

# Martin Z Bazant

## List of Publications by Year in descending order

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282  
papers

28,375  
citations

4388

86  
h-index

5988

160  
g-index

296  
all docs

296  
docs citations

296  
times ranked

18505  
citing authors

#	ARTICLE	IF	CITATIONS
1	Advances and challenges in the development of nanosheet membranes. Reviews in Chemical Engineering, 2023, 39, 631-668.	4.4	4
2	Quantifying the tradeoff between energy consumption and the risk of airborne disease transmission for building HVAC systems. Science and Technology for the Built Environment, 2022, 28, 240-254.	1.7	7
3	Avoiding surface instability and slurry jamming in simultaneous multilayer coating of structured particulate films. Journal of Coatings Technology Research, 2022, 19, 131-142.	2.5	2
4	Fast charging design for Lithium-ion batteries via Bayesian optimization. Applied Energy, 2022, 307, 118244.	10.1	35
5	Structural Forces in Ionic Liquids: The Role of Ionic Size Asymmetry. Journal of Physical Chemistry B, 2022, 126, 1242-1253.	2.6	21
6	Dip coating of bidisperse particulate suspensions. Journal of Fluid Mechanics, 2022, 936, .	3.4	12
7	Correlative image learning of chemo-mechanics in phase-transforming solids. Nature Materials, 2022, 21, 547-554.	27.5	27
8	Electrokinetics in two-dimensional complicated geometries: Conformal mapping and experimental comparison. Physical Review Fluids, 2022, 7, .	2.5	2
9	Water electrolysis: from textbook knowledge to the latest scientific strategies and industrial developments. Chemical Society Reviews, 2022, 51, 4583-4762.	38.1	453
10	Rectified and Salt Concentration Dependent Wetting of Hydrophobic Nanopores. Journal of the American Chemical Society, 2022, 144, 11693-11705.	13.7	8
11	Polar liquids at charged interfaces: A dipolar shell theory. Journal of Chemical Physics, 2022, 156, .	3.0	8
12	Interfacial Resistive Switching by Multiphase Polarization in Ion-Intercalation Nanofilms. Nano Letters, 2022, 22, 5866-5873.	9.1	6
13	Theory of coupled ion-electron transfer kinetics. Electrochimica Acta, 2021, 367, 137432.	5.2	64
14	Theory of shock electrodialysis II: Mechanisms of selective ion removal. Journal of Colloid and Interface Science, 2021, 589, 616-621.	9.4	13
15	Mean-Field Theory of the Electrical Double Layer in Ionic Liquids. , 2021, , 1-13.		4
16	The Application of Data-Driven Methods and Physics-Based Learning for Improving Battery Safety. Joule, 2021, 5, 316-329.	24.0	123
17	Cation-Dependent Interfacial Structures and Kinetics for Outer-Sphere Electron-Transfer Reactions. Journal of Physical Chemistry C, 2021, 125, 4397-4411.	3.1	38
18	Interplay of Lithium Intercalation and Plating on a Single Graphite Particle. Joule, 2021, 5, 393-414.	24.0	168

