Xuan Zhang

List of Publications by Year
in descending order

114 papers	4,867 citations	76196 40 h-index	110170 64 g-index
132 all docs	132 docs citations	132 times ranked	5331 citing authors

#	Article	IF	Citations
1	Additive manufacturing of 3D nano-architected metals. Nature Communications, 2018, 9, 593.	5.8	372
2	Mechanical properties and deformation mechanisms of gradient nanostructured metals and alloys. Nature Reviews Materials, 2020, 5, 706-723.	23.3	345
3	Ultralight, scalable, and high-temperatureâ€“resilient ceramic nanofiber sponges. Science Advances, 2017, 3, e1603170.	4.7	207
4	High performance polyester reverse osmosis desalination membrane with chlorine resistance. Nature Sustainability, 2021, 4, 138-146.	11.5	185
5	Lightweight, flaw-tolerant, and ultrastrong nanoarchitected carbon. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 6665-6672.	3.3	158
6	Three-Dimensional High-Entropy Alloyâ€“Polymer Composite Nanolattices That Overcome the Strengthâ€“Recoverability Trade-off. Nano Letters, 2018, 18, 4247-4256.	4.5	108
7	Impacting-freezing dynamics of a supercooled water droplet on a cold surface: Rebound and adhesion. International Journal of Heat and Mass Transfer, 2020, 158, 119997.	2.5	100
8	Highly Oxygenated Multifunctional Compounds in Î±-Pinene Secondary Organic Aerosol. Environmental Science & Technology, 2017, 51, 5932-5940.	4.6	93
9	Positively Charged Nanofiltration Membrane with Dendritic Surface for Toxic Element Removal. ACS Sustainable Chemistry and Engineering, 2017, 5, 784-792.	3.2	93
10	Formation of highly oxygenated low-volatility products from cresol oxidation. Atmospheric Chemistry and Physics, 2017, 17, 3453-3474.	1.9	89
11	Self-propelled droplet behavior during condensation on superhydrophobic surfaces. Applied Physics Letters, 2016, 108, .	1.5	84
12	Simulation and experiment on supercooled sessile water droplet freezing with special attention to supercooling and volume expansion effects. International Journal of Heat and Mass Transfer, 2018, 127, 975-985.	2.5	81
13	Theoretical strength and rubber-like behaviour in micro-sized pyrolytic carbon. Nature Nanotechnology, 2019, 14, 762-769.	15.6	80
14	Concentration and Recovery of Dyes from Textile Wastewater Using a Self-Standing, Support-Free Forward Osmosis Membrane. Environmental Science & Technology, 2019, 53, 3078-3086.	4.6	76
15	Influence of seed aerosol surface area and oxidation rate on vapor wall deposition and SOA mass yields: a case study with <i>Î±</i>-pinene ozonolysis. Atmospheric Chemistry and Physics, 2016, 16, 9361-9379.	1.9	75
16	Feasibility of concentrating textile wastewater using a hybrid forward osmosis-membrane distillation (FO-MD) process: Performance and economic evaluation. Water Research, 2020, 172, 115488.	5.3	70
17	Freezing and melting of a sessile water droplet on a horizontal cold plate. Experimental Thermal and Fluid Science, 2017, 88, 1-7.	1.5	68
18	Fractionation and Concentration of High-Salinity Textile Wastewater using an Ultra-Permeable Sulfonated Thin-film Composite. Environmental Science & Technology, 2017, 51, 9252-9260.	4.6	67

