Rui Qiao

List of Publications by Year
in descending order

138 papers	6,912 citations	66315 42 h-index	62565 80 g-index
143 all docs	143 docs citations	143 times ranked	8408 citing authors

#	Article	IF	Citations
1	Translocation of C60and Its Derivatives Across a Lipid Bilayer. Nano Letters, 2007, 7, 614-619.	4.5	369
2	Ion concentrations and velocity profiles in nanochannel electroosmotic flows. Journal of Chemical Physics, 2003, 118, 4692-4701.	1.2	310
3	Harvesting electrical energy from carbon nanotube yarn twist. Science, 2017, 357, 773-778.	6.0	306
4	In vivo Biomodification of Lipid-Coated Carbon Nanotubes byDaphnia magna. Environmental Science & Technology, 2007, 41, 3025-3029.	4.6	304
5	Accelerating charging dynamics in subnanometre pores. Nature Materials, 2014, 13, 387-393.	13.3	303
6	Self-Assembly: A Facile Way of Forming Ultrathin, High-Performance Graphene Oxide Membranes for Water Purification. Nano Letters, 2017, 17, 2928-2933.	4.5	269
7	A physical catalyst for the electrolysis of nitrogen to ammonia. Science Advances, 2018, 4, e1700336.	4.7	264
8	Electrolytic transport through a synthetic nanometer-diameter pore. Proceedings of the National Academy of Sciences of the United States of America, 2005, 102, 10445-10450.	3.3	220
9	Charge Inversion and Flow Reversal in a Nanochannel Electro-osmotic Flow. Physical Review Letters, 2004, 92, 198301.	2.9	204
10	Moisture Sensitive Smart Yarns and Textiles from Selfâ€Balanced Silk Fiber Muscles. Advanced Functional Materials, 2019, 29, 1808241.	7.8	200
11	Complex Capacitance Scaling in Ionic Liquids-Filled Nanopores. ACS Nano, 2011, 5, 9044-9051.	7.3	188
12	Ion Distribution in Electrified Micropores and Its Role in the Anomalous Enhancement of Capacitance. ACS Nano, 2010, 4, 2382-2390.	7.3	183
13	Microstructure and Capacitance of the Electrical Double Layers at the Interface of Ionic Liquids and Planar Electrodes. Journal of Physical Chemistry C, 2009, 113, 4549-4559.	1.5	182
14	The importance of ion size and electrode curvature on electrical double layers in ionic liquids. Physical Chemistry Chemical Physics, 2011, 13, 1152-1161.	1.3	173
15	Water in Ionic Liquids at Electrified Interfaces: The Anatomy of Electrosorption. ACS Nano, 2014, 8, 11685-11694.	7.3	146
16	Predicting Effective Diffusivity of Porous Media from Images by Deep Learning. Scientific Reports, 2019, 9, 20387.	1.6	110
17	Lipid-Carbon Nanotube Self-Assembly in Aqueous Solution. Journal of the American Chemical Society, 2006, 128, 13656-13657.	6.6	107
18	Structure and dynamics of electrical double layers in organic electrolytes. Physical Chemistry Chemical Physics, 2010, 12, 5468.	1.3	107