#	ARTICLE	IF	CITATIONS
19	Correlated Ion Transport and the Gel Phase in Room Temperature Ionic Liquids. Journal of Physical Chemistry B, 2021, 125, 2677-2689.	2.6	17
20	Perspective“Combining Physics and Machine Learning to Predict Battery Lifetime. Journal of the Electrochemical Society, 2021, 168, 030525.	2.9	107
21	Fictitious phase separation in Li layered oxides driven by electro-autocatalysis. Nature Materials, 2021, 20, 991-999.	27.5	101
22	Large-deformation plasticity and fracture behavior of pure lithium under various stress states. Acta Materialia, 2021, 208, 116730.	7.9	19
23	Guiding the Design of Heterogeneous Electrode Microstructures for Li-ion Batteries: Microscopic Imaging, Predictive Modeling, and Machine Learning. Advanced Energy Materials, 2021, 11, 2003908.	19.5	66
24	Deionization shocks in crossflow. AIChE Journal, 2021, 67, e17274.	3.6	7
25	A guideline to limit indoor airborne transmission of COVID-19. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.1	313
26	Theory of Faradaically Modulated Redox Active Electrodes for Electrochemically Mediated Selective Adsorption Processes. Journal of the Electrochemical Society, 2021, 168, 053501.	2.9	2
27	Ion Clusters and Networks in Water-in-Salt Electrolytes. Journal of the Electrochemical Society, 2021, 168, 050514.	2.9	31
28	Theory of shock electrodialysis I: Water dissociation and electrosmotic vortices. Journal of Colloid and Interface Science, 2021, 589, 605-615.	9.4	17
29	Electrochemical ion insertion from the atomic to the device scale. Nature Reviews Materials, 2021, 6, 847-867.	48.7	84
30	Enabling a Stable High-Power Lithium-Bromine Flow Battery Using Task-Specific Ionic Liquids. Journal of the Electrochemical Society, 2021, 168, 070542.	2.9	8
31	Image inversion and uncertainty quantification for constitutive laws of pattern formation. Journal of Computational Physics, 2021, 436, 110279.	3.8	14
32	End-of-life or second-life options for retired electric vehicle batteries. Cell Reports Physical Science, 2021, 2, 100537.	5.6	77
33	Modeling and multiobjective optimization of indoor airborne disease transmission risk and associated energy consumption for building HVAC systems. Energy and Buildings, 2021, 253, 111497.	6.7	23
34	Methods“PETLION: Open-Source Software for Millisecond-Scale Porous Electrode Theory-Based Lithium-Ion Battery Simulations. Journal of the Electrochemical Society, 2021, 168, 090504.	2.9	25
35	Single-flow multiphase flow batteries: Theory. Electrochimica Acta, 2021, 389, 138554.	5.2	7
36	A physics-guided neural network framework for elastic plates: Comparison of governing equations-based and energy-based approaches. Computer Methods in Applied Mechanics and Engineering, 2021, 383, 113933.	6.6	63

#	ARTICLE	IF	CITATIONS
37	Continuous and Selective Removal of Lead from Drinking Water by Shock Electrodialysis. ACS ES&T Water, 2021, 1, 2269-2274.	4.6	16
38	Nonlinear Identifiability Analysis of the Porous Electrode Theory Model of Lithium-Ion Batteries. Journal of the Electrochemical Society, 2021, 168, 090546.	2.9	19
39	Mercury cyclic porosimetry: Measuring pore-size distributions corrected for both pore-space accessibility and contact-angle hysteresis. Journal of Colloid and Interface Science, 2021, 599, 255-261.	9.4	6
40	Growth morphology and symmetry selection of interfacial instabilities in anisotropic environments. Soft Matter, 2021, 17, 1202-1209.	2.7	6
41	Blistering failure of elastic coatings with applications to corrosion resistance. Soft Matter, 2021, 17, 9480-9498.	2.7	14
42	Monitoring carbon dioxide to quantify the risk of indoor airborne transmission of COVID-19. Flow, 2021, 1, .	2.6	32
43	Nonlinear ion transport mediated by induced charge in ultrathin nanoporous membranes. Physical Review E, 2021, 104, 044802.	2.1	6
44	Theory of freezing point depression in charged porous media. Physical Review E, 2021, 104, 045102.	2.1	4
45	Bayesian learning for rapid prediction of lithium-ion battery-cycling protocols. Joule, 2021, 5, 3187-3203.	24.0	51
46	Electroneutrality breakdown in nanopore arrays. Physical Review E, 2021, 104, 044803.	2.1	13
47	Salt-in-Ionic-Liquid Electrolytes: Ion Network Formation and Negative Effective Charges of Alkali Metal Cations. Journal of Physical Chemistry B, 2021, 125, 13752-13766.	2.6	21
48	Ionic activity in concentrated electrolytes: Solvent structure effect revisited. Chemical Physics Letters, 2020, 738, 136915.	2.6	19
49	Continuous ion-selective separations by shock electrodialysis. AIChE Journal, 2020, 66, e16751.	3.6	28
50	Revealing electrolyte oxidation <i>via</i> carbonate dehydrogenation on Ni-based oxides in Li-ion batteries by <i>in situ</i> Fourier transform infrared spectroscopy. Energy and Environmental Science, 2020, 13, 183-199.	30.8	202
51	Small-scale desalination of seawater by shock electrodialysis. Desalination, 2020, 476, 114219.	8.2	52
52	Novel ionic separation mechanisms in electrically driven membrane processes. Advances in Colloid and Interface Science, 2020, 284, 102269.	14.7	34
53	Entrainment of particles during the withdrawal of a fibre from a dilute suspension. Journal of Fluid Mechanics, 2020, 903, .	3.4	14
54	Imaging Arrangements of Discrete Ions at Liquid-Solid Interfaces. Nano Letters, 2020, 20, 7927-7932.	9.1	5

