

Ya-Pu Zhao

List of Publications by Year in descending order

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121
papers

4,121
citations

94433

37
h-index

128289

60
g-index

124
all docs

124
docs citations

124
times ranked

4120
citing authors

#	ARTICLE	IF	CITATIONS
1	Size effect on the coalescence-induced self-propelled droplet. <i>Applied Physics Letters</i> , 2011, 98, .	3.3	210
2	Precursor Film in Dynamic Wetting, Electrowetting, and Electro-Elasto-Capillarity. <i>Physical Review Letters</i> , 2010, 104, 246101.	7.8	191
3	Hydroelectric Voltage Generation Based on Water-Filled Single-Walled Carbon Nanotubes. <i>Journal of the American Chemical Society</i> , 2009, 131, 6374-6376.	13.7	150
4	The size-dependent elastic properties of nanofilms with surface effects. <i>Journal of Applied Physics</i> , 2005, 98, 074306.	2.5	139
5	Influence of van der Waals and Casimir Forces on Electrostatic Torsional Actuators. <i>Journal of Microelectromechanical Systems</i> , 2004, 13, 1027-1035.	2.5	129
6	Molecular dynamics simulations of the enhanced recovery of confined methane with carbon dioxide. <i>Physical Chemistry Chemical Physics</i> , 2015, 17, 31887-31893.	2.8	123
7	Modelling analysis of surface stress on a rectangular cantilever beam. <i>Journal Physics D: Applied Physics</i> , 2004, 37, 2140-2145.	2.8	109
8	Multiscale dynamic wetting of a droplet on a lyophilic pillar-arrayed surface. <i>Journal of Fluid Mechanics</i> , 2013, 716, 171-188.	3.4	101
9	Using graphene to simplify the adsorption of methane on shale in MD simulations. <i>Computational Materials Science</i> , 2017, 133, 99-107.	3.0	97
10	Deformation of PDMS membrane and microcantilever by a water droplet: Comparison between Mooney-Rivlin and linear elastic constitutive models. <i>Journal of Colloid and Interface Science</i> , 2009, 332, 467-476.	9.4	95
11	A phase field model coupling lithium diffusion and stress evolution with crack propagation and application in lithium ion batteries. <i>Physical Chemistry Chemical Physics</i> , 2015, 17, 287-297.	2.8	91
12	Slip boundary conditions based on molecular kinetic theory: The critical shear stress and the energy dissipation at the liquid-solid interface. <i>Soft Matter</i> , 2011, 7, 8628.	2.7	90
13	Experimental and theoretical investigations of evaporation of sessile water droplet on hydrophobic surfaces. <i>Journal of Colloid and Interface Science</i> , 2012, 365, 254-259.	9.4	87
14	A comparative study of Young's modulus of single-walled carbon nanotube by CPMD, MD and first principle simulations. <i>Computational Materials Science</i> , 2009, 46, 621-625.	3.0	84
15	Characterization of pore structure, gas adsorption, and spontaneous imbibition in shale gas reservoirs. <i>Journal of Petroleum Science and Engineering</i> , 2017, 159, 197-204.	4.2	84
16	Suggestion of a new dimensionless number for dynamic plastic response of beams and plates. <i>Archive of Applied Mechanics</i> , 1998, 68, 524-538.	2.2	81
17	Kinetic behaviour of the cells touching substrate: the interfacial stiffness guides cell spreading. <i>Scientific Reports</i> , 2014, 4, 3910.	3.3	75
18	Atomistic simulation on size-dependent yield strength and defects evolution of metal nanowires. <i>Computational Materials Science</i> , 2009, 46, 142-150.	3.0	73

