Hao Zhang

List of Publications by Year in Descending Order

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	Interactions of model airborne particulate matter with dipalmitoyl phosphatidylcholine and a clinical surfactant Calsurf. *Journal of Colloid and Interface Science*, **2022**, 607, 1993-2009	9.3	0
119	Flame normalizing-induced robust and oriented metallic layer for stable Zn anode. *Chemical Engineering Journal*, **2022**, 437, 135246	14.7	1
118	Stretchable, compressible, and conductive hydrogel for sensitive wearable soft sensors.. *Journal of Colloid and Interface Science*, **2022**, 618, 111-120	9.3	5
117	The initiation of shear band formation in deformed metallic glasses from soft localized domains. *Journal of Chemical Physics*, **2021**, 155, 204504	3.9	0
116	Coacervate-Based Instant and Repeatable Underwater Adhesive with Anticancer and Antibacterial Properties. *ACS Applied Materials & Interfaces*, **2021**, 13, 48239-48251	9.5	9
115	Recent advances in bubble-based technologies: Underlying interaction mechanisms and applications. *Applied Physics Reviews*, **2021**, 8, 011315	17.3	5
114	Effects of load interactions on the onset of stage two of high pH stress corrosion cracking. *Journal of Pipeline Science and Engineering*, **2021**, 1, 122-136		5
113	Crack Growth Sensitivity to the Magnitude and Frequency of Load Fluctuation in Stage 1b of High-pH Stress Corrosion Cracking. *Corrosion*, **2021**, 77, 618-631	1.8	1
112	Dynamic heterogeneity, cooperative motion, and Johari-Goldstein [Formula: see text]-relaxation in a metallic glass-forming material exhibiting a fragile-to-strong transition. *European Physical Journal E*, **2021**, 44, 56	1.5	7
111	Probing the Interactions between Pickering Emulsion Droplets Stabilized with pH-Responsive Nanoparticles. *Journal of Physical Chemistry B*, **2021**, 125, 7320-7331	3.4	3
110	Unraveling the Interaction of Water-in-Oil Emulsion Droplets via Molecular Simulations and Surface Force Measurements. *Journal of Physical Chemistry B*, **2021**, 125, 7556-7567	3.4	1
109	High pH stress corrosion cracking initiation and crack evolution in buried steel pipelines: A review. *Engineering Failure Analysis*, **2021**, 120, 105013	3.2	10
108	Stabilization mechanism and chemical demulsification of water-in-oil and oil-in-water emulsions in petroleum industry: A review. *Fuel*, **2021**, 286, 119390	7.1	42
107	Coacervation-driven instant paintable underwater adhesives with tunable optical and electrochromic properties. *Journal of Materials Chemistry A*, **2021**, 9, 12988-13000	13	13
106	Nanomechanical Insights into Versatile Polydopamine Wet Adhesive Interacting with Liquid-Infused and Solid Slippery Surfaces. *ACS Applied Materials & Interfaces*, **2021**, 13, 6941-6950	9.5	7
105	Fast dynamics in a model metallic glass-forming material. *Journal of Chemical Physics*, **2021**, 154, 084505	3.9	9
104	Localization model description of the interfacial dynamics of crystalline Cu and [Formula: see text] metallic glass nanoparticles. *European Physical Journal E*, **2021**, 44, 33	1.5	2

103	A Sensitive Ammonia Sensor Using Long Period Fiber Grating Coated With Graphene Oxide/Cellulose Acetate. *IEEE Sensors Journal*, **2021**, 21, 16691-16700	4	5
102	Surface interaction mechanisms in mineral flotation: Fundamentals, measurements, and perspectives. *Advances in Colloid and Interface Science*, **2021**, 295, 102491	14.3	12
101	Single-atomic Pt sites anchored on defective TiO2 nanosheets as a superior photocatalyst for hydrogen evolution. *Journal of Energy Chemistry*, **2021**, 62, 1-10	12	23
100	Warm hydrogen direct adsorptive separation and purification with highly CO/H2S-tolerant rare earth alloys. *Applications in Energy and Combustion Science*, **2020**, 1-4, 100004	0.8	1