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55	Dielectric Breakdown by Electric-field Induced Phase Separation. Journal of the Electrochemical Society, 2020, 167, 113504.	2.9	9
56	Simultaneous inversion of optical and infra-red image data to determine thermo-mechanical properties of thermally conductive solid materials. International Journal of Heat and Mass Transfer, 2020, 163, 120445.	4.8	6
57	Interfacial Layering in the Electric Double Layer of Ionic Liquids. Physical Review Letters, 2020, 125, 116001.	7.8	69
58	Continuum Theory of Electrostatic Correlations at Charged Surfaces. Journal of Physical Chemistry C, 2020, 124, 11414-11421.	3.1	46
59	Tuning the stability of electrochemical interfaces by electron transfer reactions. Journal of Chemical Physics, 2020, 152, 184703.	3.0	19
60	Analysis, Design, and Generalization of Electrochemical Impedance Spectroscopy (EIS) Inversion Algorithms. Journal of the Electrochemical Society, 2020, 167, 106508.	2.9	34
61	Theory of ion aggregation and gelation in super-concentrated electrolytes. Journal of Chemical Physics, 2020, 152, 234506.	3.0	49
62	Breakdown of electroneutrality in nanopores. Journal of Colloid and Interface Science, 2020, 579, 162-176.	9.4	44
63	Spatial dynamics of lithiation and lithium plating during high-rate operation of graphite electrodes. Energy and Environmental Science, 2020, 13, 2570-2584.	30.8	124
64	Heat of nervous conduction: A thermodynamic framework. Physical Review E, 2020, 101, 022406.	2.1	15
65	Learning the Physics of Pattern Formation from Images. Physical Review Letters, 2020, 124, 060201.	7.8	34
66	Lithium-Battery Anode Gains Additional Functionality for Neuromorphic Computing through Metal-Insulator Phase Separation. Advanced Materials, 2020, 32, e1907465.	21.0	43
67	Physics of Electrostatic Projection Revealed by High-Speed Video Imaging. Physical Review Applied, 2020, 13, .	3.8	3
68	Selective adsorption of organic anions in a flow cell with asymmetric redox active electrodes. Water Research, 2020, 182, 115963.	11.3	25
69	A scaling law to determine phase morphologies during ion intercalation. Energy and Environmental Science, 2020, 13, 2142-2152.	30.8	43
70	Electro-osmotic instability of concentration enrichment in curved geometries for an aqueous electrolyte. Physical Review Fluids, 2020, 5, .	2.5	7
71	Vortices of electro-osmotic flow in heterogeneous porous media. Physical Review Fluids, 2020, 5, .	2.5	10
72	Freezing point depression and freeze-thaw damage by nanofluidic salt trapping. Physical Review Fluids, 2020, 5, .	2.5	15