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19	Atomic Mechanisms and Equation of State of Methane Adsorption in Carbon Nanopores. <i>Journal of Physical Chemistry C</i> , 2014, 118, 17737-17744.	3.1	73
20	Elastic deformation of soft membrane with finite thickness induced by a sessile liquid droplet. <i>Journal of Colloid and Interface Science</i> , 2009, 339, 489-494.	9.4	71
21	The head-on colliding process of binary liquid droplets at low velocity: High-speed photography experiments and modeling. <i>Journal of Colloid and Interface Science</i> , 2008, 326, 196-200.	9.4	61
22	Dynamic spreading on pillar-arrayed surfaces: Viscous resistance versus molecular friction. <i>Physics of Fluids</i> , 2014, 26, .	4.0	60
23	Combining Image Recognition and Simulation To Reproduce the Adsorption/Desorption Behaviors of Shale Gas. <i>Energy & Fuels</i> , 2020, 34, 258-269.	5.1	56
24	Contact angle hysteresis at the nanoscale: a molecular dynamics simulation study. <i>Colloid and Polymer Science</i> , 2013, 291, 307-315.	2.1	55
25	Stability and bifurcation behaviour of electrostatic torsional NEMS varactor influenced by dispersion forces. <i>Journal Physics D: Applied Physics</i> , 2007, 40, 1649-1654.	2.8	54
26	Fabrication of Novel Superhydrophobic Surfaces and Droplet Bouncing Behavior " Part 2: Water Droplet Impact Experiment on Superhydrophobic Surfaces Constructed Using ZnO Nanoparticles. <i>Journal of Adhesion Science and Technology</i> , 2011, 25, 93-108.	2.6	54
27	A study of the tribological behavior of carbon-nanotube-reinforced ultrahigh molecular weight polyethylene composites. <i>Surface and Interface Analysis</i> , 2006, 38, 883-886.	1.8	52
28	Electrowetting on curved surfaces. <i>Soft Matter</i> , 2012, 8, 2599.	2.7	51
29	Statics and dynamics of electrowetting on pillar-arrayed surfaces at the nanoscale. <i>Nanoscale</i> , 2015, 7, 2561-2567.	5.6	51
30	Silicon nanowire reinforced by single-walled carbon nanotube and its applications to anti-pulverization electrode in lithium ion battery. <i>Composites Part B: Engineering</i> , 2012, 43, 76-82.	12.0	50
31	Which is the most efficient candidate for the recovery of confined methane: Water, carbon dioxide or nitrogen?. <i>Extreme Mechanics Letters</i> , 2016, 9, 127-138.	4.1	50
32	Phase field modeling of lithium diffusion, finite deformation, stress evolution and crack propagation in lithium ion battery. <i>Extreme Mechanics Letters</i> , 2016, 9, 467-479.	4.1	50
33	Shape effects on the yield stress and deformation of silicon nanowires: A molecular dynamics simulation. <i>Journal of Applied Physics</i> , 2009, 106, .	2.5	47
34	Fabrication of Novel Superhydrophobic Surfaces and Water Droplet Bouncing Behavior " Part 1: Stable ZnO"PDMS Superhydrophobic Surface with Low Hysteresis Constructed Using ZnO Nanoparticles. <i>Journal of Adhesion Science and Technology</i> , 2010, 24, 2693-2705.	2.6	43
35	A diffusion and curvature dependent surface elastic model with application to stress analysis of anode in lithium ion battery. <i>International Journal of Engineering Science</i> , 2012, 61, 156-170.	5.0	43
36	The effect of sharp solid edges on the droplet wettability. <i>Journal of Colloid and Interface Science</i> , 2019, 552, 563-571.	9.4	41

