Pratheek Shanthraj

List of Publications by Year
in descending order

53 papers	2,440 citations	304602 22 h-index	214721 47 g-index
57 all docs	57 docs citations	57 times ranked	1750 citing authors

#	Article	IF	Citations
1	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
2	Integrated experimentalâ€“simulation analysis of stress and strain partitioning in multiphase alloys. Acta Materialia, 2014, 81, 386-400.	3.8	285
3	Strengthening and strain hardening mechanisms in a precipitation-hardened high-Mn lightweight steel. Acta Materialia, 2017, 140, 258-273.	3.8	179
4	Numerically robust spectral methods for crystal plasticity simulations of heterogeneous materials. International Journal of Plasticity, 2015, 66, 31-45.	4.1	159
5	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.	4.1	125
6	Unveiling the Re effect in Ni-based single crystal superalloys. Nature Communications, 2020, 11, 389.	5.8	101
7	Dislocation density evolution and interactions in crystalline materials. Acta Materialia, 2011, 59, 7695-7702.	3.8	100
8	Elasto-viscoplastic phase field modelling of anisotropic cleavage fracture. Journal of the Mechanics and Physics of Solids, 2017, 99, 19-34.	2.3	94
9	On the interaction of precipitates and tensile twins in magnesium alloys. Acta Materialia, 2019, 178, 146-162.	3.8	80
10	A phase field model for damage in elasto-viscoplastic materials. Computer Methods in Applied Mechanics and Engineering, 2016, 312, 167-185.	3.4	79
11	Crystal plasticity study on stress and strain partitioning in a measured 3D dual phase steel microstructure. Physical Mesomechanics, 2017, 20, 311-323.	1.0	58
12	Dislocation-density mechanisms for void interactions in crystalline materials. International Journal of Plasticity, 2012, 34, 154-163.	4.1	57
13	Atomistic phase field chemomechanical modeling of dislocation-solute-precipitate interaction in Niâ€“Alâ€“Co. Acta Materialia, 2019, 175, 250-261.	3.8	51
14	Multiscale analysis of grain boundary microstructure in high strength 7xxx Al alloys. Acta Materialia, 2021, 202, 190-210.	3.8	47
15	Coupled Crystal Plasticityâ€“Phase Field Fracture Simulation Study on Damage Evolution Around a Void: Pore Shape Versus Crystallographic Orientation. Jom, 2017, 69, 872-878.	0.9	46
16	Neighborhood influences on stress and strain partitioning in dual-phase microstructures. Meccanica, 2016, 51, 429-441.	1.2	45
17	Microstructurally induced fracture nucleation and propagation in martensitic steels. Journal of the Mechanics and Physics of Solids, 2013, 61, 1091-1105.	2.3	42
18	Finite-deformation phase-field chemomechanics for multiphase, multicomponent solids. Journal of the Mechanics and Physics of Solids, 2018, 112, 619-636.	2.3	38