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19	Three-Dimensional Double Layers. Journal of Physical Chemistry C, 2014, 118, 18285-18290.	1.5	98
20	Atypical Dependence of Electroosmotic Transport on Surface Charge in a Single-wall Carbon Nanotube. Nano Letters, 2003, 3, 1013-1017.	4.5	95
21	Atomistic simulation of KCl transport in charged silicon nanochannels: Interfacial effects. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2005, 267, 103-109.	2.3	91
22	A â€œcounter-charge layer in generalized solventsâ€•framework for electrical double layers in neat and hybrid ionic liquid electrolytes. Physical Chemistry Chemical Physics, 2011, 13, 14723.	1.3	90
23	Parameterization of the porous-material model for sand with different levels of water saturation. Soil Dynamics and Earthquake Engineering, 2008, 28, 20-35.	1.9	82
24	Importance of Ion Packing on the Dynamics of Ionic Liquids during Micropore Charging. Journal of Physical Chemistry Letters, 2016, 7, 36-42.	2.1	78
25	Voltage Dependent Charge Storage Modes and Capacity in Subnanometer Pores. Journal of Physical Chemistry Letters, 2012, 3, 1732-1737.	2.1	77
26	Duality of the interfacial thermal conductance in graphene-based nanocomposites. Carbon, 2014, 75, 169-177.	5.4	67
27	Scaling of Electrokinetic Transport in Nanometer Channels. Langmuir, 2005, 21, 8972-8977.	1.6	66
28	Carbon nanomaterials in biological systems. Journal of Physics Condensed Matter, 2007, 19, 373101.	0.7	65
29	Thermodynamics and Kinetics of Gas Storage in Porous Liquids. Journal of Physical Chemistry B, 2016, 120, 7195-7200.	1.2	64
30	Simulation of heat conduction in nanocomposite using energy-conserving dissipative particle dynamics. Molecular Simulation, 2007, 33, 677-683.	0.9	63
31	Meshless analysis of steady-state electro-osmotic transport. Journal of Microelectromechanical Systems, 2000, 9, 435-449.	1.7	54
32	Effects of molecular level surface roughness on electroosmotic flow. Microfluidics and Nanofluidics, 2006, 3, 33-38.	1.0	54
33	A compact model for electroosmotic flows in microfluidic devices. Journal of Micromechanics and Microengineering, 2002, 12, 625-635.	1.5	53
34	Effect of diffuse layer and pore shapes in mesoporous carbon supercapacitors. Journal of Materials Research, 2010, 25, 1469-1475.	1.2	53
35	Atomistic Insight on the Charging Energetics in Subnanometer Pore Supercapacitors. Journal of Physical Chemistry C, 2010, 114, 18012-18016.	1.5	53
36	Recent Progress in Polysulfide Redoxâ€Flow Batteries. Batteries and Supercaps, 2019, 2, 627-637.	2.4	52

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37	Tuning interfacial thermal conductance of graphene embedded in soft materials by vacancy defects. Journal of Chemical Physics, 2015, 142, 244703.	1.2	51
38	Dynamic Charge Storage in Ionic Liquids-Filled Nanopores: Insight from a Computational Cyclic Voltammetry Study. Journal of Physical Chemistry Letters, 2015, 6, 22-30.	2.1	51
39	The ionized graphene oxide membranes for water-ethanol separation. Carbon, 2018, 136, 262-269.	5.4	51
40	Sodiumâ€"Sulfur Flow Battery for Lowâ€Cost Electrical Storage. Advanced Energy Materials, 2018, 8, 1701991.	10.2	49
41	Surface-charge-induced asymmetric electrokinetic transport in confined silicon nanochannels. Applied Physics Letters, 2005, 86, 143105.	1.5	48
42	Integrated experimental and modeling evaluation of energy consumption for ammonia recovery in bioelectrochemical systems. Chemical Engineering Journal, 2017, 327, 924-931.	6.6	46
43	Water-in-salt electrolytes: An interfacial perspective. Current Opinion in Colloid and Interface Science, 2020, 47, 99-110.	3.4	44
44	Control of Electroosmotic Flow by Polymer Coating:Â Effects of the Electrical Double Layer. Langmuir, 2006, 22, 7096-7100.	1.6	41
45	Physical origins of apparently enhanced viscosity of interfacial fluids in electrokinetic transport. Physics of Fluids, 2011, 23, .	1.6	39
46	Modeling galvanostatic chargeâ€"discharge of nanoporous supercapacitors. Nature Computational Science, 2021, 1, 725-731.	3.8	39
47	Self-consistent fluctuating hydrodynamics simulations of thermal transport in nanoparticle suspensions. Journal of Applied Physics, 2008, 103, 094305.	1.1	38
48	Impact of Surface Ionization on Water Transport and Salt Leakage through Graphene Oxide Membranes. Journal of Physical Chemistry C, 2017, 121, 13412-13420.	1.5	37
49	Double helical conformation and extreme rigidity in a rodlike polyelectrolyte. Nature Communications, 2019, 10, 801.	5.8	36
50	Differential Ion Transport Induced Electroosmosis and Internal Recirculation in Heterogeneous Osmosis Membranes. Nano Letters, 2006, 6, 995-999.	4.5	34
51	Self-Diffusiophoresis of Janus Catalytic Micromotors in Confined Geometries. Langmuir, 2016, 32, 5580-5592.	1.6	34
52	Modulation of Electroosmotic Flow by Neutral Polymers. Langmuir, 2007, 23, 5810-5816.	1.6	30
53	Understanding Ammonium Transport in Bioelectrochemical Systems towards its Recovery. Scientific Reports, 2016, 6, 22547.	1.6	30
54	Recovery of Multicomponent Shale Gas from Single Nanopores. Energy & Fuels, 2017, 31, 7932-7940.	2.5	29

