

Hao Zhang

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

120
papers

2,339
citations

26
h-index

41
g-index

122
ext. papers

2,850
ext. citations

4.9
avg, IF

5.39
L-index

#	Paper	IF	Citations
120	Grain boundaries exhibit the dynamics of glass-forming liquids. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2009 , 106, 7735-40	11.5	141
119	Computer simulation of the elastically driven migration of a flat grain boundary. <i>Acta Materialia</i> , 2004 , 52, 2569-2576	8.4	100
118	Curvature driven grain boundary migration in aluminum: molecular dynamics simulations. <i>Acta Materialia</i> , 2005 , 53, 79-86	8.4	95
117	Role of string-like collective atomic motion on diffusion and structural relaxation in glass forming Cu-Zr alloys. <i>Journal of Chemical Physics</i> , 2015 , 142, 164506	3.9	67
116	String-like cooperative motion in homogeneous melting. <i>Journal of Chemical Physics</i> , 2013 , 138, 12A538	3.9	62
115	Interaction Mechanisms between Air Bubble and Molybdenite Surface: Impact of Solution Salinity and Polymer Adsorption. <i>Langmuir</i> , 2017 , 33, 2353-2361	4	54
114	Characterization of atomic motion governing grain boundary migration. <i>Physical Review B</i> , 2006 , 74,	3.3	53
113	Effects of boundary inclination and boundary type on shear-driven grain boundary migration. <i>Philosophical Magazine</i> , 2008 , 88, 243-256	1.6	51
112	Grain boundary energy and grain growth in Al films: Comparison of experiments and simulations. <i>Scripta Materialia</i> , 2006 , 54, 1059-1063	5.6	51
111	Localization model description of diffusion and structural relaxation in glass-forming CuZr alloys. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2016 , 2016, 054048	1.9	48
110	Wetting at the nanoscale: A molecular dynamics study. <i>Journal of Chemical Physics</i> , 2017 , 146, 114704	3.9	47
109	Temperature-dependent structure evolution in liquid gallium. <i>Acta Materialia</i> , 2017 , 128, 304-312	8.4	44
108	The size-dependent non-localized deformation in a metallic alloy. <i>Scripta Materialia</i> , 2015 , 101, 48-51	5.6	43
107	String-like collective atomic motion in the interfacial dynamics of nanoparticles. <i>Soft Matter</i> , 2010 , 6, 5944	3.6	43
106	Corrosion fatigue crack growth behavior of pipeline steel under underload-type variable amplitude loading schemes. <i>Acta Materialia</i> , 2015 , 96, 159-169	8.4	42
105	Stabilization mechanism and chemical demulsification of water-in-oil and oil-in-water emulsions in petroleum industry: A review. <i>Fuel</i> , 2021 , 286, 119390	7.1	42
104	Simulation and analysis of the migration mechanism of Σ tilt grain boundaries in an fcc metal. <i>Acta Materialia</i> , 2006 , 54, 623-633	8.4	41

