

Veera Sundararaghavan

List of Publications by Year in descending order

Source: <https://exaly.com/author-pdf/2976160/publications.pdf>

Version: 2024-02-01

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	Classification and reconstruction of three-dimensional microstructures using support vector machines. <i>Computational Materials Science</i> , 2005, 32, 223-239.	3.0	144
2	A predictive machine learning approach for microstructure optimization and materials design. <i>Scientific Reports</i> , 2015, 5, 11551.	3.3	128
3	PRISMS-Plasticity: An open-source crystal plasticity finite element software. <i>Computational Materials Science</i> , 2019, 169, 109078.	3.0	86
4	A peridynamic implementation of crystal plasticity. <i>International Journal of Solids and Structures</i> , 2014, 51, 3350-3360.	2.7	80
5	Characterizing microscale deformation mechanisms and macroscopic tensile properties of a high strength magnesium rare-earth alloy: A combined experimental and crystal plasticity approach. <i>Acta Materialia</i> , 2020, 186, 77-94.	7.9	67
6	Linear analysis of texture-property relationships using process-based representations of Rodrigues space. <i>Acta Materialia</i> , 2007, 55, 1573-1587.	7.9	62
7	Stability and strain-driven evolution of β precipitate in Mg-Y alloys. <i>Acta Materialia</i> , 2019, 166, 148-157.	7.9	62
8	The effects of heat treatment on the response of WE43 Mg alloy: crystal plasticity finite element simulation and SEM-DIC experiment. <i>International Journal of Plasticity</i> , 2021, 137, 102917.	8.8	56
9	Stress-point method for stabilizing zero-energy modes in non-ordinary state-based peridynamics. <i>International Journal of Solids and Structures</i> , 2018, 150, 197-207.	2.7	55
10	Design of microstructure-sensitive properties in elasto-viscoplastic polycrystals using multi-scale homogenization. <i>International Journal of Plasticity</i> , 2006, 22, 1799-1824.	8.8	53
11	Study of temperature dependence of thermal conductivity in cross-linked epoxies using molecular dynamics simulations with long range interactions. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2014, 22, 025013.	2.0	48
12	Molecular dynamics simulations of compressive yielding in cross-linked epoxies in the context of Argon theory. <i>International Journal of Plasticity</i> , 2013, 47, 111-125.	8.8	47
13	A multi-length scale sensitivity analysis for the control of texture-dependent properties in deformation processing. <i>International Journal of Plasticity</i> , 2008, 24, 1581-1605.	8.8	46
14	Thermal buckling of composite plates with spatial varying fiber orientations. <i>Composite Structures</i> , 2015, 124, 228-235.	5.8	46
15	Multiscale modeling of twinning and detwinning behavior of HCP polycrystals. <i>International Journal of Plasticity</i> , 2020, 127, 102653.	8.8	44
16	Quantitative study of the effect of grain boundary parameters on the slip system level Hall-Petch slope for basal slip system in Mg-4Al. <i>Acta Materialia</i> , 2020, 200, 148-161.	7.9	44
17	Reconstruction of three-dimensional anisotropic microstructures from two-dimensional micrographs imaged on orthogonal planes. <i>Integrating Materials and Manufacturing Innovation</i> , 2014, 3, 240-250.	2.6	41
18	Microstructure optimization with constrained design objectives using machine learning-based feedback-aware data-generation. <i>Computational Materials Science</i> , 2019, 160, 334-351.	3.0	41

