Zhigang Li

List of Publications by Year
in descending order

74	2,178	218381	243296
papers	citations	26 h-index	44 g-index

79	79	79	2550
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	A comparative study of droplet impact dynamics on a dual-scaled superhydrophobic surface and lotus leaf. Applied Surface Science, 2011, 257, 8857-8863.	3.1	160
2	Highly transparent and conducting ultralarge graphene oxide/single-walled carbon nanotube hybrid films produced by Langmuirâ€“Blodgett assembly. Journal of Materials Chemistry, 2012, 22, 25072.	6.7	151
3	Enzyme-Free and Amplified Fluorescence DNA Detection Using Bimolecular Beacons. Analytical Chemistry, 2012, 84, 5939-5943.	3.2	124
4	Drag force, diffusion coefficient, and electric mobility of small particles. I. Theory applicable to the free-molecule regime. Physical Review E, 2003, 68, 061206.	0.8	107
5	Molybdenum disulfide-based amplified fluorescence DNA detection using hybridization chain reactions. Journal of Materials Chemistry B, 2015, 3, 2395-2401.	2.9	87
6	Drag force, diffusion coefficient, and electric mobility of small particles. II. Application. Physical Review E, 2003, 68, 061207.	0.8	80
7	Critical particle size where the Stokes-Einstein relation breaks down. Physical Review E, 2009, 80, 061204.	0.8	71
8	Molecular Dynamics Simulation of Composite Nanochannels as Nanopumps Driven by Symmetric Temperature Gradients. Physical Review Letters, 2010, 105, 174501.	2.9	66
9	Gas-Nanoparticle Scattering: A Molecular View of Momentum Accommodation Function. Physical Review Letters, 2005, 95, 014502.	2.9	64
10	Bouncing droplets on nonsuperhydrophobic surfaces. Physical Review E, 2010, 82, 016308.	0.8	61
11	On the validity of the Navier-Stokes equations for nanoscale liquid flows: The role of channel size. AIP Advances, 2011, 1, .	0.6	58
12	Flow regimes and parameter dependence in nanochannel flows. Physical Review E, 2009, 80, 036302.	0.8	54
13	Thermophoretic force and velocity of nanoparticles in the free molecule regime. Physical Review E, 2004, 70, 021205.	0.8	51
14	Submillimeter-Sized Bubble Entrapment and a High-Speed Jet Emission during Droplet Impact on Solid Surfaces. Langmuir, 2017, 33, 7225-7230.	1.6	49
15	Metal ion detection using functional nucleic acids and nanomaterials. Biosensors and Bioelectronics, 2017, 96, 127-139.	5.3	48
16	Nanofluidic Diode for Simple Fluids without Moving Parts. Physical Review Letters, 2015, 115, 134503.	2.9	44
17	Surface effects on friction-induced fluid heating in nanochannel flows. Physical Review E, 2009, 79, 026312.	0.8	38
18	Evolution of entrapped air under bouncing droplets on viscoelastic surfaces. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2011, 384, 726-732.	2.3	38

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19	Hydrodynamic interactions in dissipative particle dynamics. Physics of Fluids, 2008, 20, .	1.6	37
20	Flow and slip transition in nanochannels. Physical Review E, 2014, 90, 033003.	0.8	35
21	Fluid release pressure for nanochannels: the Youngâ€“Laplace equation using the effective contact angle. Nanoscale, 2019, 11, 8408-8415.	2.8	35
22	Size-dependent elastic properties of Au nanowires under bending and tensionâ€”Surfaces versus core nonlinearity. Journal of Applied Physics, 2010, 108, 083506.	1.1	34
23	Fluid infiltration pressure for hydrophobic nanochannels. Physical Review E, 2015, 91, 033022.	0.8	31
24	Detecting Arbitrary DNA Mutations Using Graphene Oxide and Ethidium Bromide. Analytical Chemistry, 2015, 87, 12254-12261.	3.2	30
25	Surface effects on nanoscale Poiseuille flows under large driving force. Journal of Chemical Physics, 2010, 132, 024507.	1.2	27
26	Flow dependence of interfacial thermal resistance in nanochannels. Journal of Chemical Physics, 2010, 132, 094703.	1.2	27
27	Enhancing and Impeding Heterogeneous Ice Nucleation through Nanogrooves. Journal of Physical Chemistry C, 2018, 122, 25992-25998.	1.5	27
28	Macrodropâ€Impactâ€Mediated Fluid Microdispensing. Advanced Science, 2021, 8, e2101331.	5.6	26
29	Biosensing using hairpin DNA probes. Reviews in Analytical Chemistry, 2015, 34, 1-27.	1.5	25
30	Fluid transport in nanochannels induced by temperature gradients. Journal of Chemical Physics, 2012, 136, 114506.	1.2	23
31	Roles of Surface Energy and Temperature in Heterogeneous Ice Nucleation. Journal of Physical Chemistry C, 2017, 121, 11552-11559.	1.5	23
32	Understanding flow enhancement in grapheneâ€coated nanochannels. Electrophoresis, 2019, 40, 859-864.	1.3	22
33	Fluid breakup in carbon nanotubes: An explanation of ultrafast ion transport. Physics of Fluids, 2017, 29, 092003.	1.6	20
34	A microfluidic rectifier for Newtonian fluids using asymmetric convergingâ€“diverging microchannels. Physics of Fluids, 2020, 32, .	1.6	20
35	Resolving the Apparent Line Tension of Sessile Droplets and Understanding its Sign Change at a Critical Wetting Angle. Physical Review Letters, 2019, 123, 094501.	2.9	19
36	Hairpin DNA-Mediated isothermal amplification (HDMIA) techniques for nucleic acid testing. Talanta, 2021, 226, 122146.	2.9	19