103	On the critical thickness for non-localized to localized plastic flow transition in metallic glasses: A molecular dynamics study. <i>Scripta Materialia</i> , 2016 , 114, 93-97	5.6	38
102	Atomic motion during the migration of general [0 0 1] tilt grain boundaries in Ni. <i>Acta Materialia</i> , 2007 , 55, 4527-4533	8.4	37
101	Probing Surface Interactions of Electrochemically Active Galena Mineral Surface Using Atomic Force Microscopy. <i>Journal of Physical Chemistry C</i> , 2016 , 120, 22433-22442	3.8	36
100	Mapping the Nanoscale Heterogeneity of Surface Hydrophobicity on the Sphalerite Mineral. <i>Journal of Physical Chemistry C</i> , 2017 , 121, 5620-5628	3.8	34
99	Mobility of Σ tilt grain boundaries: Inclination dependence. <i>Scripta Materialia</i> , 2005 , 52, 1193-1198	5.6	34
98	Selective flotation separation of molybdenite and talc by humic substances. <i>Minerals Engineering</i> , 2018 , 117, 34-41	4.9	34
97	Self-Assembled Mesoporous Carbon Nitride with Tunable Texture for Enhanced Visible-Light Photocatalytic Hydrogen Evolution. <i>ACS Sustainable Chemistry and Engineering</i> , 2018 , 6, 8291-8299	8.3	32
96	Interfacial free energy controlling glass-forming ability of Cu-Zr alloys. <i>Scientific Reports</i> , 2014 , 4, 5167	4.9	29
95	Non-localized deformation in Cu Zr multi-layer amorphous films under tension. <i>Journal of Alloys and Compounds</i> , 2016 , 678, 410-420	5.7	29
94	A size-dependent structural evolution of ZnS nanoparticles. <i>Scientific Reports</i> , 2015 , 5, 14267	4.9	26
93	Plastic deformation of nanocrystalline aluminum at high temperatures and strain rate. <i>Acta Materialia</i> , 2010 , 58, 2176-2185	8.4	26
92	Properties and determination of the interface stiffness. <i>Acta Materialia</i> , 2007 , 55, 467-471	8.4	26
91	String-like collective atomic motion in the melting and freezing of nanoparticles. <i>Journal of Physical Chemistry B</i> , 2011 , 115, 14068-76	3.4	25
90	Deformation behavior of metallic glasses with shear band like atomic structure: a molecular dynamics study. <i>Scientific Reports</i> , 2016 , 6, 30935	4.9	24
89	Glassy Interfacial Dynamics of Ni Nanoparticles: Part I Colored Noise, Dynamic Heterogeneity and Collective Atomic Motion. <i>Soft Matter</i> , 2013 , 9, 1254-1265	3.6	24
88	Grain boundary self-diffusion in Ni: Effect of boundary inclination. <i>Journal of Materials Research</i> , 2005 , 20, 1146-1153	2.5	24
87	Effect of annealing treatment on mechanical properties of nanocrystalline β Iron: an atomistic study. <i>Scientific Reports</i> , 2015 , 5, 8459	4.9	23
86	Atomistic simulation of hydrogen-assisted ductile-to-brittle transition in β Iron. <i>Computational Materials Science</i> , 2017 , 127, 211-221	3.2	23

85	Single-atomic Pt sites anchored on defective TiO ₂ nanosheets as a superior photocatalyst for hydrogen evolution. <i>Journal of Energy Chemistry</i> , 2021 , 62, 1-10	12	23
84	Atomistic study of hydrogen embrittlement during cyclic loading: Quantitative model of hydrogen accumulation effects. <i>International Journal of Hydrogen Energy</i> , 2017 , 42, 4571-4578	6.7	22
83	Influence of string-like cooperative atomic motion on surface diffusion in the (110) interfacial region of crystalline Ni. <i>Journal of Chemical Physics</i> , 2015 , 142, 084704	3.9	22
82	Atomic picture of elastic deformation in a metallic glass. <i>Scientific Reports</i> , 2015 , 5, 9184	4.9	21
81	Anisotropic Polymer Adsorption on Molybdenite Basal and Edge Surfaces and Interaction Mechanism With Air Bubbles. <i>Frontiers in Chemistry</i> , 2018 , 6, 361	5	21
80	Superionic UO: A model anharmonic crystalline material. <i>Journal of Chemical Physics</i> , 2019 , 150, 174506	3.9	19
79	Glassy Interfacial Dynamics of Ni Nanoparticles: Part II Discrete Breathers as an Explanation of Two-Level Energy Fluctuations. <i>Soft Matter</i> , 2013 , 9, 1266-1280	3.6	19
78	Prediction of crack propagation under cyclic loading based on hydrogen diffusion. <i>Materials Letters</i> , 2015 , 152, 86-89	3.3	19
77	Effects of grain boundary and boundary inclination on hydrogen diffusion in α -iron. <i>Journal of Materials Research</i> , 2011 , 26, 2735-2743	2.5	19
76	Defect generation in nano-twinned, nano-grained and single crystal Cu systems caused by wear: A molecular dynamics study. <i>Scripta Materialia</i> , 2010 , 63, 1116-1119	5.6	19
75	Size-dependent deformation mechanisms in hollow silicon nanoparticles. <i>AIP Advances</i> , 2015 , 5, 077162	1.5	18
74	String-like collective motion and diffusion in the interfacial region of ice. <i>Journal of Chemical Physics</i> , 2017 , 147, 194508	3.9	17
73	Hydrogen hardening effect in heavily deformed single crystal Fe. <i>Computational Materials Science</i> , 2011 ,	3.2	17
72	Role of molecular architecture in the modulation of hydrophobic interactions. <i>Current Opinion in Colloid and Interface Science</i> , 2020 , 47, 58-69	7.6	17
71	Probing the Reversible Fe ³⁺ /DOPA-Mediated Bridging Interaction in Mussel Foot Protein-1. <i>Journal of Physical Chemistry C</i> , 2016 , 120, 21670-21677	3.8	17
70	Universal nature of dynamic heterogeneity in glass-forming liquids: A comparative study of metallic and polymeric glass-forming liquids. <i>Journal of Chemical Physics</i> , 2019 , 151, 184503	3.9	17
69	Size distribution of shear transformation zones and their evolution towards the formation of shear bands in metallic glasses. <i>Journal of Non-Crystalline Solids</i> , 2016 , 445-446, 61-68	3.9	16
68	Origin and nature of spontaneous shape fluctuations in "small" nanoparticles. <i>ACS Nano</i> , 2014 , 8, 7465-7476	7.7	15