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73	Editorsâ€™ Choiceâ€”Perspectiveâ€”Challenges in Moving to Multiscale Battery Models: Where Electrochemistry Meets and Demands More from Math. Journal of the Electrochemical Society, 2020, 167, 133501.	2.9	12
74	Modeling the Metalâ€“Insulator Phase Transition in $\text{Li}_x\text{CoO}_2$ for Energy and Information Storage. Advanced Functional Materials, 2019, 29, 1902821.	14.9	40
75	Population dynamics of driven autocatalytic reactive mixtures. Physical Review E, 2019, 100, 012144.	2.1	19
76	Evolution of the Solidâ€“Electrolyte Interphase on Carbonaceous Anodes Visualized by Atomic-Resolution Cryogenic Electron Microscopy. Nano Letters, 2019, 19, 5140-5148.	9.1	132
77	Theory of Surface Forces in Multivalent Electrolytes. Langmuir, 2019, 35, 11550-11565.	3.5	47
78	Linear Stability Analysis of Transient Electrodeposition in Charged Porous Media: Suppression of Dendritic Growth by Surface Conduction. Journal of the Electrochemical Society, 2019, 166, A2280-A2299.	2.9	20
79	Active control of viscous fingering using electric fields. Nature Communications, 2019, 10, 4002.	12.8	40
80	Electrochemical impedance of electrodiffusion in charged medium under dc bias. Physical Review E, 2019, 100, 042204.	2.1	6
81	Dip-coating of suspensions. Soft Matter, 2019, 15, 252-261.	2.7	48
82	Multiscale poromechanics of wet cement paste. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 10652-10657.	7.1	38
83	Impact of network heterogeneity on electrokinetic transport in porous media. Journal of Colloid and Interface Science, 2019, 553, 451-464.	9.4	26
84	Critical Knowledge Gaps in Mass Transport through Single-Digit Nanopores: A Review and Perspective. Journal of Physical Chemistry C, 2019, 123, 21309-21326.	3.1	234
85	Electrochemical Kinetics of SEI Growth on Carbon Black: Part I. Experiments. Journal of the Electrochemical Society, 2019, 166, E97-E106.	2.9	85
86	Electrochemical Kinetics of SEI Growth on Carbon Black: Part II. Modeling. Journal of the Electrochemical Society, 2019, 166, E107-E118.	2.9	65
87	Capillary Stress and Structural Relaxation in Moist Granular Materials. Langmuir, 2019, 35, 4397-4402.	3.5	17
88	Data-driven prediction of battery cycle life before capacity degradation. Nature Energy, 2019, 4, 383-391.	39.5	1,237
89	pH Sensor Benchmarking: A Protocol to Characterize pH Sensing Materials and Systems (Small) Tj ETQq1 1 0.784314 rgBT /Overlock 10	8.6	0
90	The Materials Research Platform: Defining the Requirements from User Stories. Matter, 2019, 1, 1433-1438.	10.0	19