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19	Particle-induced damage in Feâ€“TiB2 high stiffness metal matrix composite steels. Materials and Design, 2018, 160, 557-571.	3.3	37
20	Understanding the mechanisms of electroplasticity from a crystal plasticity perspective. Modelling and Simulation in Materials Science and Engineering, 2019, 27, 085006.	0.8	37
21	CALPHAD-informed phase-field modeling of grain boundary microchemistry and precipitation in Al-Zn-Mg-Cu alloys. Acta Materialia, 2021, 214, 116966.	3.8	30
22	FFT-based interface decohesion modelling by a nonlocal interphase. Advanced Modeling and Simulation in Engineering Sciences, 2018, 5, .	0.7	24
23	The hidden structure dependence of the chemical life of dislocations. Science Advances, 2021, 7, .	4.7	24
24	Multiscale Modelling of Hydrogen Transport and Segregation in Polycrystalline Steels. Metals, 2018, 8, 430.	1.0	21
25	An FFT-based spectral solver for interface decohesion modelling using a gradient damage approach. Computational Mechanics, 2020, 65, 925-939.	2.2	17
26	Modelling dynamic precipitation in pre-aged aluminium alloys under warm forming conditions. Acta Materialia, 2022, 234, 118036.	3.8	17
27	Electrothermomechanical Finite-Element Modeling of Metal Microcontacts in MEMS. Journal of Microelectromechanical Systems, 2011, 20, 371-382.	1.7	15
28	Crystal plasticity study of monocrystalline stochastic honeycombs under in-plane compression. Acta Materialia, 2016, 103, 796-808.	3.8	15
29	Numerical Benchmark of Phase-Field Simulations with Elastic Strains: Precipitation in the Presence of Chemo-Mechanical Coupling. Computational Materials Science, 2018, 155, 541-553.	1.4	15
30	CALPHAD-informed phase-field model for two-sublattice phases based on chemical potentials: <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si1.svg"><mml:mi>Î·</mml:mi></mml:math>-phase precipitation in Al-Zn-Mg-Cu alloys. Acta Materialia, 2022, 226, 117602.	3.8	14
31	Optimal microstructures for martensitic steels. Journal of Materials Research, 2012, 27, 1598-1611.	1.2	13
32	Linking atomistic, kinetic Monte Carlo and crystal plasticity simulations of singleâ€crystal tungsten strength. GAMM Mitteilungen, 2015, 38, 213-227.	2.7	13
33	Brittle to quasi-brittle transition and crack initiation precursors in crystals with structural Inhomogeneities. Materials Theory, 2019, 3, .	2.2	12
34	Multi-component chemo-mechanics based on transport relations for the chemical potential. Computer Methods in Applied Mechanics and Engineering, 2020, 365, 113029.	3.4	12
35	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.	1.6	11
36	Modeling the heterogeneous effects of retained austenite on the behavior of martensitic high strength steels. International Journal of Fracture, 2013, 184, 241-252.	1.1	10

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37	The effects of microstructure and morphology on fracture nucleation and propagation in martensitic steel alloys. Mechanics of Materials, 2013, 58, 110-122.	1.7	10
38	Phase-Field Modeling of Chemoelastic Binodal/Spinodal Relations and Solute Segregation to Defects in Binary Alloys. Materials, 2021, 14, 1787.	1.3	10
39	Modeling and simulation of microstructure in metallic systems based on multi-physics approaches. Npj Computational Materials, 2022, 8, .	3.5	10
40	Microstructural Modeling of Failure Modes in Martensitic Steel Alloys. Materials Research Society Symposia Proceedings, 2011, 1296, 1.	0.1	8
41	Spectral Solvers for Crystal Plasticity and Multi-physics Simulations. , 2019, , 1347-1372.		7
42	A Flexible and Efficient Output File Format for Grain-Scale Multiphysics Simulations. Integrating Materials and Manufacturing Innovation, 2017, 6, 83-91.	1.2	5
43	Spectral Solvers for Crystal Plasticity and Multi-physics Simulations. , 2018, , 1-27.		5
44	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
45	The evolution of abnormally coarse grain structures in beta-annealed Ti-6Al%-4V% rolled plates, observed by in-situ investigation. Acta Materialia, 2021, 221, 117362.	3.8	3
46	A novel method for radial hydride analysis in zirconium alloys: HAPPy. Journal of Nuclear Materials, 2022, 559, 153442.	1.3	3
47	Simulating intergranular hydrogen enhanced decohesion in aluminium using density functional theory. Modelling and Simulation in Materials Science and Engineering, 2022, 30, 035009.	0.8	3
48	Subsurface Grain Morphology Reconstruction by Differential Aperture X-ray Microscopy. Jom, 2017, 69, 1100-1105.	0.9	2
49	Spectral Solvers for Crystal Plasticity and Multi-physics Simulations. , 2019, , 1-26.		2
50	Spectral Solvers for Crystal Plasticity and Multi-physics Simulations. , 2018, , 1-25.		1
51	Spectral Solvers for Crystal Plasticity and Multi-physics Simulations. , 2019, , 1-25.		0
52	Microstructural Behavior and Fracture in Crystalline Materials: Overview. , 2015, , 419-452.		0
53	Microstructural Behavior and Fracture in Crystalline Materials: Overview. , 2022, , 1301-1333.		0