

# Alexander Stukowski

## List of Publications by Year in descending order

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56  
papers

15,397  
citations

136950

32  
h-index

168389

53  
g-index

57  
all docs

57  
docs citations

57  
times ranked

8584  
citing authors

#	ARTICLE	IF	CITATIONS
1	Visualization and analysis of atomistic simulation data with OVITO—the Open Visualization Tool. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2010, 18, 015012.	2.0	8,805
2	Automated identification and indexing of dislocations in crystal interfaces. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2012, 20, 085007.	2.0	1,412
3	Structure identification methods for atomistic simulations of crystalline materials. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2012, 20, 045021.	2.0	1,065
4	Extracting dislocations and non-dislocation crystal defects from atomistic simulation data. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2010, 18, 085001.	2.0	815
5	Computational Analysis Methods in Atomistic Modeling of Crystals. <i>Jom</i> , 2014, 66, 399-407.	1.9	356
6	Probing the limits of metal plasticity with molecular dynamics simulations. <i>Nature</i> , 2017, 550, 492-495.	27.8	302
7	Global transition path search for dislocation formation in Ge on Si(001). <i>Computer Physics Communications</i> , 2016, 205, 13-21.	7.5	299
8	Scalable parallel Monte Carlo algorithm for atomistic simulations of precipitation in alloys. <i>Physical Review B</i> , 2012, 85, .	3.2	230
9	Influence of microstructure on the cutting behaviour of silicon. <i>Acta Materialia</i> , 2016, 105, 464-478.	7.9	155
10	Dislocation detection algorithm for atomistic simulations. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2010, 18, 025016.	2.0	139
11	Nanotwinned fcc metals: Strengthening versus softening mechanisms. <i>Physical Review B</i> , 2010, 82, .	3.2	120
12	Anomalous compliance and early yielding of nanoporous gold. <i>Acta Materialia</i> , 2015, 93, 144-155.	7.9	116
13	Atomistic simulation of tantalum nanoindentation: Effects of indenter diameter, penetration velocity, and interatomic potentials on defect mechanisms and evolution. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2014, 613, 390-403.	5.6	98
14	A variational formulation of the quasicontinuum method based on energy sampling in clusters. <i>Journal of the Mechanics and Physics of Solids</i> , 2009, 57, 87-108.	4.8	87
15	Anisotropy of single-crystal 3C—SiC during nanometric cutting. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2013, 21, 065004.	2.0	85
16	Efficient implementation of the concentration-dependent embedded atom method for molecular-dynamics and Monte-Carlo simulations. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2009, 17, 075005.	2.0	80
17	Atomistic origin of microstrain broadening in diffraction data of nanocrystalline solids. <i>Acta Materialia</i> , 2009, 57, 1648-1654.	7.9	79
18	On the elastic—plastic decomposition of crystal deformation at the atomic scale. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2012, 20, 035012.	2.0	78

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19	Dislocation evolution and peak spall strengths in single crystal and nanocrystalline Cu. Journal of Applied Physics, 2016, 119, .	2.5	77
20	Thermally-activated non-Schmid glide of screw dislocations in W using atomistically-informed kinetic Monte Carlo simulations. International Journal of Plasticity, 2015, 65, 108-130.	8.8	76
21	Properties of Helium bubbles in Fe and FeCr alloys. Journal of Nuclear Materials, 2011, 418, 261-268.	2.7	74
22	Molecular dynamics simulations of shock-induced plasticity in tantalum. High Energy Density Physics, 2014, 10, 9-15.	1.5	74
23	Grain boundary structure and mobility in high-entropy alloys: A comparative molecular dynamics study on a $\{111\}$ symmetrical tilt grain boundary in face-centered cubic CuNiCoFe. Acta Materialia, 2020, 186, 11-19.	7.9	66
24	Atomistic insights into metal hardening. Nature Materials, 2021, 20, 315-320.	27.5	59
25	Three-dimensional crack initiation mechanisms in bcc-Fe under loading modes I, II and III. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2013, 560, 306-314.	5.6	55
26	Plastic deformation of nanocrystalline Pd-Au alloys: On the interplay of grain boundary solute segregation, fault energies and grain size. Acta Materialia, 2011, 59, 2957-2968.	7.9	47
27	Plastic deformation of a porous bcc metal containing nanometer sized voids. Computational Materials Science, 2014, 88, 92-102.	3.0	47
28	Manipulating dislocation nucleation and shear resistance of bimetal interfaces by atomic steps. Acta Materialia, 2016, 113, 194-205.	7.9	44
29	Designing nanoindentation simulation studies by appropriate indenter choices: Case study on single crystal tungsten. Computational Materials Science, 2018, 152, 196-210.	3.0	43
30	Atomistic simulation of the mechanical response of a nanoporous body-centered cubic metal. Scripta Materialia, 2013, 68, 817-820.	5.2	37
31	Assessment of interatomic potentials for atomistic analysis of static and dynamic properties of screw dislocations in W. Journal of Physics Condensed Matter, 2013, 25, 085702.	1.8	35
32	3D Dislocation structure evolution in strontium titanate: Spherical indentation experiments and MD simulations. Journal of the American Ceramic Society, 2017, 100, 1134-1145.	3.8	35
33	Atomistic investigation on the structure-property relationship during thermal spray nanoparticle impact. Computational Materials Science, 2014, 84, 163-174.	3.0	31
34	Interplay of dislocation-based plasticity and phase transformation during Si nanoindentation. Computational Materials Science, 2016, 119, 82-89.	3.0	28
35	Experimental and theoretical study of tracer diffusion in a series of (CoCrFeMn) <sub>100-x</sub> Ni <sub>x</sub> alloys. Acta Materialia, 2020, 194, 236-248.	7.9	28
36	A triangulation-based method to identify dislocations in atomistic models. Journal of the Mechanics and Physics of Solids, 2014, 70, 314-319.	4.8	27