99	Molecular Dynamics Studies of Hydrogen Effect on Intergranular Fracture in -Iron. *Materials*, **2020**, 13,	3.5	3
98	Effects of Loading Spectra on High pH Crack Growth Behavior of X65 Pipeline Steel. *Corrosion*, **2020**, 76, 601-615	1.8	4
97	Role of molecular architecture in the modulation of hydrophobic interactions. *Current Opinion in Colloid and Interface Science*, **2020**, 47, 58-69	7.6	17
96	Structure and CO2 physisorption capacity of hydrotalcite-derived oxide. *Journal of CO2 Utilization*, **2020**, 36, 64-75	7.6	3
95	Localization model description of the interfacial dynamics of crystalline Cu and CuZr metallic glass films. *Journal of Chemical Physics*, **2020**, 153, 124508	3.9	8
94	Localization model description of diffusion and structural relaxation in superionic crystalline UO. *Journal of Chemical Physics*, **2019**, 151, 071101	3.9	9
93	Mechanistic Understanding and Nanomechanics of Multiple Hydrogen-Bonding Interactions in Aqueous Environment. *Journal of Physical Chemistry C*, **2019**, 123, 4540-4548	3.8	7
92	Superionic UO: A model anharmonic crystalline material. *Journal of Chemical Physics*, **2019**, 150, 174506	3.9	19
91	Hydrogen inhibited phase transition near crack tip An atomistic mechanism of hydrogen embrittlement. *International Journal of Hydrogen Energy*, **2019**, 44, 17146-17153	6.7	8
90	Bulk and surface properties of gypsum: A comparison between classical force fields and dispersion-corrected DFT calculations. *Computational Materials Science*, **2019**, 164, 8-16	3.2	4
89	Quantification of Temperature Dependence of Hydrogen Embrittlement in Pipeline Steel. *Materials*, **2019**, 12,	3.5	6
88	Universal nature of dynamic heterogeneity in glass-forming liquids: A comparative study of metallic and polymeric glass-forming liquids. *Journal of Chemical Physics*, **2019**, 151, 184503	3.9	17
87	Molecular Dynamics Study of the Role of Water in the Carbon Dioxide Intercalation in Chloride Ions Bearing Hydrotalcite. *Journal of Physical Chemistry C*, **2018**, 122, 9507-9514	3.8	3
86	Effects of Thickness and Adsorption of Airborne Hydrocarbons on Wetting Properties of MoS2: An Atomistic Simulation Study. *Journal of Physical Chemistry C*, **2018**, 122, 6737-6747	3.8	12

85	Hydrogen diffusion and vacancy clusterization in iron. *International Journal of Hydrogen Energy*, **2018**, 43, 15378-15385	6.7	6
84	Anisotropic Deformation in the Compressions of Single Crystalline Copper Nanoparticles. *Crystals*, **2018**, 8, 116	2.3	4
83	Selective flotation separation of molybdenite and talc by humic substances. *Minerals Engineering*, **2018**, 117, 34-41	4.9	34
82	High pH Crack Growth Sensitivity to Underload-Type of Pressure Fluctuations **2018**,		3
81	Surface compressive and softening effect on deformation mode transition in Ni-Nb metallic glassy thin films: A molecular dynamics study. *Journal of Applied Physics*, **2018**, 124, 205304	2.5	1
80	Study of Thermal Stability of Hydrotalcite and Carbon Dioxide Adsorption Behavior on Hydrotalcite-Derived Mixed Oxides Using Atomistic Simulations. *ACS Omega*, **2018**, 3, 12041-12051	3.9	8
79	Anisotropic Polymer Adsorption on Molybdenite Basal and Edge Surfaces and Interaction Mechanism With Air Bubbles. *Frontiers in Chemistry*, **2018**, 6, 361	5	21
78	Self-Assembled Mesoporous Carbon Nitride with Tunable Texture for Enhanced Visible-Light Photocatalytic Hydrogen Evolution. *ACS Sustainable Chemistry and Engineering*, **2018**, 6, 8291-8299	8.3	32
77	Mapping the Nanoscale Heterogeneity of Surface Hydrophobicity on the Sphalerite Mineral. *Journal of Physical Chemistry C*, **2017**, 121, 5620-5628	3.8	34
76	Temperature-dependent structure evolution in liquid gallium. *Acta Materialia*, **2017**, 128, 304-312	8.4	44
