Veera Sundararaghavan

List of Publications by Year
in descending order

94 papers	2,310 citations	172457 29 h-index	254184 43 g-index
98 all docs	98 docs citations	98 times ranked	1630 citing authors

#	Article	IF	Citations
1	Estimation of micro-Hall-Petch coefficients for prismatic slip system in Mg-4Al as a function of grain boundary parameters. Acta Materialia, 2022, 226, 117613.	7.9	16
2	Fiber Path Optimization of a Composite Lamina Based on Non-uniform Rational B-Spline Surface. , 2022, , .		0
3	Higher-Order Approximations for Stabilizing Zero-Energy Modes in Peridynamics Crystal Plasticity Models with Large Horizon Interactions. , 2022, , .		1
4	Large-Scale Synthesis of Metal Additively-Manufactured Microstructures Using Markov Random Fields. Computational Materials Science, 2022, 206, 111228.	3.0	4
5	Deformation twinning and detwinning in extruded Mg-4Al: In-situ experiment and crystal plasticity simulation. International Journal of Plasticity, 2022, 155, 103345.	8.8	26
6	A graph-theoretic approach for multiscale modeling and prediction of crack propagation in polycrystalline materials. Engineering Fracture Mechanics, 2021, 241, 107406.	4.3	8
7	The effects of heat treatment on the response of WE43 Mg alloy: crystal plasticity finite element simulation and SEM-DIC experiment. International Journal of Plasticity, 2021, 137, 102917.	8.8	56
8	PRISMS-Fatigue computational framework for fatigue analysis in polycrystalline metals and alloys. Npj Computational Materials, 2021, 7, .	8.7	34
9	Crystal Plasticity Simulation of Magnesium and Its Alloys: A Review of Recent Advances. Crystals, 2021, 11, 435.	2.2	22
10	Three-dimensional crystal plasticity simulations using peridynamics theory and experimental comparison. International Journal of Plasticity, 2021, 142, 102991.	8.8	27
11	Constrained Voronoi models for interpreting surface microstructural measurements. Mechanics of Materials, 2021, 159, 103892.	3.2	7
12	Crystal Plasticity Finite Element Modeling of Extension Twinning in WE43 Mg Alloys: Calibration and Validation. Integrating Materials and Manufacturing Innovation, 2021, 10, 488-507.	2.6	16
13	Understanding defect structures in nanoscale metal additive manufacturing via molecular dynamics. Computational Materials Science, 2021, 200, 110807.	3.0	14
14	Graph Coloring Approach to Mesh Generation in Multiphase Media with Smooth Boundaries. AIAA Journal, 2020, 58, 198-205.	2.6	3
15	Polycrystalline Microstructure Reconstruction Using Markov Random Fields and Histogram Matching. CAD Computer Aided Design, 2020, 120, 102806.	2.7	23
16	Multiscale modeling of twinning and detwinning behavior of HCP polycrystals. International Journal of Plasticity, 2020, 127, 102653.	8.8	44
17	Characterizing microscale deformation mechanisms and macroscopic tensile properties of a high strength magnesium rare-earth alloy: A combined experimental and crystal plasticity approach. Acta Materialia, 2020, 186, 77-94.	7.9	67
18	Quantitative study of the effect of grain boundary parameters on the slip system level Hall-Petch slope for basal slip system in Mg-4Al. Acta Materialia, 2020, 200, 148-161.	7.9	44