67	Effects of misorientation and inclination on mechanical response of <1 1 0> tilt grain boundaries in Fe to external stresses. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2014 , 22, 065016	2	15
66	Local piezoelectric response of ZnO nanoparticles embedded in a photosensitive polymer. <i>Physica Status Solidi - Rapid Research Letters</i> , 2012 , 6, 77-79	2.5	15
65	A size effect in grain boundary migration: A molecular dynamics study of bicrystal thin films. <i>Acta Materialia</i> , 2005 , 53, 5273-5279	8.4	14
64	Structural evolution and atomic dynamics in Ni-Nb metallic glasses: A molecular dynamics study. <i>Journal of Chemical Physics</i> , 2017 , 147, 144503	3.9	13
63	Probing interactions between sphalerite and hydrophobic/hydrophilic surfaces: Effect of water chemistry. <i>Powder Technology</i> , 2017 , 320, 511-518	5.2	13
62	Coacervation-driven instant paintable underwater adhesives with tunable optical and electrochromic properties. <i>Journal of Materials Chemistry A</i> , 2021 , 9, 12988-13000	13	13
61	Effects of Thickness and Adsorption of Airborne Hydrocarbons on Wetting Properties of MoS ₂ : An Atomistic Simulation Study. <i>Journal of Physical Chemistry C</i> , 2018 , 122, 6737-6747	3.8	12
60	Molecular dynamics study on structure evolution of monocarboxylic acid intercalated layered double hydroxides. <i>RSC Advances</i> , 2016 , 6, 98804-98811	3.7	12
59	A Novel Method to Improve Crystallinity of Supported Nanoparticles Using Low Melting Point Metals. <i>Journal of Physical Chemistry C</i> , 2011 , 115, 14591-14597	3.8	12
58	On the atomistic mechanisms of grain boundary migration in [001] twist boundaries: Molecular dynamics simulations. <i>Computational Materials Science</i> , 2010 , 48, 773-782	3.2	12
57	A closer look at the local responses of twin and grain boundaries in Cu to stress at the nanoscale with possible transition from the P _{II} to the inverse P _{II} relation. <i>Acta Materialia</i> , 2010 , 58, 2677-2684	8.4	12
56	Surface interaction mechanisms in mineral flotation: Fundamentals, measurements, and perspectives. <i>Advances in Colloid and Interface Science</i> , 2021 , 295, 102491	14.3	12
55	Molecular dynamics simulation of Bauschinger's effect in deformed copper single crystal in different strain ranges. <i>Journal of Applied Physics</i> , 2011 , 110, 124911	2.5	11
54	Comparative Study of the Collective Dynamics of Proteins and Inorganic Nanoparticles. <i>Scientific Reports</i> , 2017 , 7, 41671	4.9	10
53	High pH stress corrosion cracking initiation and crack evolution in buried steel pipelines: A review. <i>Engineering Failure Analysis</i> , 2021 , 120, 105013	3.2	10
52	Localization model description of diffusion and structural relaxation in superionic crystalline UO ₂ . <i>Journal of Chemical Physics</i> , 2019 , 151, 071101	3.9	9
51	Structural Evolutions of ZnS Nanoparticles in Hydrated and Bare States. <i>Journal of Physical Chemistry C</i> , 2016 , 120, 7870-7884	3.8	9
50	Influence of Nanotwin Boundary on the Bauschinger's Effect in Cu: A Molecular Dynamics Simulation Study. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2013 , 44, 4207-4217	2.3	9