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37	Effects of ions on the diffusion coefficient of water in carbon nanotubes. Journal of Applied Physics, 2014, 116, .	1.1	18
38	Directional motion of evaporating droplets on gradient surfaces. Applied Physics Letters, 2012, 101, 064101.	1.5	17
39	Field-effect BaTiO3-Si solar cells. Applied Physics Letters, 2014, 104, 123901.	1.5	17
40	Negative differential thermal resistance through nanoscale solidâ€“fluidâ€“solid sandwiched structures. Nanoscale, 2019, 11, 13051-13057.	2.8	16
41	Controlling flow direction in nanochannels by electric field strength. Physical Review E, 2015, 92, 023017.	0.8	15
42	Drag force and transport property of a small cylinder in free molecule flow: A gas-kinetic theory analysis. Physical Review E, 2016, 94, 023102.	0.8	15
43	A Relation for Nanodroplet Diffusion on Smooth Surfaces. Scientific Reports, 2016, 6, 26488.	1.6	15
44	Surface Energy-Mediated Multistep Pathways for Heterogeneous Ice Nucleation. Journal of Physical Chemistry C, 2018, 122, 9474-9479.	1.5	14
45	Water transport through graphene and MoS2 nanopores. Journal of Applied Physics, 2019, 126, .	1.1	14
46	Effects of N doping and NH2grafting on the mechanical and wrinkling properties of graphene sheets. RSC Advances, 2013, 3, 923-929.	1.7	13
47	Flow characterization in converging-diverging microchannels. Physics of Fluids, 2018, 30, .	1.6	13
48	Molecular understanding of ion rejection in the freezing of aqueous solutions. Physical Chemistry Chemical Physics, 2021, 23, 13292-13299.	1.3	13
49	Passive nanofluidic diode using non-uniform nanochannels. Physics of Fluids, 2016, 28, .	1.6	12
50	Lift force on nanoparticles in shear flows of dilute gases: negative or positive?. Journal of Fluid Mechanics, 2016, 795, 443-454.	1.4	12
51	Passive fluidic diode for simple fluids using nested nanochannel structures. Physical Review E, 2016, 93, 033101.	0.8	12
52	Molecular beacon-based enzyme-free strategy for amplified DNA detection. Biosensors and Bioelectronics, 2016, 79, 758-762.	5.3	12
53	A dual-cycling fluorescence scheme for ultrasensitive DNA detection through signal amplification and target regeneration. Analyst, The, 2019, 144, 2649-2655.	1.7	12
54	Homogeneous Ice Nucleation Under Shear. Journal of Physical Chemistry B, 2020, 124, 3701-3708.	1.2	12

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55	Critical droplet volume for spontaneous capillary wrapping. Applied Physics Letters, 2010, 97, 124103.	1.5	10
56	Coupling effects in electromechanical ion transport in graphene nanochannels. Physical Review E, 2020, 102, 033112.	0.8	10
57	Ice Crystallization in Shear Flows. Journal of Physical Chemistry C, 2019, 123, 21042-21049.	1.5	9
58	The role of entrance functionalization in carbon nanotube-based nanofluidic systems: An intrinsic challenge. Physics of Fluids, 2021, 33, .	1.6	9
59	Size-Sensitive Thermoelectric Properties of Electrolyte-Based Nanofluidic Systems. Journal of Physical Chemistry Letters, 2021, 12, 1144-1149.	2.1	9
60	Graphene oxide and enzyme-assisted dual-cycling amplification method for sensitive fluorometric determination of DNA. Mikrochimica Acta, 2019, 186, 716.	2.5	8
61	Nanofluidics. , 0, , .		7
62	A nanopump using carbon nanotube hetero-junction driven by symmetric temperature gradients. Physics of Fluids, 2021, 33, .	1.6	6
63	Lift force on spherical nanoparticles in shear flows of rarefied binary gas mixtures. Journal of Fluid Mechanics, 2016, 809, 345-359.	1.4	5
64	Shear lift forces on nanocylinders in the free molecule regime. Journal of Fluid Mechanics, 2018, 846, 392-410.	1.4	4
65	Effects of temperature and pore structure on the release of methane in zeolite nanochannels. RSC Advances, 2019, 9, 9546-9554.	1.7	4
66	Release of methane from nanochannels through displacement using CO₂. RSC Advances, 2021, 11, 15457-15466.	1.7	4
67	Directional passive transport of nanodroplets on general axisymmetric surfaces. Physical Chemistry Chemical Physics, 2022, 24, 9727-9734.	1.3	4
68	Discrete self-oscillation period branches observed in semiconductor superlattices. Physical Review B, 2011, 83, .	1.1	2
69	Effect of external pressure on the release of methane through MFI zeolite nanochannels. RSC Advances, 2020, 10, 37507-37514.	1.7	2
70	Nanoscale Poiseuille Flows of Liquid Argon. Mechanics of Advanced Materials and Structures, 2011, 18, 585-589.	1.5	1
71	An isothermal, non-enzymatic, and dual-amplified fluorescent sensor for highly sensitive DNA detection. Reviews in Analytical Chemistry, 2021, 40, 312-322.	1.5	1
72	Friction-Induced Fluid Heating in Nanoscale Helium Flows. , 2010, , .		0

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73	Non-pn-junction-based solar cells: Charge carrier separation in solar cells with bound surface charges. , 2014, , .		0
74	Field-effect ferroelectric-semiconductor solar cells. , 2014, , .		0