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55	Water at ionic liquids-solid interfaces. Current Opinion in Electrochemistry, 2019, 13, 11-17.	2.5	29
56	Dynamics of electrical double layer formation in room-temperature ionic liquids under constant-current charging conditions. Journal of Physics Condensed Matter, 2014, 26, 284109.	0.7	28
57	Soaking in CO2 huff-n-puff: A single-nanopore scale study. Fuel, 2022, 308, 122026.	3.4	28
58	Marangoni Flow Induced Collective Motion of Catalytic Micromotors. Journal of Physical Chemistry C, 2015, 119, 28361-28367.	1.5	27
59	Multiscale Simulation of Electroosmotic Transport Using Embedding Techniques. International Journal for Multiscale Computational Engineering, 2004, 2, 173-188.	0.8	27
60	Atomic layer deposition in porous electrodes: A pore-scale modeling study. Chemical Engineering Journal, 2019, 378, 122099.	6.6	26
61	Charge measurement of cosmic ray nuclei with the plastic scintillator detector of DAMPE. Astroparticle Physics, 2019, 105, 31-36.	1.9	26
62	Low salinity effect on the recovery of oil trapped by nanopores: A molecular dynamics study. Fuel, 2020, 261, 116443.	3.4	26
63	A full-Eulerian solid level set method for simulation of fluidâ€"structure interactions. Microfluidics and Nanofluidics, 2011, 11, 557-567.	1.0	25
64	Facile tuning of superhydrophobic states with Ag nanoplates. Nano Research, 2008, 1, 292-302.	5.8	24
65	Structure and charging kinetics of electrical double layers at large electrode voltages. Microfluidics and Nanofluidics, 2010, 8, 703-708.	1.0	23
66	Structure, Thermodynamics, and Dynamics of Thin Brine Films in Oilâ€"Brineâ€"Rock Systems. Langmuir, 2019, 35, 10341-10353.	1.6	23
67	Effects of Water on Micaâ€"Ionic Liquid Interfaces. Journal of Physical Chemistry C, 2018, 122, 9035-9045.	1.5	22
68	Internal alignment and position resolution of the silicon tracker of DAMPE determined with orbit data. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2018, 893, 43-56.	0.7	22
69	Swelling pressure of montmorillonite with multiple water layers at elevated temperatures and water pressures: A molecular dynamics study. Applied Clay Science, 2021, 201, 105924.	2.6	21
70	Current Rectification for Transport of Room-Temperature Ionic Liquids through Conical Nanopores. Journal of Physical Chemistry C, 2016, 120, 4629-4637.	1.5	20
71	Weakly charged droplets fundamentally change impact dynamics on flat surfaces. Soft Matter, 2019, 15, 5548-5553.	1.2	20
72	Spatial Molecular Layer Deposition of Ultrathin Polyamide To Stabilize Silicon Anodes in Lithium-Ion Batteries. ACS Applied Energy Materials, 2019, 2, 4135-4143.	2.5	20