#	ARTICLE	IF	CITATIONS
19	Utilization of a Linear Solver for Multiscale Design and Optimization of Microstructures. AIAA Journal, 2016, 54, 1751-1759.	2.6	39
20	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
21	A probabilistic crystal plasticity model for modeling grain shape effects based on slip geometry. Acta Materialia, 2012, 60, 5233-5244.	7.9	37
22	Uncertainty quantification of microstructural properties due to variability in measured pole figures. Acta Materialia, 2017, 124, 100-108.	7.9	36
23	Failure predictions of DP600 steel sheets using various uncoupled fracture criteria. Engineering Fracture Mechanics, 2018, 190, 367-381.	4.3	36
24	PRISMS-Fatigue computational framework for fatigue analysis in polycrystalline metals and alloys. Npj Computational Materials, 2021, 7, .	8.7	34
25	A dynamic material library for the representation of single-phase polyhedral microstructures. Acta Materialia, 2004, 52, 4111-4119.	7.9	33
26	A novel approach for modelling of water jet peening. International Journal of Machine Tools and Manufacture, 2004, 44, 855-863.	13.4	32
27	Uncertainty Quantification of Microstructural Properties due to Experimental Variations. AIAA Journal, 2017, 55, 2824-2832.	2.6	32
28	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
29	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
30	Linear Solution Scheme for Microstructure Design with Process Constraints. AIAA Journal, 2016, 54, 4022-4031.	2.6	30
31	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
32	Crystal Plasticity Modeling and Experimental Validation with an Orientation Distribution Function for Ti-7Al Alloy. Metals, 2017, 7, 459.	2.3	30
33	PRISMS: An Integrated, Open-Source Framework for Accelerating Predictive Structural Materials Science. Jom, 2018, 70, 2298-2314.	1.9	30
34	A statistical learning approach for the design of polycrystalline materials. Statistical Analysis and Data Mining, 2009, 1, 306-321.	2.8	29
35	Non-local modeling of epoxy using an atomistically-informed kernel. International Journal of Solids and Structures, 2013, 50, 2837-2845.	2.7	28
36	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

#	ARTICLE	IF	CITATIONS
37	Three-dimensional crystal plasticity simulations using peridynamics theory and experimental comparison. <i>International Journal of Plasticity</i> , 2021, 142, 102991.	8.8	27
38	A Markov random field approach for microstructure synthesis. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2016, 24, 035015.	2.0	26
39	Stochastic Design Optimization of Microstructures with Utilization of a Linear Solver. <i>AIAA Journal</i> , 2017, 55, 3161-3168.	2.6	26
40	Deformation twinning and detwinning in extruded Mg-4Al: In-situ experiment and crystal plasticity simulation. <i>International Journal of Plasticity</i> , 2022, 155, 103345.	8.8	26
41	Polycrystalline Microstructure Reconstruction Using Markov Random Fields and Histogram Matching. <i>CAD Computer Aided Design</i> , 2020, 120, 102806.	2.7	23
42	Molecular dynamics study of phonon transport in graphyne nanotubes. <i>Carbon</i> , 2017, 123, 635-644.	10.3	22
43	Crystal Plasticity Simulation of Magnesium and Its Alloys: A Review of Recent Advances. <i>Crystals</i> , 2021, 11, 435.	2.2	22
44	A quantitative study of stress fields ahead of a slip band blocked by a grain boundary in unalloyed magnesium. <i>Scientific Reports</i> , 2020, 10, 3084.	3.3	20
45	Thermal conductivity of pillared graphene-epoxy nanocomposites using molecular dynamics. <i>Applied Physics Letters</i> , 2018, 112, 151902.	3.3	18
46	Stochastic Design Optimization of Microstructural Features Using Linear Programming for Robust Design. <i>AIAA Journal</i> , 2019, 57, 448-455.	2.6	17
47	Atomistic Modeling of Thermal Conductivity of Epoxy Nanotube Composites. <i>Jom</i> , 2016, 68, 1396-1410.	1.9	16
48	Crystal Plasticity Finite Element Modeling of Extension Twinning in WE43 Mg Alloys: Calibration and Validation. <i>Integrating Materials and Manufacturing Innovation</i> , 2021, 10, 488-507.	2.6	16
49	Estimation of micro-Hall-Petch coefficients for prismatic slip system in Mg-4Al as a function of grain boundary parameters. <i>Acta Materialia</i> , 2022, 226, 117613.	7.9	16
50	Atomistic modeling of thermomechanical properties of SWNT/Epoxy nanocomposites. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2015, 23, 065003.	2.0	15
51	A grain boundary interaction model for microstructurally short fatigue cracks. <i>International Journal of Fatigue</i> , 2018, 113, 401-406.	5.7	15
52	Using synchrotron radiation to improve understanding of deformation of polycrystalline metals by measuring, modelling and publishing 4D information. <i>IOP Conference Series: Materials Science and Engineering</i> , 2019, 580, 012017.	0.6	15
53	Minimization of thermal expansion of symmetric, balanced, angle ply laminates by optimization of fiber path configurations. <i>Composites Science and Technology</i> , 2011, 71, 1105-1109.	7.8	14
54	Probabilistic modeling of microstructure evolution using finite element representation of statistical correlation functions. <i>International Journal of Plasticity</i> , 2012, 30-31, 62-80.	8.8	14