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19	Modeling self-healing behavior of vitrimers using molecular dynamics with dynamic cross-linking capability. Chemical Physics Letters, 2020, 760, 137966.	2.6	10
20	Database development and exploration of process–microstructure relationships using variational autoencoders. Materials Today Communications, 2020, 25, 101201.	1.9	10
21	A quantitative study of stress fields ahead of a slip band blocked by a grain boundary in unalloyed magnesium. Scientific Reports, 2020, 10, 3084.	3.3	20
22	PRISMS-Plasticity: An open-source crystal plasticity finite element software. Computational Materials Science, 2019, 169, 109078.	3.0	86
23	Box algorithm for the solution of differential equations on a quantum annealer. Physical Review A, 2019, 99, .	2.5	14
24	Do Epistemic Uncertainties Allow for Replacing Microstructural Experiments with Reconstruction Algorithms?. AIAA Journal, 2019, 57, 1078-1091.	2.6	11
25	Using synchrotron radiation to improve understanding of deformation of polycrystalline metals by measuring, modelling and publishing 4D information. IOP Conference Series: Materials Science and Engineering, 2019, 580, 012017.	0.6	15
26	Stability and strain-driven evolution of β' precipitate in Mg-Y alloys. Acta Materialia, 2019, 166, 148-157.	7.9	62
27	Stochastic Design Optimization of Microstructural Features Using Linear Programming for Robust Design. AIAA Journal, 2019, 57, 448-455.	2.6	17
28	Microstructure optimization with constrained design objectives using machine learning-based feedback-aware data-generation. Computational Materials Science, 2019, 160, 334-351.	3.0	41
29	Data Sampling Schemes for Microstructure Design with Vibrational Tuning Constraints. AIAA Journal, 2018, 56, 1239-1250.	2.6	9
30	Thermal conductivity of pillared graphene-epoxy nanocomposites using molecular dynamics. Applied Physics Letters, 2018, 112, 151902.	3.3	18
31	Failure predictions of DP600 steel sheets using various uncoupled fracture criteria. Engineering Fracture Mechanics, 2018, 190, 367-381.	4.3	36
32	A grain boundary interaction model for microstructurally short fatigue cracks. International Journal of Fatigue, 2018, 113, 401-406.	5.7	15
33	Simulation of micro-scale shear bands using peridynamics with an adaptive dynamic relaxation method. International Journal of Solids and Structures, 2018, 130-131, 36-48.	2.7	31
34	Experimental and Numerical Investigations into the Failure Mechanisms of TRIP700 Steel Sheets. Metals, 2018, 8, 1073.	2.3	6
35	Reduced-Order Modeling Approach for Materials Design with a Sequence of Processes. AIAA Journal, 2018, 56, 5041-5044.	2.6	4
36	Graphyne Nanotubes: Materials with Ultralow Phonon Mean Free Path and Strong Optical Phonon Scattering for Thermoelectric Applications. Journal of Physical Chemistry C, 2018, 122, 22688-22698.	3.1	12

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37	PRISMS: An Integrated, Open-Source Framework for Accelerating Predictive Structural Materials Science. Jom, 2018, 70, 2298-2314.	1.9	30
38	Multiscale Optimization of Nanocomposites with Probabilistic Feature Descriptors. AIAA Journal, 2018, 56, 2936-2941.	2.6	4
39	Computational modeling of crystallographic texture evolution over cubochoric space. Modelling and Simulation in Materials Science and Engineering, 2018, 26, 065012.	2.0	2
40	Stress-point method for stabilizing zero-energy modes in non-ordinary state-based peridynamics. International Journal of Solids and Structures, 2018, 150, 197-207.	2.7	55
41	A Crystal Plasticity Model for Dynamic Recrystallization in Ti-6Al-4V Alloy. , 2018, , .		0
42	Fiber Path Optimization of Symmetric Laminates with Cutouts for Thermal Buckling. Journal of Aircraft, 2017, 54, 54-61.	2.4	5
43	Simulation of magnetostrictive properties of Galfenol under thermomechanical deformation. Finite Elements in Analysis and Design, 2017, 127, 1-5.	3.2	11
44	Micromechanical modeling of fatigue behavior of DP steels. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2017, 689, 89-95.	5.6	30
45	MicroFract: An image based code for microstructural crack path prediction. SoftwareX, 2017, 6, 94-97.	2.6	8
46	Dislocation theory-based cohesive model for microstructurally short fatigue crack growth. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2017, 708, 395-404.	5.6	7
47	A method to predict fatigue crack initiation in metals using dislocation dynamics. Corrosion Reviews, 2017, 35, 325-341.	2.0	9
48	Stochastic Design Optimization of Microstructures with Utilization of a Linear Solver. AIAA Journal, 2017, 55, 3161-3168.	2.6	26
49	Molecular dynamics study of phonon transport in graphyne nanotubes. Carbon, 2017, 123, 635-644.	10.3	22
50	Uncertainty Quantification of Microstructural Properties due to Experimental Variations. AIAA Journal, 2017, 55, 2824-2832.	2.6	32
51	Finite element code development for modeling detonation of HMX composites. AIP Conference Proceedings, 2017, , .	0.4	0
52	Uncertainty quantification of microstructural properties due to variability in measured pole figures. Acta Materialia, 2017, 124, 100-108.	7.9	36
53	Low Cycle Fatigue Behaviour of DP Steels: Micromechanical Modelling vs. Validation. Metals, 2017, 7, 265.	2.3	8
54	Crystal Plasticity Modeling and Experimental Validation with an Orientation Distribution Function for Ti-7Al Alloy. Metals, 2017, 7, 459.	2.3	30

