Alexander Stukowski

List of Publications by Citations

56 papers	10,096 citations	28 h-index	57 g-index
57 ext. papers	12,583 ext. citations	5.3 avg, IF	7.51 L-index

#	Paper	IF	Citations
56	Visualization and analysis of atomistic simulation data with OVITO–the Open Visualization Tool. *Modelling and Simulation in Materials Science and Engineering*, **2010**, 18, 015012	2	5508
55	Automated identification and indexing of dislocations in crystal interfaces. *Modelling and Simulation in Materials Science and Engineering*, **2012**, 20, 085007	2	892
54	Structure identification methods for atomistic simulations of crystalline materials. *Modelling and Simulation in Materials Science and Engineering*, **2012**, 20, 045021	2	749
53	Extracting dislocations and non-dislocation crystal defects from atomistic simulation data. *Modelling and Simulation in Materials Science and Engineering*, **2010**, 18, 085001	2	546
52	Computational Analysis Methods in Atomistic Modeling of Crystals. *Jom*, **2014**, 66, 399-407	2.1	238
51	Global transition path search for dislocation formation in Ge on Si(001). *Computer Physics Communications*, **2016**, 205, 13-21	4.2	203
50	Probing the limits of metal plasticity with molecular dynamics simulations. *Nature*, **2017**, 550, 492-495	50.4	202
49	Scalable parallel Monte Carlo algorithm for atomistic simulations of precipitation in alloys. *Physical Review B*, **2012**, 85,	3.3	159
48	Influence of microstructure on the cutting behaviour of silicon. *Acta Materialia*, **2016**, 105, 464-478	8.4	111
47	Nanotwinned fcc metals: Strengthening versus softening mechanisms. *Physical Review B*, **2010**, 82,	3.3	108
46	Anomalous compliance and early yielding of nanoporous gold. *Acta Materialia*, **2015**, 93, 144-155	8.4	106
45	Dislocation detection algorithm for atomistic simulations. *Modelling and Simulation in Materials Science and Engineering*, **2010**, 18, 025016	2	105
44	A variational formulation of the quasicontinuum method based on energy sampling in clusters. *Journal of the Mechanics and Physics of Solids*, **2009**, 57, 87-108	5	77
43	Atomistic simulation of tantalum nanoindentation: Effects of indenter diameter, penetration velocity, and interatomic potentials on defect mechanisms and evolution. *Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing*, **2014**, 613, 390-403	5.3	76
42	Atomistic origin of microstrain broadening in diffraction data of nanocrystalline solids. *Acta Materialia*, **2009**, 57, 1648-1654	8.4	68
41	On the elastic–plastic decomposition of crystal deformation at the atomic scale. *Modelling and Simulation in Materials Science and Engineering*, **2012**, 20, 035012	2	65
40	Molecular dynamics simulations of shock-induced plasticity in tantalum. *High Energy Density Physics*, **2014**, 10, 9-15	1.2	64

39	Properties of Helium bubbles in Fe and FeCr alloys. *Journal of Nuclear Materials*, **2011**, 418, 261-268	3.3	64
38	Efficient implementation of the concentration-dependent embedded atom method for molecular-dynamics and Monte-Carlo simulations. *Modelling and Simulation in Materials Science and Engineering*, **2009**, 17, 075005	2	63
37	Anisotropy of single-crystal 3C-SiC during nanometric cutting. *Modelling and Simulation in Materials Science and Engineering*, **2013**, 21, 065004	2	62
36	Dislocation evolution and peak spall strengths in single crystal and nanocrystalline Cu. *Journal of Applied Physics*, **2016**, 119, 044301	2.5	57
35	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	7.6	52
34	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	5.3	45
33	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	8.4	39
32	Plastic deformation of a porous bcc metal containing nanometer sized voids. *Computational Materials Science*, **2014**, 88, 92-102	3.2	37
31	Manipulating dislocation nucleation and shear resistance of bimetal interfaces by atomic steps. *Acta Materialia*, **2016**, 113, 194-205	8.4	37
30	Atomistic simulation of the mechanical response of a nanoporous body-centered cubic metal. *Scripta Materialia*, **2013**, 68, 817-820	5.6	32
29	Designing nanoindentation simulation studies by appropriate indenter choices: Case study on single crystal tungsten. *Computational Materials Science*, **2018**, 152, 196-210	3.2	29
28	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	25
27	Grain boundary structure and mobility in high-entropy alloys: A comparative molecular dynamics study on a Σ11 symmetrical tilt grain boundary in face-centered cubic CuNiCoFe. *Acta Materialia*, **2020**, 186, 11-19	8.4	25
26	Interplay of dislocation-based plasticity and phase transformation during Si nanoindentation. *Computational Materials Science*, **2016**, 119, 82-89	3.2	24
25	Atomistic investigation on the structure-property relationship during thermal spray nanoparticle impact. *Computational Materials Science*, **2014**, 84, 163-174	3.2	23
24	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	23
23	A triangulation-based method to identify dislocations in atomistic models. *Journal of the Mechanics and Physics of Solids*, **2014**, 70, 314-319	5	20
22	Interface-controlled creep in metallic glass composites. *Acta Materialia*, **2017**, 141, 251-260	8.4	15

