

# Zhenhuan Li

## List of Publications by Year in descending order

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48  
papers

1,040  
citations

394421

19  
h-index

434195

31  
g-index

48  
all docs

48  
docs citations

48  
times ranked

643  
citing authors

#	ARTICLE	IF	CITATIONS
1	Strengthening mechanism in micro-polycrystals with penetrable grain boundaries by discrete dislocation dynamics simulation and Hall-Petch effect. <i>Computational Materials Science</i> , 2009, 46, 1124-1134.	3.0	123
2	Strengthening mechanisms of the nanolayered polycrystalline metallic multilayers assisted by twins. <i>International Journal of Plasticity</i> , 2015, 72, 168-184.	8.8	84
3	Study on interactions of an edge dislocation with vacancy-H complex by atomistic modelling. <i>International Journal of Plasticity</i> , 2017, 92, 31-44.	8.8	60
4	The influence of dislocation climb on the mechanical behavior of polycrystals and grain size effect at elevated temperature. <i>International Journal of Plasticity</i> , 2014, 61, 112-127.	8.8	50
5	A study of fatigue crack tip characteristics using discrete dislocation dynamics. <i>International Journal of Plasticity</i> , 2014, 54, 229-246.	8.8	47
6	Three-dimensional elastic stress fields ahead of blunt V-notches in finite thickness plates. <i>International Journal of Fracture</i> , 2001, 107, 53-71.	2.2	40
7	Coupled DDD-FEM modeling on the mechanical behavior of microlayered metallic multilayer film at elevated temperature. <i>Journal of the Mechanics and Physics of Solids</i> , 2015, 85, 74-97.	4.8	39
8	Effect of multiple hydrogen embrittlement mechanisms on crack propagation behavior of FCC metals: Competition vs. synergy. <i>International Journal of Plasticity</i> , 2021, 143, 103023.	8.8	38
9	The key role of dislocation dissociation in the plastic behaviour of single crystal nickel-based superalloy with low stacking fault energy: Three-dimensional discrete dislocation dynamics modelling. <i>Journal of the Mechanics and Physics of Solids</i> , 2013, 61, 2454-2472.	4.8	36
10	Coupled effect of sample size and grain size in polycrystalline Al nanowires. <i>Scripta Materialia</i> , 2013, 68, 663-666.	5.2	34
11	The size effect and plastic deformation mechanism transition in the nanolayered polycrystalline metallic multilayers. <i>Journal of Applied Physics</i> , 2014, 115, .	2.5	32
12	Effect of interfacial dislocation networks on the evolution of matrix dislocations in nickel-based superalloy. <i>International Journal of Plasticity</i> , 2018, 110, 1-18.	8.8	31
13	Simulation on crack propagation vs. crack-tip dislocation emission by XFEM-based DDD scheme. <i>International Journal of Plasticity</i> , 2019, 114, 87-105.	8.8	30
14	Hydrogen-enhanced interfacial damage in Ni-based single crystal superalloy. <i>Scripta Materialia</i> , 2018, 143, 30-34.	5.2	27
15	A dislocation climb/glide coupled crystal plasticity constitutive model and its finite element implementation. <i>Mechanics of Materials</i> , 2018, 118, 44-61.	3.2	24
16	Transient phase transitions in single-crystal coppers under ultrafast lasers induced shock compression: A molecular dynamics study. <i>Journal of Applied Physics</i> , 2019, 125, .	2.5	24
17	An efficient 2D discrete dislocation Dynamics-XFEM coupling framework and its application to polycrystal plasticity. <i>International Journal of Plasticity</i> , 2020, 127, 102647.	8.8	24
18	Solute hydrogen effects on plastic deformation mechanisms of $\delta$ -Fe with twist grain boundary. <i>International Journal of Hydrogen Energy</i> , 2018, 43, 10481-10495.	7.1	20