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19	Modelling of sessile water droplet shape evolution during freezing with consideration of supercooling effect. Applied Thermal Engineering, 2017, 125, 644-651.	3.0	67
20	Ion mobility spectrometryâ€“mass spectrometry (IMSâ€“MS) for on- and offline analysis of atmospheric gas and aerosol species. Atmospheric Measurement Techniques, 2016, 9, 3245-3262.	1.2	64
21	Poly(2,5-benzimidazole)-Grafted Graphene Oxide as an Effective Proton Conductor for Construction of Nanocomposite Proton Exchange Membrane. ACS Applied Materials & Interfaces, 2017, 9, 33049-33058.	4.0	64
22	Microstructural stability of nanostructured Cu alloys during high-temperature irradiation. Scripta Materialia, 2010, 63, 929-932.	2.6	62
23	Spreading of droplets impacting different wettable surfaces at a Weber number close to zero. Chemical Engineering Science, 2019, 207, 495-503.	1.9	62
24	Design, Fabrication, and Mechanics of 3D Microâ€Nanolattices. Small, 2020, 16, e1902842.	5.2	62
25	Maximum spreading of droplets impacting spherical surfaces. Physics of Fluids, 2019, 31, .	1.6	61
26	SOA formation from the photooxidation ofÂ<i>Î±</i>-pinene: systematic exploration ofÂthe simulation ofÂchamber data. Atmospheric Chemistry and Physics, 2016, 16, 2785-2802.	1.9	60
27	Zwitterionic carbon nanotube assisted thin-film nanocomposite membranes with excellent efficiency for separation of mono/divalent ions from brackish water. Journal of Materials Chemistry A, 2017, 5, 13730-13739.	5.2	58
28	Selective separation membranes for fractionating organics and salts for industrial wastewater treatment: Design strategies and process assessment. Journal of Membrane Science, 2022, 643, 120052.	4.1	53
29	Unified Theory of Vaporâ€“Wall Mass Transport in Teflon-Walled Environmental Chambers. Environmental Science & Technology, 2018, 52, 2134-2142.	4.6	52
30	A Self-Standing, Support-Free Membrane for Forward Osmosis with No Internal Concentration Polarization. Environmental Science and Technology Letters, 2018, 5, 266-271.	3.9	50
31	Shape variation and unique tip formation of a sessile water droplet during freezing. Applied Thermal Engineering, 2019, 147, 927-934.	3.0	50
32	Designing polymeric membranes with coordination chemistry for high-precision ion separations. Science Advances, 2022, 8, eabm9436.	4.7	50
33	Brittle versus ductile fracture mechanism transition in amorphous lithiated silicon: From intrinsic nanoscale cavitation to shear banding. Nano Energy, 2015, 18, 89-96.	8.2	49
34	Energy analysis of droplet jumping induced by multi-droplet coalescence: The influences of droplet number and droplet location. International Journal of Heat and Mass Transfer, 2018, 121, 315-320.	2.5	44
35	Estimating Secondary Organic Aerosol Production from Toluene Photochemistry in a Megacity of China. Environmental Science & Technology, 2019, 53, 8664-8671.	4.6	43
36	Reduced contact time of a droplet impacting on a moving superhydrophobic surface. Applied Physics Letters, 2020, 117, .	1.5	43

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37	Bubble formation in freezing droplets. Physical Review Fluids, 2019, 4, .	1.0	43
38	Controlled nitric oxide production via O(¹D)â€¯+â€¯N₂O reactions for use in oxidation flow reactor studies. Atmospheric Measurement Techniques, 2017, 10, 2283-2298.	1.2	42
39	Boundary Zonal Flow in Rotating Turbulent Rayleigh-BÃ©nard Convection. Physical Review Letters, 2020, 124, 084505.	2.9	42
40	Off-centered droplet impact on single-ridge superhydrophobic surfaces. Experimental Thermal and Fluid Science, 2021, 120, 110245.	1.5	42
41	Buckled Tin Oxide Nanobelt Webs as Highly Stretchable and Transparent Photosensors. Small, 2015, 11, 5712-5718.	5.2	41
42	In situ high-energy X-ray diffraction study of tensile deformation of neutron-irradiated polycrystalline Fe-9%Cr alloy. Acta Materialia, 2017, 126, 67-76.	3.8	41
43	Toward Enhancing the Chlorine Resistance of Reverse Osmosis Membranes: An Effective Strategy via an End-capping Technology. Environmental Science & Technology, 2019, 53, 1296-1304.	4.6	41
44	Droplet re-icing characteristics on a superhydrophobic surface. Applied Physics Letters, 2019, 115, .	1.5	40
45	Fabrication of a Desalination Membrane with Enhanced Microbial Resistance through Vertical Alignment of Graphene Oxide. Environmental Science and Technology Letters, 2018, 5, 614-620.	3.9	37
46	Aircraft icing model considering both rime ice property variability and runback water effect. International Journal of Heat and Mass Transfer, 2017, 104, 510-516.	2.5	36
47	Droplet breakup and rebound during impact on small cylindrical superhydrophobic targets. Physics of Fluids, 2020, 32, .	1.6	34
48	Mixed convection in a horizontal duct with bottom heating and strong transverse magnetic field. Journal of Fluid Mechanics, 2014, 757, 33-56.	1.4	32
49	Droplet impact dynamics on single-pillar superhydrophobic surfaces. Physics of Fluids, 2021, 33, .	1.6	32
50	Development of a near-infrared ratiometric fluorescent probe for glutathione using an intramolecular charge transfer signaling mechanism and its bioimaging application in living cells. Journal of Materials Chemistry B, 2019, 7, 809-814.	2.9	31
51	Green preparation of chlorine-doped graphene and its application in electrochemical sensor for chloramphenicol detection. SN Applied Sciences, 2019, 1, 1.	1.5	31
52	In situ TEM study of G-phase precipitates under heavy ion irradiation in CF8 cast austenitic stainless steel. Journal of Nuclear Materials, 2015, 464, 185-192.	1.3	30
53	Experimental investigation and statistical analysis of icing nucleation characteristics of sessile water droplets. Experimental Thermal and Fluid Science, 2018, 99, 26-34.	1.5	29
54	Effective inhibition of gypsum using an ionâ€“ion selective nanofiltration membrane pretreatment process for seawater desalination. Journal of Membrane Science, 2021, 632, 119358.	4.1	28