21	Reinforcement of nanoglasses by interface strengthening. *Scripta Materialia*, **2017**, 141, 115-119	5.6	15
20	Atomistic insights into metal hardening. *Nature Materials*, **2021**, 20, 315-320	27	15
19	Atomicrex – general purpose tool for the construction of atomic interaction models. *Modelling and Simulation in Materials Science and Engineering*, **2017**, 25, 055003	2	14
18	Experimental and theoretical study of tracer diffusion in a series of (CoCrFeMn)100−xNix alloys. *Acta Materialia*, **2020**, 194, 236-248	8.4	14
17	Composition-dependent interatomic potentials: A systematic approach to modelling multicomponent alloys. *Philosophical Magazine*, **2009**, 89, 3371-3391	1.6	11
16	Horizons of modern molecular dynamics simulation in digitalized solid freeform fabrication with advanced materials. *Materials Today Chemistry*, **2020**, 18, 100356	6.2	11
15	Atomistic deformation behavior of single and twin crystalline Cu nanopillars with preexisting dislocations. *Acta Materialia*, **2020**, 197, 54-68	8.4	10
14	Atomistic simulation of Er irradiation induced defects in GaN nanowires. *Journal of Applied Physics*, **2014**, 116, 124313	2.5	9
13	On the hierarchy of deformation processes in nanocrystalline alloys: Grain boundary mediated plasticity vs. dislocation slip. *Journal of Applied Physics*, **2013**, 114, 143501	2.5	8
12	Visualization and Analysis Strategies for Atomistic Simulations. *Springer Series in Materials Science*, **2016**, 317-336	0.9	7
11	Nanotribology at high temperatures. *Beilstein Journal of Nanotechnology*, **2012**, 3, 586-8	3	6
10	Elastostatic loading of metallic glass-crystal nanocomposites: Relationship of creep rate and interface energy. *Physical Review Materials*, **2019**, 3,	3.2	5
9	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	5
8	Comment on "Incipient plasticity of diamond during nanoindentation" by C. Xu, C. Liu and H. Wang, , 2017, , 36093.. *RSC Advances*, **2018**, 8, 5136-5137	3.7	4
7	The effect of solute cloud formation on the second order pyramidal to basal transition of <c+a> edge dislocations in Mg-Y solid solutions. *Scripta Materialia*, **2020**, 182, 53-56	5.6	3
6	Structure of Si/Ge nanoclusters: Kinetics and thermodynamics. *Computational Materials Science*, **2011**, 50, 1504-1508	3.2	3
5	Energy-Minimization in Atomic-to-Continuum Scale-Bridging Methods. *Proceedings in Applied Mathematics and Mechanics*, **2011**, 11, 509-510	0.2	3
4	Solid solution hardening in CrMnFeCoNi-based high entropy alloy systems studied by a combinatorial approach. *Journal of Materials Research*, **2021**, 36, 2558-2570	2.5	3

List of Publications

3	Dislocation Analysis Tool for Atomistic Simulations **2020**, 1545-1558	1
2	Dislocation Analysis Tool for Atomistic Simulations **2018**, 1-14	0
1	Influence of surface stress on the mechanical response of nanoporous metals studied by an atomistically informed continuum model. *Acta Materialia*, **2021**, 221, 117373	8.4