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91	Continuous Separation of Radionuclides from Contaminated Water by Shock Electrodialysis. Environmental Science & Technology, 2019, 54, 527-536.	10.0	39
92	A Protocol to Characterize pH Sensing Materials and Systems. Small Methods, 2019, 3, 1800265.	8.6	8
93	Microscopic theory of capillary pressure hysteresis based on pore-space accessivity and radius-resolved saturation. Chemical Engineering Science, 2019, 196, 225-246.	3.8	7
94	Capillary filtering of particles during dip coating. Physical Review Fluids, 2019, 4, .	2.5	22
95	Deionization shock driven by electroconvection in a circular channel. Physical Review Fluids, 2019, 4, .	2.5	14
96	Spin-glass charge ordering in ionic liquids. Physical Review Materials, 2019, 3, .	2.4	11
97	Toward Optimal Performance and In-Depth Understanding of Spinel $\text{Li}_{0.4}\text{Ti}_{0.5}\text{O}_{12}$ Electrodes through Phase Field Modeling. Advanced Functional Materials, 2018, 28, 1705992.	14.9	43
98	Theory of voltammetry in charged porous media. Journal of Electroanalytical Chemistry, 2018, 811, 105-120.	3.8	7
99	Theory of water treatment by capacitive deionization with redox active porous electrodes. Water Research, 2018, 132, 282-291.	11.3	86
100	In-situ visualization of solute-driven phase coexistence within individual nanorods. Nature Communications, 2018, 9, 1775.	12.8	19
101	Electrochemical Impedance Imaging via the Distribution of Diffusion Times. Physical Review Letters, 2018, 120, 116001.	7.8	71
102	Interactions between Lithium Growths and Nanoporous Ceramic Separators. Joule, 2018, 2, 2434-2449.	24.0	180
103	Fluid-enhanced surface diffusion controls intraparticle phase transformations. Nature Materials, 2018, 17, 915-922.	27.5	104
104	Theory of the Double Layer in Water-in-Salt Electrolytes. Journal of Physical Chemistry Letters, 2018, 9, 5840-5846.	4.6	140
105	Size-dependent phase morphologies in $\text{LiFePO}_4$ battery particles. Electrochemistry Communications, 2018, 95, 33-37.	4.7	40
106	Inferring pore connectivity from sorption hysteresis in multiscale porous media. Journal of Colloid and Interface Science, 2018, 532, 118-127.	9.4	35
107	Thermodynamics of Ion Separation by Electrosorption. Environmental Science & Technology, 2018, 52, 10196-10204.	10.0	50
108	Interplay of phase boundary anisotropy and electro-auto-catalytic surface reactions on the lithium intercalation dynamics in $\text{Li}_{0.24}\text{X}_{0.28}$ plateletlike nanoparticles. Physical Review Materials, 2018, 2, .		

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109	Phase separation of stable colloidal clusters. Physical Review Materials, 2018, 2, .	2.4	3
110	A soft non-porous separator and its effectiveness in stabilizing Li metal anodes cycling at 10 mA cm <sup>-2</sup> observed in situ in a capillary cell. Journal of Materials Chemistry A, 2017, 5, 4300-4307.	10.3	66
111	Thermodynamic stability of driven open systems and control of phase separation by electro-autocatalysis. Faraday Discussions, 2017, 199, 423-463.	3.2	88
112	Intercalation Kinetics in Multiphase-Layered Materials. Journal of Physical Chemistry C, 2017, 121, 12505-12523.	3.1	71
113	Multiphase Porous Electrode Theory. Journal of the Electrochemical Society, 2017, 164, E3291-E3310.	2.9	138
114	Theory of linear sweep voltammetry with diffuse charge: Unsupported electrolytes, thin films, and leaky membranes. Physical Review E, 2017, 95, 033303.	2.1	35
115	In Situ Observation and Mathematical Modeling of Lithium Distribution within Graphite. Journal of the Electrochemical Society, 2017, 164, E3063-E3072.	2.9	58
116	Liquid cell transmission electron microscopy observation of lithium metal growth and dissolution: Root growth, dead lithium and lithium flotsams. Nano Energy, 2017, 32, 271-279.	16.0	361
117	Electrokinetic Control of Viscous Fingering. Physical Review Letters, 2017, 119, 174501.	7.8	37
118	Using Scanning Transmission X-ray Microscopy to Reveal the Origin of Lithium Compositional Spatiodynamics in Battery Materials. Microscopy and Microanalysis, 2017, 23, 888-889.	0.4	0
119	Nanotribology and voltage-controlled friction: general discussion. Faraday Discussions, 2017, 199, 349-376.	3.2	0
120	Electrovariable nanoplasmonics: general discussion. Faraday Discussions, 2017, 199, 603-613.	3.2	1
121	Electroactuators: from understanding to micro-robotics and energy conversion: general discussion. Faraday Discussions, 2017, 199, 525-545.	3.2	2
122	Electrotunable wetting, and micro- and nanofluidics: general discussion. Faraday Discussions, 2017, 199, 195-237.	3.2	2
123	Understanding the electrochemical behaviour of LSM-based SOFC cathodes. Part II - Mechanistic modelling and physically-based interpretation. Solid State Ionics, 2017, 303, 181-190.	2.7	23
124	Explaining key properties of lithiation in $\text{TiO}_2$ -anatase Li-ion battery electrodes using phase-field modeling. Physical Review Materials, 2017, 1, .	2.4	37
125	Resistive Switching in Aqueous Nanopores by Shock Electrodeposition. Electrochimica Acta, 2016, 222, 370-375.	5.2	10
126	Li Intercalation into Graphite: Direct Optical Imaging and Cahn-Hilliard Reaction Dynamics. Journal of Physical Chemistry Letters, 2016, 7, 2151-2156.	4.6	92