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19	Effect of Crystal Orientation on Femtosecond Laser-Induced Thermomechanical Responses and Spallation Behaviors of Copper Films. <i>Scientific Reports</i> , 2017, 7, 9218.	3.3	19
20	Dislocation-density based crystal plasticity model with hydrogen-enhanced localized plasticity in polycrystalline face-centered cubic metals. <i>Mechanics of Materials</i> , 2020, 148, 103472.	3.2	18
21	Modeling of solute hydrogen effect on various planar fault energies. <i>International Journal of Hydrogen Energy</i> , 2020, 45, 9162-9173.	7.1	18
22	Study on hydrogen-affected interaction between dislocation and grain boundary by MD simulation. <i>Computational Materials Science</i> , 2021, 196, 110562.	3.0	17
23	On the interaction of solute atoms with circular inhomogeneity and edge dislocation. <i>International Journal of Plasticity</i> , 2018, 111, 266-287.	8.8	16
24	Ultrafast thermomechanical responses of a copper film under femtosecond laser trains: a molecular dynamics study. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2015, 471, 20150614.	2.1	15
25	Dislocation-density based size-dependent crystal plasticity framework accounting for climb of piled up dislocations at elevated temperature. <i>Mechanics of Materials</i> , 2019, 134, 85-97.	3.2	14
26	Studying hydrogen effect on the core structure and mobility of dislocation in nickel by atomistically-informed generalized Peierls-Nabarro model. <i>Mechanics of Materials</i> , 2020, 140, 103221.	3.2	14
27	Selective excitation of two-wave structure depending on crystal orientation under shock compression. <i>Science China: Physics, Mechanics and Astronomy</i> , 2020, 63, 1.	5.1	14
28	An atomistically-informed phase-field model for quantifying the effect of hydrogen on the evolution of dislocations in FCC metals. <i>International Journal of Plasticity</i> , 2021, 138, 102937.	8.8	12
29	Studying dislocation-induced shielding effect on the crack-tip in polycrystal by discrete dislocation dynamics. <i>International Journal of Solids and Structures</i> , 2019, 156-157, 148-162.	2.7	10
30	On the stress field and crack nucleation behavior of a disclinated nanowire with surface stress effects. <i>Acta Mechanica</i> , 2014, 225, 3187-3197.	2.1	9
31	Brittle to ductile transition of metallic glasses induced by embedding spherical nanovoids. <i>Journal of Applied Physics</i> , 2017, 122, .	2.5	9
32	The shock response of crystalline Ni with H-free and H-segregated $\sim 1^\circ$ symmetric tilt GBs. <i>Computational Materials Science</i> , 2018, 147, 258-271.	3.0	9
33	Vacancy diffusion coupled discrete dislocation dynamic modeling of compression creep of micro-pillars at elevated temperature. <i>International Journal of Solids and Structures</i> , 2020, 193-194, 375-392.	2.7	9
34	A novel shock-induced multistage phase transformation and underlying mechanism in textured Nano-Twinned Cu. <i>Extreme Mechanics Letters</i> , 2021, 48, 101448.	4.1	9
35	Shielding or anti-shielding effects of solute hydrogen near a finite length crack: A new possible mechanism of hydrogen embrittlement. <i>Mechanics of Materials</i> , 2019, 132, 109-120.	3.2	8
36	Atomistic investigation of mechanical response and deformation mechanism of BCC Ta under double shock loading. <i>Journal of Applied Physics</i> , 2021, 129, .	2.5	8

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37	Unveiling grain size effect on shock-induced plasticity and its underlying mechanisms in nano-polycrystalline Ta. <i>Mechanics of Materials</i> , 2021, 160, 103952.	3.2	8
38	Studying crack propagation along symmetric tilt grain boundary with H segregation in Ni by MD simulation. <i>Computational Materials Science</i> , 2022, 212, 111569.	3.0	8
39	Study on the effects of H on the plastic deformation behavior of grain boundaries in nickel by MD simulation. <i>Materials and Design</i> , 2022, 215, 110472.	7.0	7
40	First-principles study of hydrogen-vacancy interactions in CoCrFeMnNi high-entropy alloy. <i>Journal of Alloys and Compounds</i> , 2022, 922, 166259.	5.5	7
41	Coupling effects of void size and void shape on the growth of prolate ellipsoidal microvoid. <i>Acta Mechanica Sinica/Lixue Xuebao</i> , 2005, 21, 272-277.	3.4	4
42	Molecular dynamics study on shock-induced spallation and damage evolution in nano-polycrystalline Ta: Internal grain size effect vs external shock intensity effect. <i>Journal of Applied Physics</i> , 2021, 130, .	2.5	4
43	Thermomechanical conversion in high-rate plastic deformation of nanotwinned polycrystalline copper. <i>Journal of Thermal Stresses</i> , 2022, 45, 65-80.	2.0	3
44	Key role of interaction between dislocations and hydrogen-vacancy complexes in hydrogen embrittlement of aluminum: discrete dislocation plasticity analysis. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2021, 29, 065003.	2.0	2
45	Thermal effects on interaction of solute atmosphere with a spherical void in three-dimensional elastic solid: Statistical mechanics description with Monte Carlo simulation. <i>International Journal of Solids and Structures</i> , 2021, 229, 111144.	2.7	2
46	Hydrogen effect on the nanohardness in the vicinity of grain boundary: Experiment and theory. <i>Extreme Mechanics Letters</i> , 2021, 48, 101426.	4.1	2
47	Thermomechanical responses in metal films under mechanical shock: A molecular dynamics study. <i>Journal of Thermal Stresses</i> , 2019, 42, 1330-1337.	2.0	1
48	Effect of Hydrogen on Dislocation Nucleation and Motion: Nanoindentation Experiment and Discrete Dislocation Dynamics Simulation. <i>Acta Mechanica Solida Sinica</i> , 0, , 1.	1.9	1