#	ARTICLE	IF	CITATIONS
55	Box algorithm for the solution of differential equations on a quantum annealer. <i>Physical Review A</i> , 2019, 99, .	2.5	14
56	Understanding defect structures in nanoscale metal additive manufacturing via molecular dynamics. <i>Computational Materials Science</i> , 2021, 200, 110807.	3.0	14
57	Multi-scale modeling of moving interface problems with flux and field jumps: Application to oxidative degradation of ceramic matrix composites. <i>International Journal for Numerical Methods in Engineering</i> , 2011, 85, 784-804.	2.8	12
58	Graphyne Nanotubes: Materials with Ultralow Phonon Mean Free Path and Strong Optical Phonon Scattering for Thermoelectric Applications. <i>Journal of Physical Chemistry C</i> , 2018, 122, 22688-22698.	3.1	12
59	Simulation of magnetostrictive properties of Galfenol under thermomechanical deformation. <i>Finite Elements in Analysis and Design</i> , 2017, 127, 1-5.	3.2	11
60	Do Epistemic Uncertainties Allow for Replacing Microstructural Experiments with Reconstruction Algorithms?. <i>AIAA Journal</i> , 2019, 57, 1078-1091.	2.6	11
61	Modeling self-healing behavior of vitrimers using molecular dynamics with dynamic cross-linking capability. <i>Chemical Physics Letters</i> , 2020, 760, 137966.	2.6	10
62	Database development and exploration of process-microstructure relationships using variational autoencoders. <i>Materials Today Communications</i> , 2020, 25, 101201.	1.9	10
63	Modeling fatigue failure using the variational multiscale method. <i>Engineering Fracture Mechanics</i> , 2016, 162, 290-308.	4.3	9
64	A method to predict fatigue crack initiation in metals using dislocation dynamics. <i>Corrosion Reviews</i> , 2017, 35, 325-341.	2.0	9
65	Data Sampling Schemes for Microstructure Design with Vibrational Tuning Constraints. <i>AIAA Journal</i> , 2018, 56, 1239-1250.	2.6	9
66	MicroFract: An image based code for microstructural crack path prediction. <i>SoftwareX</i> , 2017, 6, 94-97.	2.6	8
67	Low Cycle Fatigue Behaviour of DP Steels: Micromechanical Modelling vs. Validation. <i>Metals</i> , 2017, 7, 265.	2.3	8
68	A graph-theoretic approach for multiscale modeling and prediction of crack propagation in polycrystalline materials. <i>Engineering Fracture Mechanics</i> , 2021, 241, 107406.	4.3	8
69	Crystal plasticity simulations using nearest neighbor orientation correlation function. <i>Acta Materialia</i> , 2015, 93, 12-23.	7.9	7
70	Dislocation theory-based cohesive model for microstructurally short fatigue crack growth. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2017, 708, 395-404.	5.6	7
71	Constrained Voronoi models for interpreting surface microstructural measurements. <i>Mechanics of Materials</i> , 2021, 159, 103892.	3.2	7
72	Optimization of Spatially Varying Fiber Paths for a Symmetric Laminate with a Circular Cutout under Remote Uniaxial Tension. <i>SAE International Journal of Materials and Manufacturing</i> , 2015, 9, 75-80.	0.3	6