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73	Molecular Structure and Dynamics of Ionic Liquids in a Rigid-Rod Polyanion-Based Ion Gel. Langmuir, 2017, 33, 322-331.	1.6	19
74	Magnetic Actuation of Surface Walkers: The Effects of Confinement and Inertia. Langmuir, 2020, 36, 7046-7055.	1.6	19
75	A New Uniform Calibration Method for Double-Sided Silicon Strip Detectors. IEEE Transactions on Nuclear Science, 2014, 61, 596-601.	1.2	18
76	Fluid dynamics of the droplet impact processes in cell printing. Microfluidics and Nanofluidics, 2015, 18, 569-585.	1.0	16
77	Flow of quasi-two dimensional water in graphene channels. Journal of Chemical Physics, 2018, 148, 064702.	1.2	16
78	Transient analysis of electro-osmotic transport by a reduced-order modelling approach. International Journal for Numerical Methods in Engineering, 2003, 56, 1023-1050.	1.5	15
79	Ultrafast measurement of transient electroosmotic flow in microfluidics. Microfluidics and Nanofluidics, 2011, 11, 353-358.	1.0	15
80	Manipulation of magnetic nanorod clusters in liquid by non-uniform alternating magnetic fields. Soft Matter, 2017, 13, 3750-3759.	1.2	15
81	Multicomponent Gas Storage in Organic Cage Molecules. Journal of Physical Chemistry C, 2017, 121, 12426-12433.	1.5	15
82	Surface hydration drives rapid water imbibition into strongly hydrophilic nanopores. Physical Chemistry Chemical Physics, 2017, 19, 20506-20512.	1.3	15
83	Interfacial CO₂-mediated nanoscale oil transport: from impediment to enhancement. Physical Chemistry Chemical Physics, 2020, 22, 23057-23063.	1.3	15
84	Physics-constrained deep learning for data assimilation of subsurface transport. Energy and AI, 2021, 3, 100044.	5.8	15
85	Dispersion control in nano-channel systems by localized Î¶-potential variations. Sensors and Actuators A: Physical, 2003, 104, 268-274.	2.0	14
86	Experimental and Molecular Insights on Mitigation of Hydrocarbon Sieving in Niobrara Shale by CO2 Huff â€˜nâ€™ Puff. SPE Journal, 2020, 25, 1803-1811.	1.7	14
87	Electro-Induced Dewetting and Concomitant Ionic Current Avalanche in Nanopores. Journal of Physical Chemistry Letters, 2013, 4, 3120-3126.	2.1	13
88	On the peculiar bubble formation, growth, and collapse behaviors in catalytic micro-motor systems. Microfluidics and Nanofluidics, 2017, 21, 1.	1.0	13
89	Study of Oscillating Electroosmotic Flows with High Temporal and Spatial Resolution. Analytical Chemistry, 2018, 90, 1652-1659.	3.2	13
90	Solvate Ionic Liquids at Electrified Interfaces. ACS Applied Materials & Interfaces, 2018, 10, 32151-32161.	4.0	13

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91	Electrostatic Jumping of Frost. ACS Nano, 2021, 15, 4669-4677.	7.3	13
92	Enabling Magnesium Anodes by Tuning the Electrode/Electrolyte Interfacial Structure. ACS Applied Materials & Interfaces, 2021, 13, 52461-52468.	4.0	13
93	Deep learning-based reconstruction of the structure of heterogeneous composites from their temperature fields. AIP Advances, 2020, 10, .	0.6	12
94	Advances in Studies of Boron Nitride Nanosheets and Nanocomposites for Thermal Transport and Related Applications. ChemPhysChem, 2022, 23, .	1.0	12
95	Mapping of dissipative particle dynamics in fluctuating hydrodynamics simulations. Journal of Chemical Physics, 2008, 128, 126101.	1.2	11
96	DAMPE silicon tracker on-board data compression algorithm. Chinese Physics C, 2015, 39, 116202.	1.5	11
97	Manipulation of Single Cells Using a Ferromagnetic Nanorod Cluster Actuated by Weak AC Magnetic Fields. Advanced Biology, 2019, 3, e1800246.	3.0	11
98	Drying of porous media by concurrent drainage and evaporation: A pore network modeling study. International Journal of Heat and Mass Transfer, 2020, 152, 118718.	2.5	11
99	Bulk and Interfacial Properties of the Decane + Brine System in the Presence of Carbon Dioxide, Methane, and Their Mixture. Industrial & Engineering Chemistry Research, 2021, 60, 11525-11534.	1.8	11
100	Molecular anatomy and macroscopic behavior of oil extraction from nanopores by CO2 and CH4. Fuel, 2022, 324, 124662.	3.4	11
101	Electrokinetic Transport in Room-Temperature Ionic Liquids: Amplification by Short-Wavelength Hydrodynamics. Journal of Physical Chemistry C, 2012, 116, 1133-1138.	1.5	10
102	Invasion of gas into mica nanopores: a molecular dynamics study. Journal of Physics Condensed Matter, 2018, 30, 224001.	0.7	10
103	Probing Nanoscale Thermal Transport in Surfactant Solutions. Scientific Reports, 2015, 5, 16040.	1.6	9
104	Experimental and Molecular Insights on Sieving of Hydrocarbon Mixtures in Niobrara Shale. , 2019, , .		9
105	Design of the readout electronics for the DAMPE Silicon Tracker detector. Chinese Physics C, 2016, 40, 116101.	1.5	8
106	Molecular Structure and Dynamics of Interfacial Polymerized Ionic Liquids. Journal of Physical Chemistry C, 2018, 122, 22494-22503.	1.5	8
107	Electric-Field-Driven Ion Emission from the Free Surface of Room Temperature Ionic Liquids. Journal of Physical Chemistry Letters, 2021, 12, 711-716.	2.1	7
108	Nonlocal thermal transport across embedded few-layer graphene sheets. Journal of Physics Condensed Matter, 2014, 26, 502101.	0.7	6