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55	Evaporation of a sessile droplet on flat surfaces: An axisymmetric lattice Boltzmann model with consideration of contact angle hysteresis. International Journal of Heat and Mass Transfer, 2021, 178, 121577.	2.5	28
56	A thermally crosslinked multiblock sulfonated poly(arylene ether ketone nitrile) copolymer with a 1,2,3-triazole pendant for proton conducting membranes. Journal of Materials Chemistry A, 2018, 6, 3560-3570.	5.2	27
57	Do acidâ€“base interactions really improve the ion conduction in a proton exchange membrane? â€“ a study on the effect of basic groups. Journal of Materials Chemistry A, 2019, 7, 19820-19830.	5.2	27
58	Electrospun Nanofibrous Polyphenylene Oxide Membranes for High-Salinity Water Desalination by Direct Contact Membrane Distillation. ACS Sustainable Chemistry and Engineering, 2019, 7, 20060-20069.	3.2	27
59	Axial spreading of droplet impact on ridged superhydrophobic surfaces. Journal of Colloid and Interface Science, 2021, 599, 130-139.	5.0	27
60	Precipitation kinetics of dilute Cu-W alloys during low-temperature ion irradiation. Acta Materialia, 2016, 120, 46-55.	3.8	26
61	Supercooled water droplet impacting-freezing behaviors on cold superhydrophobic spheres. International Journal of Multiphase Flow, 2021, 141, 103675.	1.6	26
62	Polymer brush-modified graphene oxide membrane with excellent structural stability for effective fractionation of textile wastewater. Journal of Membrane Science, 2021, 618, 118698.	4.1	25
63	Dynamic behavior and maximum spreading of droplets impacting concave spheres. Physics of Fluids, 2020, 32, .	1.6	24
64	Aspect Ratio Dependence of Heat Transfer in a Cylindrical Rayleigh-BÃ©nard Cell. Physical Review Letters, 2022, 128, 084501.	2.9	23
65	A novel framework for molecular characterization of atmospherically relevant organic compounds based on collision cross section and mass-to-charge ratio. Atmospheric Chemistry and Physics, 2016, 16, 12945-12959.	1.9	22
66	Convection instability in a downward flow in a vertical duct with strong transverse magnetic field. Physics of Fluids, 2018, 30, .	1.6	22
67	Two-dimensional turbulent convection in a toroidal duct of a liquid metal blanket of a fusion reactor. Journal of Fluid Mechanics, 2015, 779, 36-52.	1.4	21
68	Boundary zonal flows in rapidly rotating turbulent thermal convection. Journal of Fluid Mechanics, 2021, 915, .	1.4	21
69	Precipitate stability in Cuâ€“Agâ€“W system under high-temperature irradiation. Acta Materialia, 2015, 97, 348-356.	3.8	20
70	Sub-1 Î¼m Free-Standing Symmetric Membrane for Osmotic Separations. Environmental Science and Technology Letters, 2019, 6, 492-498.	3.9	20
71	A Design Strategy for Mushroom-Shaped Microfibrils With Optimized Dry Adhesion: Experiments and Finite Element Analyses. Journal of Applied Mechanics, Transactions ASME, 2021, 88, .	1.1	20
72	Irradiation-induced selective precipitation in Cuâ€“Nbâ€“W alloys: An approach towards coarsening resistance. Acta Materialia, 2013, 61, 2004-2015.	3.8	19