75	Atomistic study of hydrogen embrittlement during cyclic loading: Quantitative model of hydrogen accumulation effects. *International Journal of Hydrogen Energy*, **2017**, 42, 4571-4578	6.7	22
74	Comparative Study of the Collective Dynamics of Proteins and Inorganic Nanoparticles. *Scientific Reports*, **2017**, 7, 41671	4.9	10
73	Interaction Mechanisms between Air Bubble and Molybdenite Surface: Impact of Solution Salinity and Polymer Adsorption. *Langmuir*, **2017**, 33, 2353-2361	4	54
72	Wetting at the nanoscale: A molecular dynamics study. *Journal of Chemical Physics*, **2017**, 146, 114704	3.9	47
71	Structural evolution and atomic dynamics in Ni-Nb metallic glasses: A molecular dynamics study. *Journal of Chemical Physics*, **2017**, 147, 144503	3.9	13
70	Probing interactions between sphalerite and hydrophobic/hydrophilic surfaces: Effect of water chemistry. *Powder Technology*, **2017**, 320, 511-518	5.2	13
69	Size effect on atomic structure in low-dimensional Cu-Zr amorphous systems. *Scientific Reports*, **2017**, 7, 7291	4.9	9
68	String-like collective motion and diffusion in the interfacial region of ice. *Journal of Chemical Physics*, **2017**, 147, 194508	3.9	17

67	Atomistic simulation of hydrogen-assisted ductile-to-brittle transition in □ron. *Computational Materials Science*, **2017**, 127, 211-221	3.2	23
66	Molecular dynamics study on structure evolution of monocarboxylic acid intercalated layered double hydroxides. *RSC Advances*, **2016**, 6, 98804-98811	3.7	12
65	Deformation behavior of metallic glasses with shear band like atomic structure: a molecular dynamics study. *Scientific Reports*, **2016**, 6, 30935	4.9	24
64	Size-dependent concentrations of thermal vacancies in solid films. *Physical Chemistry Chemical Physics*, **2016**, 18, 22661-7	3.6	6
63	Vacancy enhanced formation and phase transition of Cu-rich precipitates in □ iron under neutron irradiation. *AIP Advances*, **2016**, 6, 045004	1.5	2
62	Size distribution of shear transformation zones and their evolution towards the formation of shear bands in metallic glasses. *Journal of Non-Crystalline Solids*, **2016**, 445-446, 61-68	3.9	16
61	Localization model description of diffusion and structural relaxation in glass-forming Cu□r alloys. *Journal of Statistical Mechanics: Theory and Experiment*, **2016**, 2016, 054048	1.9	48
60	Structural Evolutions of ZnS Nanoparticles in Hydrated and Bare States. *Journal of Physical Chemistry C*, **2016**, 120, 7870-7884	3.8	9
59	On the critical thickness for non-localized to localized plastic flow transition in metallic glasses: A molecular dynamics study. *Scripta Materialia*, **2016**, 114, 93-97	5.6	38
58	Non-localized deformation in Cu Zr multi-layer amorphous films under tension. *Journal of Alloys and Compounds*, **2016**, 678, 410-420	5.7	29
57	Ultrasound driven aggregation□A novel method to assemble ceramic nanoparticles. *Extreme Mechanics Letters*, **2016**, 7, 71-77	3.9	4
56	Development of a second-nearest-neighbor modified embedded atom method potential for silicon□phosphorus binary system. *Computational Materials Science*, **2016**, 120, 1-12	3.2	4
55	Probing the Reversible Fe3+□DOPA-Mediated Bridging Interaction in Mussel Foot Protein-1. *Journal of Physical Chemistry C*, **2016**, 120, 21670-21677	3.8	17
54	Probing Surface Interactions of Electrochemically Active Galena Mineral Surface Using Atomic Force Microscopy. *Journal of Physical Chemistry C*, **2016**, 120, 22433-22442	3.8	36
53	Atomistic simulation of Cu□Ni precipitates hardening in□ron. *Journal Physics D: Applied Physics*, **2015**, 48, 115302	3	7
52	Comparative investigation of a newly optimized modified embedded atom method potential with other potentials for silicon. *Computational Materials Science*, **2015**, 109, 277-286	3.2	5