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55	A Hybrid Multi-Scale Model of Crystal Plasticity for Handling Stress Concentrations. Metals, 2017, 7, 345.	2.3	2
56	Modeling Crack Propagation in Polycrystalline Microstructure Using Variational Multiscale Method. Mathematical Problems in Engineering, 2016, 2016, 1-14.	1.1	2
57	A Markov random field approach for modeling spatio-temporal evolution of microstructures. Modelling and Simulation in Materials Science and Engineering, 2016, 24, 075005.	2.0	30
58	Atomistic Modeling of Thermal Conductivity of Epoxy Nanotube Composites. Jom, 2016, 68, 1396-1410.	1.9	16
59	Utilization of a Linear Solver for Multiscale Design and Optimization of Microstructures. AIAA Journal, 2016, 54, 1751-1759.	2.6	39
60	Linear Solution Scheme for Microstructure Design with Process Constraints. AIAA Journal, 2016, 54, 4022-4031.	2.6	30
61	A Markov random field approach for microstructure synthesis. Modelling and Simulation in Materials Science and Engineering, 2016, 24, 035015.	2.0	26
62	Modeling fatigue failure using the variational multiscale method. Engineering Fracture Mechanics, 2016, 162, 290-308.	4.3	9
63	Modeling the mechanics of HMX detonation using a Taylorâ€"Galerkin scheme. Theoretical and Applied Mechanics Letters, 2016, 6, 143-147.	2.8	2
64	Optimization of Spatially Varying Fiber Paths for a Symmetric Laminate with a Circular Cutout under Remote Uniaxial Tension. SAE International Journal of Materials and Manufacturing, 2015, 9, 75-80.	0.3	6
65	Thermal buckling of composite plates with spatial varying fiber orientations. Composite Structures, 2015, 124, 228-235.	5.8	46
66	A predictive machine learning approach for microstructure optimization and materials design. Scientific Reports, 2015, 5, 11551.	3.3	128
67	Crystal plasticity simulations using nearest neighbor orientation correlation function. Acta Materialia, 2015, 93, 12-23.	7.9	7
68	Atomistic modeling of thermomechanical properties of SWNT/Epoxy nanocomposites. Modelling and Simulation in Materials Science and Engineering, 2015, 23, 065003.	2.0	15
69	An atomistically informed energy-based theory of environmentally assisted failure. Corrosion Reviews, 2015, 33, 455-465.	2.0	3
70	Study of temperature dependence of thermal conductivity in cross-linked epoxies using molecular dynamics simulations with long range interactions. Modelling and Simulation in Materials Science and Engineering, 2014, 22, 025013.	2.0	48
71	A peridynamic implementation of crystal plasticity. International Journal of Solids and Structures, 2014, 51, 3350-3360.	2.7	80
72	Reconstruction of three-dimensional anisotropic microstructures from two-dimensional micrographs imaged on orthogonal planes. Integrating Materials and Manufacturing Innovation, 2014, 3, 240-250.	2.6	41