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37	Topology-dominated dynamic wetting of the precursor chain in a hydrophilic interior corner. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2012, 468, 310-322.	2.1	39
38	Adsorption-induced pore blocking and its mechanisms in nanoporous shale due to interactions with supercritical CO ₂ . <i>Journal of Petroleum Science and Engineering</i> , 2019, 178, 74-81.	4.2	38
39	Influence of different amount of Au on the wetting behavior of PDMS membrane. <i>Biomedical Microdevices</i> , 2008, 10, 65-72.	2.8	37
40	Entropy and enthalpy changes during adsorption and displacement of shale gas. <i>Energy</i> , 2021, 221, 119854.	8.8	37
41	An effective method of determining the residual stress gradients in a micro-cantilever. <i>Microsystem Technologies</i> , 2006, 12, 357-364.	2.0	36
42	Phase transitions of a water overlayer on charged graphene: from electromelting to electrofreezing. <i>Nanoscale</i> , 2014, 6, 5432.	5.6	35
43	Experimental study of evaporation of sessile water droplet on PDMS surfaces. <i>Acta Mechanica Sinica/Lixue Xuebao</i> , 2013, 29, 799-805.	3.4	33
44	Wetting and electrowetting on corrugated substrates. <i>Physics of Fluids</i> , 2017, 29, .	4.0	33
45	The Constructions and Pyrolysis of 3D Kerogen Macromolecular Models: Experiments and Simulations. <i>Global Challenges</i> , 2019, 3, 1900006.	3.6	31
46	Piezoelectricity of ZnO Films Prepared by Sol-Gel Method. <i>Chinese Journal of Chemical Physics</i> , 2007, 20, 721-726.	1.3	30
47	Electrowetting on a lotus leaf. <i>Biomicrofluidics</i> , 2009, 3, 22406.	2.4	29
48	The Effects of Roughness on Adhesion Hysteresis. <i>Journal of Adhesion Science and Technology</i> , 2010, 24, 1045-1054.	2.6	29
49	Influence of Damping on the Dynamical Behavior of the Electrostatic Parallel-plate and Torsional Actuators with Intermolecular Forces. <i>Sensors</i> , 2007, 7, 3012-3026.	3.8	28
50	Predicting the components and types of kerogen in shale by combining machine learning with NMR spectra. <i>Fuel</i> , 2021, 290, 120006.	6.4	28
51	An Electrowetting Model for Rough Surfaces Under Low Voltage. <i>Journal of Adhesion Science and Technology</i> , 2008, 22, 217-229.	2.6	26
52	The time-temperature-maturity relationship: A chemical kinetic model of kerogen evolution based on a developed molecule-maturity index. <i>Fuel</i> , 2020, 278, 118264.	6.4	26
53	Squeeze-film effects in MEMS devices with perforated plates for small amplitude vibration. <i>Microsystem Technologies</i> , 2007, 13, 625-633.	2.0	25
54	Negative differential resistance behavior of silicon monatomic chain encapsulated in carbon nanotubes. <i>Computational Materials Science</i> , 2012, 62, 87-92.	3.0	25

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55	Experimental observation of electrical instability of droplets on dielectric layer. Journal Physics D: Applied Physics, 2008, 41, 052004.	2.8	22
56	Combined Effect of Pressure and Shear Stress on Penny-Shaped Fluid-Driven Cracks. Journal of Applied Mechanics, Transactions ASME, 2018, 85, .	2.2	22
57	Dynamics of Dissolutive Wetting: A Molecular Dynamics Study. Langmuir, 2017, 33, 6464-6470.	3.5	21
58	Unstable crack growth in hydraulic fracturing: The combined effects of pressure and shear stress for a power-law fluid. Engineering Fracture Mechanics, 2020, 225, 106245.	4.3	21
59	SIZE-DEPENDENT ELASTIC MODULUS AND FRACTURE TOUGHNESS OF THE NANOFILM WITH SURFACE EFFECTS. Surface Review and Letters, 2008, 15, 599-603.	1.1	20
60	Hybrid QM/MM simulation of the hydration phenomena of dipalmitoylphosphatidylcholine headgroup. Journal of Colloid and Interface Science, 2009, 329, 410-415.	9.4	20
61	Adhesive Contact of Nanowire in Three-Point Bending Test. Journal of Adhesion Science and Technology, 2011, 25, 1107-1129.	2.6	20
62	QM/MM and classical molecular dynamics simulation of histidine-tagged peptide immobilization on nickel surface. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2006, 423, 84-91.	5.6	19
63	SIZE-DEPENDENT ELASTIC PROPERTIES OF Ni NANOFILMS BY MOLECULAR DYNAMICS SIMULATION. Surface Review and Letters, 2007, 14, 661-665.	1.1	19
64	Capillary wave propagation during the delamination of graphene by the precursor films in electro-elasto-capillarity. Scientific Reports, 2012, 2, 927.	3.3	19
65	Structural evolution of the silicon nanowire via molecular dynamics simulations: the double-strand atomic chain and the monatomic chain. Archive of Applied Mechanics, 2015, 85, 323-329.	2.2	18
66	Quasi-Static Crack Growth Under Symmetrical Loads in Hydraulic Fracturing. Journal of Applied Mechanics, Transactions ASME, 2017, 84, .	2.2	18
67	Morphological stability of epitaxial thin elastic films by van der Waals force. Archive of Applied Mechanics, 2002, 72, 77-84.	2.2	17
68	Tensile tests of micro anchors anodically bonded between Pyrex glass and aluminum thin film coated on silicon wafer. Microelectronics Reliability, 2008, 48, 1720-1723.	1.7	16
69	Modeling of Fracture Width and Conductivity in Channel Fracturing With Nonlinear Proppant-Pillar Deformation. SPE Journal, 2019, 24, 1288-1308.	3.1	16
70	Mass and Force Sensing of an Adsorbate on a Beam Resonator Sensor. Sensors, 2015, 15, 14871-14886.	3.8	14
71	Evolution of the interfacial shape in dissolutive wetting: Coupling of wetting and dissolution. International Journal of Heat and Mass Transfer, 2018, 118, 201-207.	4.8	14
72	Dissolutive flow in nanochannels: transition between plug-like and Poiseuille-like. Microfluidics and Nanofluidics, 2018, 22, 1.	2.2	14