49	Size effect on atomic structure in low-dimensional Cu-Zr amorphous systems. <i>Scientific Reports</i> , 2017 , 7, 7291	4.9	9
48	Effects of Location of Twin Boundaries and Grain Size on Plastic Deformation of Nanocrystalline Copper. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2012 , 43, 3547-3555	2.3	9
47	Atomistic simulation of sliding of [101 $\bar{0}$] tilt grain boundaries in Mg. <i>Journal of Materials Research</i> , 2009 , 24, 3446-3453	2.5	9
46	Coacervate-Based Instant and Repeatable Underwater Adhesive with Anticancer and Antibacterial Properties. <i>ACS Applied Materials & Interfaces</i> , 2021 , 13, 48239-48251	9.5	9
45	Fast dynamics in a model metallic glass-forming material. <i>Journal of Chemical Physics</i> , 2021 , 154, 084505	3.9	9
44	Hydrogen inhibited phase transition near crack tip – An atomistic mechanism of hydrogen embrittlement. <i>International Journal of Hydrogen Energy</i> , 2019 , 44, 17146-17153	6.7	8
43	Atomistic deformation mechanisms in twinned copper nanospheres. <i>Nanoscale Research Letters</i> , 2014 , 9, 335	5	8
42	Effects of nano-scale grain boundaries in Cu on its Bauschinger's effect and response to cyclic deformation. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2013 , 583, 140-150	5.3	8
41	Determination of grain boundary stiffness from molecular dynamics simulation. <i>Applied Physics Letters</i> , 2006 , 88, 121927	3.4	8
40	Localization model description of the interfacial dynamics of crystalline Cu and CuZr metallic glass films. <i>Journal of Chemical Physics</i> , 2020 , 153, 124508	3.9	8
39	Study of Thermal Stability of Hydrotalcite and Carbon Dioxide Adsorption Behavior on Hydrotalcite-Derived Mixed Oxides Using Atomistic Simulations. <i>ACS Omega</i> , 2018 , 3, 12041-12051	3.9	8
38	Mechanistic Understanding and Nanomechanics of Multiple Hydrogen-Bonding Interactions in Aqueous Environment. <i>Journal of Physical Chemistry C</i> , 2019 , 123, 4540-4548	3.8	7
37	Atomistic simulation of Cu β precipitates hardening in α -Fe. <i>Journal Physics D: Applied Physics</i> , 2015 , 48, 115302	3	7
36	A comparison of different empirical potentials in ZnS. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2014 , 22, 085014	2	7
35	Molecular dynamics simulation of cluster beam Al deposition on Si (100) substrate. <i>Nuclear Instruments & Methods in Physics Research B</i> , 2000 , 160, 372-376	1.2	7
34	Dynamic heterogeneity, cooperative motion, and Johari-Goldstein [Formula: see text]-relaxation in a metallic glass-forming material exhibiting a fragile-to-strong transition. <i>European Physical Journal E</i> , 2021 , 44, 56	1.5	7
33	Nanomechanical Insights into Versatile Polydopamine Wet Adhesive Interacting with Liquid-Infused and Solid Slippery Surfaces. <i>ACS Applied Materials & Interfaces</i> , 2021 , 13, 6941-6950	9.5	7
32	Size-dependent concentrations of thermal vacancies in solid films. <i>Physical Chemistry Chemical Physics</i> , 2016 , 18, 22661-7	3.6	6