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73	Construction of multi-dimensional isotropic kernels for nonlocal elasticity based on phonon dispersion data. International Journal of Solids and Structures, 2014, 51, 392-401.	2.7	27
74	Non-local modeling of epoxy using an atomistically-informed kernel. International Journal of Solids and Structures, 2013, 50, 2837-2845.	2.7	28
75	Molecular dynamics simulations of compressive yielding in cross-linked epoxies in the context of Argon theory. International Journal of Plasticity, 2013, 47, 111-125.	8.8	47
76	Construction of kernel for nonlocal elasticity from one-dimensional dispersion data in reciprocal space. , 2013, , .		2
77	A probabilistic crystal plasticity model for modeling grain shape effects based on slip geometry. Acta Materialia, 2012, 60, 5233-5244.	7.9	37
78	Probabilistic modeling of microstructure evolution using finite element representation of statistical correlation functions. International Journal of Plasticity, 2012, 30-31, 62-80.	8.8	14
79	Multiâ€scale modeling of moving interface problems with flux and field jumps: Application to oxidative degradation of ceramic matrix composites. International Journal for Numerical Methods in Engineering, 2011, 85, 784-804.	2.8	12
80	Minimization of thermal expansion of symmetric, balanced, angle ply laminates by optimization of fiber path configurations. Composites Science and Technology, 2011, 71, 1105-1109.	7.8	14
81	Non-local continuum modeling of carbon nanotubes: Physical interpretation of non-local kernels using atomistic simulations. Journal of the Mechanics and Physics of Solids, 2011, 59, 1191-1203.	4.8	38
82	Calibration of Nanocrystal Grain Boundary Model Based on Polycrystal Plasticity Using Molecular Dynamics Simulations. International Journal for Multiscale Computational Engineering, 2010, 8, 509-522.	1.2	4
83	Multiscale Modeling of Oxidative Degradation of C-SiC Composite. , 2010, , .		4
84	Design of Microstructure Response Using a Complex Step Plasticity Approach. , 2010, , .		0
85	Multi-scale homogenization of moving interface problems with flux jumps: application to solidification. Computational Mechanics, 2009, 44, 297-307.	4.0	5
86	A statistical learning approach for the design of polycrystalline materials. Statistical Analysis and Data Mining, 2009, 1, 306-321.	2.8	29
87	A multi-length scale sensitivity analysis for the control of texture-dependent properties in deformation processing. International Journal of Plasticity, 2008, 24, 1581-1605.	8.8	46
88	Weighted multibody expansions for computing stable structures of multiatom systems. Physical Review B, 2008, 77, .	3.2	3
89	Linear analysis of textureâ€"property relationships using process-based representations of Rodrigues space. Acta Materialia, 2007, 55, 1573-1587.	7.9	62
90	Design of microstructure-sensitive properties in elasto-viscoplastic polycrystals using multi-scale homogenization. International Journal of Plasticity, 2006, 22, 1799-1824.	8.8	53

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91	Classification and reconstruction of three-dimensional microstructures using support vector machines. Computational Materials Science, 2005, 32, 223-239.	3.0	144
92	A novel approach for modelling of water jet peening. International Journal of Machine Tools and Manufacture, 2004, 44, 855-863.	13.4	32
93	A dynamic material library for the representation of single-phase polyhedral microstructures. Acta Materialia, 2004, 52, 4111-4119.	7.9	33
94	Higher-Order Approximations for Stabilizing Zero-Energy Modes in Non-Ordinary State-Based Peridynamics Models. AIAA Journal, 0, , 1-17.	2.6	0