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109	Pathway and energetics of the thermally-induced structural changes in microemulsions. Applied Thermal Engineering, 2016, 108, 449-455.	3.0	6
110	Electrical Double Layers near Charged Nanorods in Mixture Electrolytes. Journal of Physical Chemistry C, 2017, 121, 9454-9461.	1.5	6
111	Charge reconstruction of the DAMPE Siliconâ€"Tungsten Tracker: A preliminary study with ion beams. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2018, 886, 48-52.	0.7	6
112	Structure and Dynamics of Polymeric Canopies in Nanoscale Ionic Materials: An Electrical Double Layer Perspective. Scientific Reports, 2018, 8, 5191.	1.6	6
113	Superdiffusive gas recovery from nanopores. Physical Review Fluids, 2016, 1, .	1.0	6
114	A charge reconstruction algorithm for DAMPE silicon microstrip detectors. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2019, 935, 24-29.	0.7	5
115	The Role of Disjoining Pressure and Thermal Activation in the Invasion of Droplets into Nanopores. Journal of Physical Chemistry C, 2019, 123, 6905-6912.	1.5	5
116	Investigate Effects of Microstructures on Nanoconfined Water Flow Behaviors from Viscous Dissipation Perspectives. Transport in Porous Media, 2021, 140, 815-836.	1.2	5
117	Mixed-domain and reduced-order modeling of electroosmotic transport in Bio-MEMS. , 0, , .		4
118	A machine learning method to separate cosmic ray electrons from protons from 10 to 100 GeV using DAMPE data. Research in Astronomy and Astrophysics, 2018, 18, 071.	0.7	4
119	Pore-scale simulation of reactive transport processes in lithium-oxygen batteries. International Communications in Heat and Mass Transfer, 2021, 129, 105740.	2.9	4
120	Modern Theories of Carbon-Based Electrochemical Capacitors: A Short Review. , 2010, , .		3
121	A charge sharing study of silicon microstrip detectors with electrical characterization and SPICE simulation. Advances in Space Research, 2019, 64, 2627-2633.	1.2	3
122	Ionic liquids-mediated interactions between nanorods. Journal of Chemical Physics, 2017, 147, 134704.	1.2	2
123	Adsorption of Molecular Nitrogen in Electrical Double Layers near Planar and Atomically Sharp Electrodes. Langmuir, 2018, 34, 14552-14561.	1.6	2
124	Experimental measurements and mechanisms of selective hindrance of oil mixtures in Niobrara shale. Journal of Petroleum Science and Engineering, 2021, 205, 108867.	2.1	2
125	Integrated Microchannel Cooling for Power Electronic Modules. Additional Conferences (Device) Tj ETQq1 1 0.784314 rgBT /Overlock	0.2	2
126	Modulation of slippage at brineâ€"oil interfaces by surfactants: The effects of surfactant density and tail length. Physics of Fluids, 2022, 34, 022106.	1.6	2

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127	Computational modeling of carbon nanostructures for energy storage applications. , 2010, , .		1
128	Two tributaries of the electrical double layer. Journal of Physics Condensed Matter, 2016, 28, 460301.	0.7	1
129	Experimental and Molecular Insights on Mitigation of Hydrocarbon Sieving in Niobrara Shale by CO2 Huff-n-Puff. , 2019, , .		1
130	Thermoelectrics in ice slabs: charge dynamics and thermovoltages. Physical Chemistry Chemical Physics, 2021, 23, 16277-16288.	1.3	1
131	Dynamics of ion depletion in thin brine films. Fuel, 2021, 306, 121758.	3.4	1
132	Graphene-based thermal nanocomposites: fundamentals and applications. , 2020, , 271-303.		1
133	Scaling of Electroosmotic Flow and Ionic Conductivity in Slit Nanochannels. , 2005, , .		0
134	Fluid Flow in Nanometer Scale Channels: Effects of Polymer Coating. , 2006, , 587.		0
135	Particle actuation by rotating magnetic fields in microchannels: a numerical study. Soft Matter, 2021, 17, 5590-5601.	1.2	0
136	Modeling of Supercapacitors. , 2013, , 1-9.		0
137	Modeling of Supercapacitors. , 2015, , 2282-2289.		0
138	Molecular Insights into Electrical Double Layers in Graphene-Based Supercapacitors. , 2017, , .		0