#	ARTICLE	IF	CITATIONS
37	Reinforcement of nanoglasses by interface strengthening. Scripta Materialia, 2017, 141, 115-119.	5.2	24
38	Interface-controlled creep in metallic glass composites. Acta Materialia, 2017, 141, 251-260.	7.9	20
39	Atomistic deformation behavior of single and twin crystalline Cu nanopillars with preexisting dislocations. Acta Materialia, 2020, 197, 54-68.	7.9	20
40	Atomix—a general purpose tool for the construction of atomic interaction models. Modelling and Simulation in Materials Science and Engineering, 2017, 25, 055003.	2.0	18
41	Horizons of modern molecular dynamics simulation in digitalized solid freeform fabrication with advanced materials. Materials Today Chemistry, 2020, 18, 100356.	3.5	14
42	Atomistic simulation of Er irradiation induced defects in GaN nanowires. Journal of Applied Physics, 2014, 116, .	2.5	12
43	Composition-dependent interatomic potentials: A systematic approach to modelling multicomponent alloys. Philosophical Magazine, 2009, 89, 3371-3391.	1.6	11
44	The effect of solute cloud formation on the second order pyramidal to basal transition of $\text{Si}$ edge dislocations in Mg-Y solid solutions. Scripta Materialia, 2020, 182, 53-56.	5.2	11
45	Solid solution hardening in CrMnFeCoNi-based high entropy alloy systems studied by a combinatorial approach. Journal of Materials Research, 2021, 36, 2558-2570.	2.6	10
46	Visualization and Analysis Strategies for Atomistic Simulations. Springer Series in Materials Science, 2016, , 317-336.	0.6	9
47	On the hierarchy of deformation processes in nanocrystalline alloys: Grain boundary mediated plasticity vs. dislocation slip. Journal of Applied Physics, 2013, 114, .	2.5	8
48	Nanotribology at high temperatures. Beilstein Journal of Nanotechnology, 2012, 3, 586-588.	2.8	7
49	Minimum energy path for the nucleation of misfit dislocations in Ge/Si(0 0 1) heteroepitaxy. Modelling and Simulation in Materials Science and Engineering, 2016, 24, 035007.	2.0	7
50	Elastostatic loading of metallic glass-crystal nanocomposites: Relationship of creep rate and interface energy. Physical Review Materials, 2019, 3, .	2.4	6
51	Structure of Si/Ge nanoclusters: Kinetics and thermodynamics. Computational Materials Science, 2011, 50, 1504-1508.	3.0	5
52	Comment on "Incipient plasticity of diamond during nanoindentation" by C. Xu, C. Liu and H. Wang, RSC Advances, 2017, 7, 36093. RSC Advances, 2018, 8, 5136-5137.	3.6	4
53	Energy-Minimization in Atomic-to-Continuum Scale-Bridging Methods. Proceedings in Applied Mathematics and Mechanics, 2011, 11, 509-510.	0.2	3
54	Dislocation Analysis Tool for Atomistic Simulations. , 2018, , 1-14.		2

#	ARTICLE	IF	CITATIONS
55	Dislocation Analysis Tool for Atomistic Simulations. , 2020, , 1545-1558.		2
56	Influence of surface stress on the mechanical response of nanoporous metals studied by an atomistically informed continuum model. Acta Materialia, 2021, 221, 117373.	7.9	0