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127	Performance and Degradation of A Lithium-Bromine Rechargeable Fuel Cell Using Highly Concentrated Catholytes. <i>Electrochimica Acta</i> , 2016, 202, 216-223.	5.2	19
128	Asymmetric collapse by dissolution or melting in a uniform flow. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2016, 472, 20150531.	2.1	10
129	Soft Multifaced and Patchy Colloids by Constrained Volume Self-Assembly. <i>Macromolecules</i> , 2016, 49, 3580-3585.	4.8	45
130	Origin and hysteresis of lithium compositional spatiodynamics within battery primary particles. <i>Science</i> , 2016, 353, 566-571.	12.6	367
131	Transition of lithium growth mechanisms in liquid electrolytes. <i>Energy and Environmental Science</i> , 2016, 9, 3221-3229.	30.8	1,054
132	Analysis of electrolyte transport through charged nanopores. <i>Physical Review E</i> , 2016, 93, 053108.	2.1	119
133	Membraneless flow battery leveraging flow-through heterogeneous porous media for improved power density and reduced crossover. <i>RSC Advances</i> , 2016, 6, 100209-100213.	3.6	22
134	Analysis of ionic conductance of carbon nanotubes. <i>Physical Review E</i> , 2016, 94, 050601.	2.1	57
135	Dendrite Suppression by Shock Electrodeposition in Charged Porous Media. <i>Scientific Reports</i> , 2016, 6, 28054.	3.3	45
136	Exact solutions and physical analogies for unidirectional flows. <i>Physical Review Fluids</i> , 2016, 1, .	2.5	23
137	Electrokinetics meets electrohydrodynamics. <i>Journal of Fluid Mechanics</i> , 2015, 782, 1-4.	3.4	37
138	Hysteresis from Multiscale Porosity: Modeling Water Sorption and Shrinkage in Cement Paste. <i>Physical Review Applied</i> , 2015, 3, .	3.8	112
139	Modelling Hysteresis in the Water Sorption and Drying Shrinkage of Cement Paste. , 2015, , .		3
140	Scalable and Continuous Water Deionization by Shock Electrodialysis. <i>Environmental Science and Technology Letters</i> , 2015, 2, 367-372.	8.7	78
141	Heterogeneous electrocatalysis in porous cathodes of solid oxide fuel cells. <i>Electrochimica Acta</i> , 2015, 159, 71-80.	5.2	29
142	A dual-mode rechargeable lithium-bromine/oxygen fuel cell. <i>Journal of Materials Chemistry A</i> , 2015, 3, 14165-14172.	10.3	17
143	Homogenization of the Poisson-Nernst-Planck equations for Ion Transport in Charged Porous Media. <i>SIAM Journal on Applied Mathematics</i> , 2015, 75, 1369-1401.	1.8	72
144	Simple formula for asymmetric Marcus-Hush kinetics. <i>Journal of Electroanalytical Chemistry</i> , 2015, 748, 52-57.	3.8	30