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73	Formation of dendritic nanostructures in Pyrex glass anodically bonded to silicon coated with an aluminum thin film. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2008, 483-484, 611-616.	5.6	13
74	<i>In Situ</i> Observation of Thermal Marangoni Convection on the Surface of a Sessile Droplet by Infrared Thermal Imaging. <i>Journal of Adhesion Science and Technology</i> , 2012, 26, 2177-2188.	2.6	13
75	CLEMAPS: Multiple alignment of protein structures based on conformational letters. <i>Proteins: Structure, Function and Bioinformatics</i> , 2008, 71, 728-736.	2.6	12
76	The effect of a capillary bridge on the crack opening of a penny crack. <i>Soft Matter</i> , 2016, 12, 1586-1592.	2.7	11
77	Topography-induced symmetry transition of droplets on quasi-periodically patterned surfaces. <i>Soft Matter</i> , 2018, 14, 6198-6205.	2.7	11
78	Probing Micro-Newton Forces on Solid/Liquid/Gas Interfaces Using Transmission Phase Shift. <i>Langmuir</i> , 2019, 35, 5442-5447.	3.5	11
79	Two Critical Crack Propagating Velocities for PMMA Fracture Surface. <i>International Journal of Fracture</i> , 1999, 98, 9-14.	2.2	10
80	Fluctuation of fracturing curves indicates in-situ brittleness and reservoir fracturing characteristics in unconventional energy exploitation. <i>Energy</i> , 2022, 252, 124043.	8.8	10
81	Prediction of structural dynamic plastic shear failure by Johnson's damage number. <i>Forschung Im Ingenieurwesen/Engineering Research</i> , 1998, 63, 349-352.	1.6	9
82	Donut-shaped fingerprint in homologous polypeptide relationships—A topological feature related to pathogenic structural changes in conformational disease. <i>Journal of Theoretical Biology</i> , 2009, 258, 294-301.	1.7	9
83	Defining kerogen maturity from orbital hybridization by machine learning. <i>Fuel</i> , 2022, 310, 122250.	6.4	9
84	Thermo-mechanically coupled constitutive equations for soft elastomers with arbitrary initial states. <i>International Journal of Engineering Science</i> , 2022, 178, 103730.	5.0	9
85	THE SURFACE- AND SIZE-DEPENDENT ELASTIC MODULI OF NANOSTRUCTURES. <i>Surface Review and Letters</i> , 2007, 14, 667-670.	1.1	8
86	Switch Region for Pathogenic Structural Change in Conformational Disease and Its Prediction. <i>PLoS ONE</i> , 2010, 5, e8441.	2.5	8
87	Determining both adhesion energy and residual stress by measuring the stiction shape of a microbeam. <i>Microsystem Technologies</i> , 2015, 21, 919-929.	2.0	8
88	Dynamic polygonal spreading of a droplet on a lyophilic pillar-arrayed surface. <i>Journal of Adhesion Science and Technology</i> , 2016, 30, 2265-2276.	2.6	8
89	Mechanical response of kerogen at high strain rates. <i>International Journal of Impact Engineering</i> , 2021, 155, 103905.	5.0	8
90	Fabrication and Mechanical Properties of a Micro/Nanoscale Hybrid Composite. <i>International Journal of Nonlinear Sciences and Numerical Simulation</i> , 2012, 13, 153-157.	1.0	8