31	Hydrogen diffusion and vacancy clusterization in iron. <i>International Journal of Hydrogen Energy</i> , 2018 , 43, 15378-15385	6.7	6
30	Quantification of Temperature Dependence of Hydrogen Embrittlement in Pipeline Steel. <i>Materials</i> , 2019 , 12,	3.5	6
29	Comparative investigation of a newly optimized modified embedded atom method potential with other potentials for silicon. <i>Computational Materials Science</i> , 2015 , 109, 277-286	3.2	5
28	Recent advances in bubble-based technologies: Underlying interaction mechanisms and applications. <i>Applied Physics Reviews</i> , 2021 , 8, 011315	17.3	5
27	Effects of load interactions on the onset of stage two of high pH stress corrosion cracking. <i>Journal of Pipeline Science and Engineering</i> , 2021 , 1, 122-136		5
26	A Sensitive Ammonia Sensor Using Long Period Fiber Grating Coated With Graphene Oxide/Cellulose Acetate. <i>IEEE Sensors Journal</i> , 2021 , 21, 16691-16700	4	5
25	Stretchable, compressible, and conductive hydrogel for sensitive wearable soft sensors.. <i>Journal of Colloid and Interface Science</i> , 2022 , 618, 111-120	9.3	5
24	Bulk and surface properties of gypsum: A comparison between classical force fields and dispersion-corrected DFT calculations. <i>Computational Materials Science</i> , 2019 , 164, 8-16	3.2	4
23	Effects of Loading Spectra on High pH Crack Growth Behavior of X65 Pipeline Steel. <i>Corrosion</i> , 2020 , 76, 601-615	1.8	4
22	Anisotropic Deformation in the Compressions of Single Crystalline Copper Nanoparticles. <i>Crystals</i> , 2018 , 8, 116	2.3	4
21	Deposition of an energetic Al cluster on Si(111) substrate: a molecular dynamics simulation. <i>Modelling and Simulation in Materials Science and Engineering</i> , 1998 , 6, 709-716	2	4
20	Ultrasound driven aggregation: A novel method to assemble ceramic nanoparticles. <i>Extreme Mechanics Letters</i> , 2016 , 7, 71-77	3.9	4
19	Development of a second-nearest-neighbor modified embedded atom method potential for silicon-phosphorus binary system. <i>Computational Materials Science</i> , 2016 , 120, 1-12	3.2	4
18	Molecular Dynamics Studies of Hydrogen Effect on Intergranular Fracture in α -Iron. <i>Materials</i> , 2020 , 13,	3.5	3
17	Molecular Dynamics Study of the Role of Water in the Carbon Dioxide Intercalation in Chloride Ions Bearing Hydrotalcite. <i>Journal of Physical Chemistry C</i> , 2018 , 122, 9507-9514	3.8	3
16	Microbubble-Enhanced Cell Membrane Permeability in High Gravity Field. <i>Cellular and Molecular Bioengineering</i> , 2013 , 6, 266-278	3.9	3
15	Similarities of the Collective Interfacial Dynamics of Grain Boundaries and Nanoparticles to Glass-Forming Liquids. <i>Advances in Chemical Physics</i> , 2013 , 519-567		3
14	Structure and CO ₂ physisorption capacity of hydrotalcite-derived oxide. <i>Journal of CO₂ Utilization</i> , 2020 , 36, 64-75	7.6	3

13	Probing the Interactions between Pickering Emulsion Droplets Stabilized with pH-Responsive Nanoparticles. <i>Journal of Physical Chemistry B</i> , 2021 , 125, 7320-7331	3.4	3
12	High pH Crack Growth Sensitivity to Underload-Type of Pressure Fluctuations 2018 ,		3
11	Vacancy enhanced formation and phase transition of Cu-rich precipitates in β iron under neutron irradiation. <i>AIP Advances</i> , 2016 , 6, 045004	1.5	2
10	Topological correlations of grain faces in polycrystal with experimental verification. <i>Europhysics Letters</i> , 2013 , 104, 56006	1.6	2
9	Design of high T g Zr-based metallic glasses using atomistic simulation and experiment. <i>Philosophical Magazine</i> , 2011 , 91, 3393-3405	1.6	2
8	Localization model description of the interfacial dynamics of crystalline Cu and [Formula: see text] metallic glass nanoparticles. <i>European Physical Journal E</i> , 2021 , 44, 33	1.5	2
7	Warm hydrogen direct adsorptive separation and purification with highly CO/H ₂ S-tolerant rare earth alloys. <i>Applications in Energy and Combustion Science</i> , 2020 , 1-4, 100004	0.8	1
6	Crack Growth Sensitivity to the Magnitude and Frequency of Load Fluctuation in Stage 1b of High-pH Stress Corrosion Cracking. <i>Corrosion</i> , 2021 , 77, 618-631	1.8	1
5	Unraveling the Interaction of Water-in-Oil Emulsion Droplets via Molecular Simulations and Surface Force Measurements. <i>Journal of Physical Chemistry B</i> , 2021 , 125, 7556-7567	3.4	1
4	Surface compressive and softening effect on deformation mode transition in Ni-Nb metallic glassy thin films: A molecular dynamics study. <i>Journal of Applied Physics</i> , 2018 , 124, 205304	2.5	1
3	Flame normalizing-induced robust and oriented metallic layer for stable Zn anode. <i>Chemical Engineering Journal</i> , 2022 , 437, 135246	14.7	1
2	The initiation of shear band formation in deformed metallic glasses from soft localized domains. <i>Journal of Chemical Physics</i> , 2021 , 155, 204504	3.9	0
1	Interactions of model airborne particulate matter with dipalmitoyl phosphatidylcholine and a clinical surfactant Calsurf. <i>Journal of Colloid and Interface Science</i> , 2022 , 607, 1993-2009	9.3	0