
44	Characterizing Localized Microstructural Deformation of Multiphase Steel by Crystal Plasticity Simulation with Multi-Constitutive Law. Journal of the Japan Society for Technology of Plasticity, 2022, 63, 1-8.	0.3	0