

Jaroslav Knap

List of Publications by Year in descending order

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27
papers

1,065
citations

516710

16
h-index

526287

27
g-index

27
all docs

27
docs citations

27
times ranked

1348
citing authors

#	ARTICLE	IF	CITATIONS
1	Modeling Insight into Battery Electrolyte Electrochemical Stability and Interfacial Structure. <i>Accounts of Chemical Research</i> , 2017, 50, 2886-2894.	15.6	234
2	Towards high throughput screening of electrochemical stability of battery electrolytes. <i>Nanotechnology</i> , 2015, 26, 354003.	2.6	160
3	Nanovoid Cavitation by Dislocation Emission in Aluminum. <i>Physical Review Letters</i> , 2004, 93, 165503.	7.8	93
4	Nanovoid deformation in aluminum under simple shear. <i>Acta Materialia</i> , 2005, 53, 2893-2900.	7.9	78
5	Embedded polycrystal plasticity and adaptive sampling. <i>International Journal of Plasticity</i> , 2008, 24, 242-266.	8.8	72
6	Non-periodic finite-element formulation of orbital-free density functional theory. <i>Journal of the Mechanics and Physics of Solids</i> , 2007, 55, 669-696.	4.8	57
7	Analytic model for the Orowan dislocation-precipitate bypass mechanism. <i>Materialia</i> , 2020, 11, 100671.	2.7	42
8	A multiply parallel implementation of finite element-based discrete dislocation dynamics for arbitrary geometries. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2014, 22, 035014.	2.0	33
9	Fracture and fragmentation of simplicial finite element meshes using graphs. <i>International Journal for Numerical Methods in Engineering</i> , 2008, 73, 1547-1570.	2.8	31
10	Numerical modelling and experimental validation of dynamic fracture events along weak planes. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2007, 196, 3833-3840.	6.6	30
11	A call to arms for task parallelism in multi-scale materials modeling. <i>International Journal for Numerical Methods in Engineering</i> , 2011, 86, 744-764.	2.8	30
12	Mastering the scales: a survey on the benefits of multiscale computing software. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2019, 377, 20180147.	3.4	30
13	Higher-order adaptive finite-element methods for orbital-free density functional theory. <i>Journal of Computational Physics</i> , 2012, 231, 6596-6621.	3.8	28
14	Capturing the effects of free surfaces on void strengthening with dislocation dynamics. <i>Acta Materialia</i> , 2015, 101, 40-47.	7.9	28
15	Accelerated scale-bridging through adaptive surrogate model evaluation. <i>Journal of Computational Science</i> , 2018, 27, 91-106.	2.9	22
16	Prismatic and helical dislocation loop generation from defects. <i>Acta Materialia</i> , 2016, 103, 217-228.	7.9	17
17	The role of free surfaces on the formation of prismatic dislocation loops. <i>Scripta Materialia</i> , 2015, 103, 65-68.	5.2	15
18	LAMMPS integrated materials engine (LIME) for efficient automation of particle-based simulations: application to equation of state generation. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2017, 25, 055006.	2.0	14

#	ARTICLE	IF	CITATIONS
19	Experimental validation of large-scale simulations of dynamic fracture along weak planes. International Journal of Impact Engineering, 2009, 36, 888-898.	5.0	9
20	An algorithm for massively parallel dislocation dynamics simulations of small scale plasticity. Journal of Computational Science, 2013, 4, 401-411.	2.9	9
21	Modeling the effect of dislocation density on the strength statistics in nanoindentation. Modelling and Simulation in Materials Science and Engineering, 2018, 26, 015009.	2.0	7
22	Dislocation precipitate bypass through elastically mismatched precipitates. Modelling and Simulation in Materials Science and Engineering, 2021, 29, 025005.	2.0	6
23	Polycrystal Plasticity Based Predictions of Strain Localization in Metal Forming. Journal of Engineering Materials and Technology, Transactions of the ASME, 2008, 130, .	1.4	5
24	Analytic model for the line tension of a bowing dislocation segment. Philosophical Magazine Letters, 2019, 99, 77-86.	1.2	5
25	Enhancing Hierarchical Multiscale Off-Road Mobility Model by Neural Network Surrogate Model. Journal of Computational and Nonlinear Dynamics, 2021, 16, .	1.2	5
26	Accelerated scale bridging with sparsely approximated Gaussian learning. Journal of Computational Physics, 2020, 403, 109049.	3.8	4
27	Multiscale modeling of 3D nano-architected materials under large deformations. International Journal of Solids and Structures, 2022, 252, 111839.	2.7	1