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73	High-energy synchrotron x-ray techniques for studying irradiated materials. Journal of Materials Research, 2015, 30, 1380-1391.	1.2	19
74	Molecular Origin of the Biologically Accelerated Mineralization of Hydroxyapatite on Bacterial Cellulose for More Robust Nanocomposites. Nano Letters, 2021, 21, 10292-10300.	4.5	19
75	High-energy synchrotron x-ray study of deformation-induced martensitic transformation in a neutron-irradiated Type 316 stainless steel. Acta Materialia, 2020, 200, 315-327.	3.8	18
76	Maximum spreading and energy analysis of ellipsoidal impact droplets. Physics of Fluids, 2021, 33, .	1.6	18
77	Quantifying the nitrogen isotope effects during photochemical equilibrium between NO and NO₂: implications for <i>Î´</i>¹⁵N in tropospheric reactive nitrogen. Atmospheric Chemistry and Physics, 2020, 20, 9805-9819.	1.9	18
78	Size and strain rate effects in tensile strength of penta-twinned Ag nanowires. Acta Mechanica Sinica/Lixue Xuebao, 2017, 33, 792-800.	1.5	17
79	Surface-engineered sulfonation of ion-selective nanofiltration membrane with robust scaling resistance for seawater desalination. Journal of Membrane Science, 2022, 644, 120191.	4.1	17
80	Model for aircraft icing with consideration of property-variable rime ice. International Journal of Heat and Mass Transfer, 2016, 97, 185-190.	2.5	16
81	In-situ high-energy X-ray characterization of neutron irradiated HT-UPS stainless steel under tensile deformation. Acta Materialia, 2018, 156, 330-341.	3.8	16
82	Freezing characteristics of deposited water droplets on hydrophilic and hydrophobic cold surfaces. International Journal of Thermal Sciences, 2022, 171, 107241.	2.6	16
83	Connecting wall modes and boundary zonal flows in rotating Rayleigh-BÃ©nard convection. Physical Review Fluids, 2022, 7, .	1.0	16
84	Molecular characterization of alkyl nitrates in atmospheric aerosols by ion mobility mass spectrometry. Atmospheric Measurement Techniques, 2019, 12, 5535-5545.	1.2	15
85	Graphene oxide nanofiltration membrane with trimethylamine-N-oxide zwitterions for robust biofouling resistance. Journal of Membrane Science, 2021, 640, 119855.	4.1	15
86	iRadMat: A thermo-mechanical testing system for in situ high-energy X-ray characterization of radioactive specimens. Review of Scientific Instruments, 2017, 88, 015111.	0.6	14
87	AÂsteady-state continuous flow chamber for the study of daytime and nighttime chemistry under atmospherically relevant NO levels. Atmospheric Measurement Techniques, 2018, 11, 2537-2551.	1.2	14
88	Irradiation-Induced Nanoprecipitation in Ni-W Alloys. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2015, 46, 1046-1061.	1.1	13
89	Droplet rebound and dripping during impact on small superhydrophobic spheres. Physics of Fluids, 2022, 34, .	1.6	13
90	Direct numerical simulation of evaporating droplets based on a sharp-interface algebraic VOF approach. International Journal of Heat and Mass Transfer, 2022, 184, 122282.	2.5	12