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91	Deflected trajectory of a single fluid-driven crack under anisotropic in-situ stress. <i>Extreme Mechanics Letters</i> , 2019, 29, 100483.	4.1	7
92	Spontaneous Motion and Rotation of Acid Droplets on the Surface of a Liquid Metal. <i>Langmuir</i> , 2021, 37, 4370-4379.	3.5	7
93	Shape evolution and scaling analysis of soluble cylinders in dissolutive flow. <i>Physics of Fluids</i> , 2020, 32, 102103.	4.0	7
94	Microcrack connectivity in rocks: a real-space renormalization group approach for 3D anisotropic bond percolation. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2016, 2016, 013205.	2.3	6
95	Geomaterials Evaluation: A New Application of Ashby Plots. <i>Materials</i> , 2020, 13, 2517.	2.9	5
96	A scheme for multiple sequence alignment optimization“an improvement based on family representative mechanics features. <i>Journal of Theoretical Biology</i> , 2009, 261, 593-597.	1.7	4
97	Generating artificial homologous proteins according to the representative family character in <i>molecular mechanics properties</i> “an attempt in validating an underlying rule of protein evolution. <i>FEBS Letters</i> , 2010, 584, 1059-1065.	2.8	4
98	Simulated pathogenic conformational switch regions matched well with the biochemical findings. <i>Journal of Biomedical Informatics</i> , 2010, 43, 365-375.	4.3	4
99	Realization of Self-Rotating Droplets Based on Liquid Metal. <i>Advanced Materials Interfaces</i> , 2021, 8, 2001756.	3.7	4
100	The Influence of Background Ultrasonic Field on the Strength of Adhesive Zones under Dynamic Impact Loads. <i>Materials</i> , 2021, 14, 3188.	2.9	4
101	Predicting the Molecular Models, Types, and Maturity of Kerogen in Shale Using Machine Learning and Multi-NMR Spectra. <i>Energy & Fuels</i> , 0, , .	5.1	4
102	On the similarity methods in fracture mechanics. <i>Forschung Im Ingenieurwesen/Engineering Research</i> , 1998, 64, 257-268.	1.6	3
103	Solid Lipid Nanoparticles - SLN. , 2012, , 2471-2487.		3
104	Fabrication and Mechanical Properties of a Micro/Nanoscale Hybrid Composite. <i>International Journal of Nonlinear Sciences and Numerical Simulation</i> , 2012, 13, 153-157.	1.0	3
105	Mode Localization and Eigenfrequency Curve Veerings of Two Overhanged Beams. <i>Micromachines</i> , 2021, 12, 324.	2.9	3
106	The pull-in instability and eigenfrequency variations of a graphene resonator under electrostatic loading. <i>Mathematics and Mechanics of Solids</i> , 2022, 27, 1592-1609.	2.4	3
107	Irwin number and ductile-brittle fracture transition. <i>International Journal of Fracture</i> , 1996, 75, R17-R21.	2.2	2
108	Structural Failure Analysis and Numerical Simulation of Microaccelerometers under Impulsive Loading. <i>International Journal of Nonlinear Sciences and Numerical Simulation</i> , 2002, 3, .	1.0	2

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109	Molecular Dynamics Simulation and Molecular Orbital Method. , 2011, , 1349-1384.		1
110	Some Basic Problems of Microdynamics of Solids. , 2001, , .		0
111	Solar Cells. , 2012, , 2459-2459.		0
112	Fabrication and Mechanical Properties of a Micro/Nanoscale Hybrid Composite. International Journal of Nonlinear Sciences and Numerical Simulation, 2012, 13, .	1.0	0
113	siRNA Delivery. , 2012, , 2429-2429.		0
114	Small-Angle Scattering. , 2012, , 2437-2437.		0
115	Silver (Ag). , 2012, , 2420-2420.		0
116	Synthesis of Subnanometric Metal Nanoparticles. , 2012, , 2639-2648.		0
117	Surface Plasmon Enhanced Optical Bistability and Optical Switching. , 2012, , 2583-2591.		0
118	Smart Carbon Nanotube-Polymer Composites. , 2012, , 2451-2451.		0
119	Molecular Dynamics Simulation and Molecular Orbital Method. , 2018, , 1-38.		0
120	Molecular Dynamics Simulation and Molecular Orbital Method. , 2018, , 1559-1595.		0
121	Surface Tension Effects of Nanostructures. , 2016, , 3976-3989.		0