#	ARTICLE	IF	CITATIONS
73	Experimental and Numerical Investigations into the Failure Mechanisms of TRIP700 Steel Sheets. <i>Metals</i> , 2018, 8, 1073.	2.3	6
74	Multi-scale homogenization of moving interface problems with flux jumps: application to solidification. <i>Computational Mechanics</i> , 2009, 44, 297-307.	4.0	5
75	Fiber Path Optimization of Symmetric Laminates with Cutouts for Thermal Buckling. <i>Journal of Aircraft</i> , 2017, 54, 54-61.	2.4	5
76	Calibration of Nanocrystal Grain Boundary Model Based on Polycrystal Plasticity Using Molecular Dynamics Simulations. <i>International Journal for Multiscale Computational Engineering</i> , 2010, 8, 509-522.	1.2	4
77	Multiscale Modeling of Oxidative Degradation of C-SiC Composite. , 2010, , .		4
78	Reduced-Order Modeling Approach for Materials Design with a Sequence of Processes. <i>AIAA Journal</i> , 2018, 56, 5041-5044.	2.6	4
79	Multiscale Optimization of Nanocomposites with Probabilistic Feature Descriptors. <i>AIAA Journal</i> , 2018, 56, 2936-2941.	2.6	4
80	Large-Scale Synthesis of Metal Additively-Manufactured Microstructures Using Markov Random Fields. <i>Computational Materials Science</i> , 2022, 206, 111228.	3.0	4
81	Weighted multibody expansions for computing stable structures of multiatom systems. <i>Physical Review B</i> , 2008, 77, .	3.2	3
82	An atomistically informed energy-based theory of environmentally assisted failure. <i>Corrosion Reviews</i> , 2015, 33, 455-465.	2.0	3
83	Graph Coloring Approach to Mesh Generation in Multiphase Media with Smooth Boundaries. <i>AIAA Journal</i> , 2020, 58, 198-205.	2.6	3
84	Construction of kernel for nonlocal elasticity from one-dimensional dispersion data in reciprocal space. , 2013, , .		2
85	Modeling Crack Propagation in Polycrystalline Microstructure Using Variational Multiscale Method. <i>Mathematical Problems in Engineering</i> , 2016, 2016, 1-14.	1.1	2
86	Modeling the mechanics of HMX detonation using a Taylorâ€™Galerkin scheme. <i>Theoretical and Applied Mechanics Letters</i> , 2016, 6, 143-147.	2.8	2
87	A Hybrid Multi-Scale Model of Crystal Plasticity for Handling Stress Concentrations. <i>Metals</i> , 2017, 7, 345.	2.3	2
88	Computational modeling of crystallographic texture evolution over cubochochic space. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2018, 26, 065012.	2.0	2
89	Higher-Order Approximations for Stabilizing Zero-Energy Modes in Peridynamics Crystal Plasticity Models with Large Horizon Interactions. , 2022, , .		1
90	Finite element code development for modeling detonation of HMX composites. <i>AIP Conference Proceedings</i> , 2017, , .	0.4	0

#	ARTICLE	IF	CITATIONS
91	Design of Microstructure Response Using a Complex Step Plasticity Approach. , 2010, , .		0
92	A Crystal Plasticity Model for Dynamic Recrystallization in Ti-6Al-4V Alloy. , 2018, , .		0
93	Fiber Path Optimization of a Composite Lamina Based on Non-uniform Rational B-Spline Surface. , 2022, , .		0
94	Higher-Order Approximations for Stabilizing Zero-Energy Modes in Non-Ordinary State-Based Peridynamics Models. AIAA Journal, 0, , 1-17.	2.6	0