51	Corrosion fatigue crack growth behavior of pipeline steel under underload-type variable amplitude loading schemes. *Acta Materialia*, **2015**, 96, 159-169	8.4	42
50	Atomic picture of elastic deformation in a metallic glass. *Scientific Reports*, **2015**, 5, 9184	4.9	21

49	The size-dependent non-localized deformation in a metallic alloy. *Scripta Materialia*, **2015**, 101, 48-51	5.6	43
48	Effect of annealing treatment on mechanical properties of nanocrystalline □ron: an atomistic study. *Scientific Reports*, **2015**, 5, 8459	4.9	23
47	Influence of string-like cooperative atomic motion on surface diffusion in the (110) interfacial region of crystalline Ni. *Journal of Chemical Physics*, **2015**, 142, 084704	3.9	22
46	Role of string-like collective atomic motion on diffusion and structural relaxation in glass forming Cu-Zr alloys. *Journal of Chemical Physics*, **2015**, 142, 164506	3.9	67
45	A size-dependent structural evolution of ZnS nanoparticles. *Scientific Reports*, **2015**, 5, 14267	4.9	26
44	Size-dependent deformation mechanisms in hollow silicon nanoparticles. *AIP Advances*, **2015**, 5, 077162	1.5	18
43	Prediction of crack propagation under cyclic loading based on hydrogen diffusion. *Materials Letters*, **2015**, 152, 86-89	3.3	19
42	Interfacial free energy controlling glass-forming ability of Cu-Zr alloys. *Scientific Reports*, **2014**, 4, 5167	4.9	29
41	Atomistic deformation mechanisms in twinned copper nanospheres. *Nanoscale Research Letters*, **2014**, 9, 335	5	8
40	Origin and nature of spontaneous shape fluctuations in "small" nanoparticles. *ACS Nano*, **2014**, 8, 7465-77	16.7	15
39	A comparison of different empirical potentials in ZnS. *Modelling and Simulation in Materials Science and Engineering*, **2014**, 22, 085014	2	7
38	Effects of misorientation and inclination on mechanical response of <1 1 0> tilt grain boundaries in□Fe to external stresses. *Modelling and Simulation in Materials Science and Engineering*, **2014**, 22, 065016	2	15
37	Microbubble-Enhanced Cell Membrane Permeability in High Gravity Field. *Cellular and Molecular Bioengineering*, **2013**, 6, 266-278	3.9	3
36	Effects of nano-scale grain boundaries in Cu on its Bauschinger's effect and response to cyclic deformation. *Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing*, **2013**, 583, 140-150	5.3	8
35	Influence of Nanotwin Boundary on the Bauschinger□ Effect in Cu: A Molecular Dynamics Simulation Study. *Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science*, **2013**, 44, 4207-4217	2.3	9
34	Glassy Interfacial Dynamics of Ni Nanoparticles: Part I Colored Noise, Dynamic Heterogeneity and Collective Atomic Motion. *Soft Matter*, **2013**, 9, 1254-1265	3.6	24
33	Glassy Interfacial Dynamics of Ni Nanoparticles: Part II Discrete Breathers as an Explanation of Two-Level Energy Fluctuations. *Soft Matter*, **2013**, 9, 1266-1280	3.6	19
32	Similarities of the Collective Interfacial Dynamics of Grain Boundaries and Nanoparticles to Glass-Forming Liquids. *Advances in Chemical Physics*, **2013**, 519-567		3

31	String-like cooperative motion in homogeneous melting. *Journal of Chemical Physics*, **2013**, 138, 12A538	3.9	62
30	Topological correlations of grain faces in polycrystal with experimental verification. *Europhysics Letters*, **2013**, 104, 56006	1.6	2
29	Effects of Location of Twin Boundaries and Grain Size on Plastic Deformation of Nanocrystalline Copper. *Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science*, **2012**, 43, 3547-3555	2.3	9
28	Local piezoelectric response of ZnO nanoparticles embedded in a photosensitive polymer. *Physica Status Solidi - Rapid Research Letters*, **2012**, 6, 77-79	2.5	15
27	Hydrogen hardening effect in heavily deformed single crystal □Fe. *Computational Materials Science* , **2011**,	3.2	17