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91	Dynamic behavior and maximum width of impact droplets on single-pillar superhydrophobic surfaces. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2022, 648, 129355.	2.3	11
92	Characterization of neutron-irradiated HT-UPS steel by high-energy X-ray diffraction microscopy. Journal of Nuclear Materials, 2016, 471, 280-288.	1.3	10
93	Meniscus behaviors and capillary pressures in capillary channels having various cross-sectional geometries. Chinese Journal of Chemical Engineering, 2018, 26, 2014-2022.	1.7	10
94	Novel organization of mitochondrial minicircles and guide RNAs in the zoonotic pathogen Trypanosoma lewisi. Nucleic Acids Research, 2020, 48, 9747-9761.	6.5	10
95	Engineering a covalently constructed superomniphobic membrane for robust membrane distillation. Journal of Membrane Science, 2022, 644, 120124.	4.1	10
96	Laser powder bed fusion of Inconel 718 on 316 stainless steel. Additive Manufacturing, 2020, 36, 101500.	1.7	9
97	Unexpected High Contribution of Residential Biomass Burning to Nonâ€Methane Organic Gases (NMOGs) in the Yangtze River Delta Region of China. Journal of Geophysical Research D: Atmospheres, 2022, 127, .	1.2	9
98	Effects of neutron irradiation and post-irradiation annealing on the microstructure of HT-UPS stainless steel. Journal of Nuclear Materials, 2018, 507, 188-197.	1.3	8
99	Generation of zonal flows in convective systems by travelling thermal waves. Journal of Fluid Mechanics, 2021, 913, .	1.4	8
100	A quinoline-based fluorescent chemosensor for palladium ion (Pd2+)-selective detection in aqueous solution. Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy, 2021, 249, 119283.	2.0	8
101	Irradiation-induced formation of nanorod precipitates in a dilute Cuâ€“W alloy. Scripta Materialia, 2016, 115, 155-158.	2.6	7
102	High-energy x-ray diffraction microscopy study of deformation microstructures in neutron-irradiated polycrystalline Fe-9%Cr. Journal of Nuclear Materials, 2018, 508, 556-566.	1.3	7
103	Atomistic simulations of superplasticity and amorphization of nanocrystalline anatase TiO<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" id="mml1" display="inline" overflow="scroll" altimg="si1.gif"><mml:msub><mml:mrow /><mml:mrow><mml:mn>2</mml:mn></mml:mrow></mml:msub></mml:math>. Extreme Mechanics Letters, 2018, 22, 131-137.	2.0	7
104	Thermal convection in a toroidal duct of a liquid metal blanket. Part I. Effect of poloidal magnetic field. Fusion Engineering and Design, 2017, 116, 52-60.	1.0	6
105	Time and Frequency Characteristics of Pressure Fluctuations during Subcooled Nucleate Flow Boiling. Heat Transfer Engineering, 2018, 39, 642-653.	1.2	6
106	Thermal convection in a toroidal duct of a liquid metal blanket. Part II. Effect of axial mean flow. Fusion Engineering and Design, 2017, 116, 40-46.	1.0	5
107	Functional analyses of an axonemal innerâ€arm dynein complex in the bloodstream form of Trypanosoma brucei uncover its essential role in cytokinesis initiation. Molecular Microbiology, 2019, 112, 1718-1730.	1.2	5
108	Cell cycle and cleavage events during in vitro cultivation of bloodstream forms of Trypanosoma lewisi, a zoonotic pathogen. Cell Cycle, 2019, 18, 552-567.	1.3	5

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109	A kinetic Monte Carlo study of coarsening resistance of novel core/shell precipitates. Acta Materialia, 2014, 79, 37-46.	3.8	4
110	Dataâ€driven identification of the spatiotemporal structure of turbulent flows by streaming dynamic mode decomposition. GAMM Mitteilungen, 2022, 45, .	2.7	4
111	Non-equilibrium Grain Boundary Wetting in Cuâ€“Ag Alloys Containing W Nanoparticles. Materials Research Letters, 2016, 4, 22-26.	4.1	3
112	Flow states and heat transport in Rayleighâ€“BÃ©nard convection with different sidewall boundary conditions. Journal of Fluid Mechanics, 2022, 936, .	1.4	3
113	Symmetric forward osmosis membrane coupled with dendritic draw solute: New insights into sustainable properties. Journal of Membrane Science, 2021, 640, 119785.	4.1	2
114	Fracture Toughness and Deformation Behavior of Cast Austenitic Stainless Steels After Thermal Aging. , 2017, , .		0