26	A Novel Method to Improve Crystallinity of Supported Nanoparticles Using Low Melting Point Metals. *Journal of Physical Chemistry C*, **2011**, 115, 14591-14597	3.8	12
25	Effects of grain boundary and boundary inclination on hydrogen diffusion in a-iron. *Journal of Materials Research*, **2011**, 26, 2735-2743	2.5	19
24	String-like collective atomic motion in the melting and freezing of nanoparticles. *Journal of Physical Chemistry B*, **2011**, 115, 14068-76	3.4	25
23	Design of high T g Zr-based metallic glasses using atomistic simulation and experiment. *Philosophical Magazine*, **2011**, 91, 3393-3405	1.6	2
22	Molecular dynamics simulation of Bauschinger□ effect in deformed copper single crystal in different strain ranges. *Journal of Applied Physics*, **2011**, 110, 124911	2.5	11
21	On the atomistic mechanisms of grain boundary migration in [001] twist boundaries: Molecular dynamics simulations. *Computational Materials Science*, **2010**, 48, 773-782	3.2	12
20	String-like collective atomic motion in the interfacial dynamics of nanoparticles. *Soft Matter*, **2010**, 6, 5944	3.6	43
19	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□I to the inverse P□I relation. *Acta Materialia*, **2010**, 58, 2677-2684	8.4	12
18	Defect generation in nano-twinned, nano-grained and single crystal Cu systems caused by wear: A molecular dynamics study. *Scripta Materialia*, **2010**, 63, 1116-1119	5.6	19
17	Plastic deformation of nanocrystalline aluminum at high temperatures and strain rate. *Acta Materialia*, **2010**, 58, 2176-2185	8.4	26
16	Grain boundaries exhibit the dynamics of glass-forming liquids. *Proceedings of the National Academy of Sciences of the United States of America*, **2009**, 106, 7735-40	11.5	141
15	Atomistic simulation of sliding of [101□0] tilt grain boundaries in Mg. *Journal of Materials Research*, **2009**, 24, 3446-3453	2.5	9
14	Effects of boundary inclination and boundary type on shear-driven grain boundary migration. *Philosophical Magazine*, **2008**, 88, 243-256	1.6	51

13	Properties and determination of the interface stiffness. *Acta Materialia*, **2007**, 55, 467-471	8.4	26
12	Atomic motion during the migration of general [0 0 1] tilt grain boundaries in Ni. *Acta Materialia*, **2007**, 55, 4527-4533	8.4	37
11	Grain boundary energy and grain growth in Al films: Comparison of experiments and simulations. *Scripta Materialia*, **2006**, 54, 1059-1063	5.6	51
10	Determination of grain boundary stiffness from molecular dynamics simulation. *Applied Physics Letters*, **2006**, 88, 121927	3.4	8
9	Characterization of atomic motion governing grain boundary migration. *Physical Review B*, **2006**, 74,	3.3	53
8	Simulation and analysis of the migration mechanism of Σ5 tilt grain boundaries in an fcc metal. *Acta Materialia*, **2006**, 54, 623-633	8.4	41
7	Curvature driven grain boundary migration in aluminum: molecular dynamics simulations. *Acta Materialia*, **2005**, 53, 79-86	8.4	95
6	A size effect in grain boundary migration: A molecular dynamics study of bicrystal thin films. *Acta Materialia*, **2005**, 53, 5273-5279	8.4	14
5	Mobility of Σ5 tilt grain boundaries: Inclination dependence. *Scripta Materialia*, **2005**, 52, 1193-1198	5.6	34
4	Grain boundary self-diffusion in Ni: Effect of boundary inclination. *Journal of Materials Research*, **2005**, 20, 1146-1153	2.5	24
3	Computer simulation of the elastically driven migration of a flat grain boundary. *Acta Materialia*, **2004**, 52, 2569-2576	8.4	100
2	Molecular dynamics simulation of cluster beam Al deposition on Si (100) substrate. *Nuclear Instruments & Methods in Physics Research B*, **2000**, 160, 372-376	1.2	7
1	Deposition of an energetic Al cluster on Si(111) substrate: a molecular dynamics simulation. *Modelling and Simulation in Materials Science and Engineering*, **1998**, 6, 709-716	2	4