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145	Experimental Verification of Overlimiting Current by Surface Conduction and Electro-Osmotic Flow in Microchannels. <i>Physical Review Letters</i> , 2015, 114, 114501.	7.8	112
146	Multicomponent Gas Diffusion in Porous Electrodes. <i>Journal of the Electrochemical Society</i> , 2015, 162, F613-F621.	2.9	38
147	Inertial effects on the generation of co-laminar flows. <i>Journal of Fluid Mechanics</i> , 2015, 767, 85-94.	3.4	9
148	A zinc-iron redox-flow battery under \$100 per kW h of system capital cost. <i>Energy and Environmental Science</i> , 2015, 8, 2941-2945.	30.8	185
149	Water purification by shock electrodialysis: Deionization, filtration, separation, and disinfection. <i>Desalination</i> , 2015, 357, 77-83.	8.2	101
150	Effect of concentration polarization on permselectivity. <i>Physical Review E</i> , 2014, 89, 012302.	2.1	61
151	Electrochemical Impedance of a Battery Electrode with Anisotropic Active Particles. <i>Electrochimica Acta</i> , 2014, 131, 214-227.	5.2	19
152	Internal resistance matching for parallel-connected lithium-ion cells and impacts on battery pack cycle life. <i>Journal of Power Sources</i> , 2014, 252, 8-13.	7.8	203
153	Attractive forces in microporous carbon electrodes for capacitive deionization. <i>Journal of Solid State Electrochemistry</i> , 2014, 18, 1365-1376.	2.5	256
154	Charge transfer kinetics at the solid-solid interface in porous electrodes. <i>Nature Communications</i> , 2014, 5, 3585.	12.8	205
155	Phase Separation Dynamics in Isotropic Ion-Intercalation Particles. <i>SIAM Journal on Applied Mathematics</i> , 2014, 74, 980-1004.	1.8	46
156	Particle-Level Modeling of the Charge-Discharge Behavior of Nanoparticulate Phase-Separating Li-Ion Battery Electrodes. <i>Journal of the Electrochemical Society</i> , 2014, 161, A535-A546.	2.9	69
157	Phase Transformation Dynamics in Porous Battery Electrodes. <i>Electrochimica Acta</i> , 2014, 146, 89-97.	5.2	101
158	Simple formula for Marcus-Hush-Chidsey kinetics. <i>Journal of Electroanalytical Chemistry</i> , 2014, 735, 77-83.	3.8	82
159	Current-induced transition from particle-by-particle to concurrent intercalation in phase-separating battery electrodes. <i>Nature Materials</i> , 2014, 13, 1149-1156.	27.5	274
160	Over-limiting Current and Control of Dendritic Growth by Surface Conduction in Nanopores. <i>Scientific Reports</i> , 2014, 4, 7056.	3.3	92
161	Cahn-Hilliard Reaction Model for Isotropic Li-ion Battery Particles. <i>Materials Research Society Symposia Proceedings</i> , 2013, 1542, 1.	0.1	9
162	Theory of Chemical Kinetics and Charge Transfer based on Nonequilibrium Thermodynamics. <i>Accounts of Chemical Research</i> , 2013, 46, 1144-1160.	15.6	529

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163	Membrane-less hydrogen bromine flow battery. Nature Communications, 2013, 4, 2346.	12.8	174
164	Rate-Dependent Morphology of $\text{Li}_2\text{O}_2$ Growth in $\text{Li}^+\text{O}_2$ Batteries. Journal of Physical Chemistry Letters, 2013, 4, 4217-4222.	4.6	136
165	Interpretation of Full Sorption-Desorption Isotherms as a Tool for Understanding Concrete Pore Structure. , 2013, , .		1
166	Boundary Layer Analysis of Membraneless Electrochemical Cells. Journal of the Electrochemical Society, 2013, 160, A2056-A2063.	2.9	44
167	Nonlinear dynamics of ion concentration polarization in porous media: The leaky membrane model. AIChE Journal, 2013, 59, 3539-3555.	3.6	66
168	Anisometric charge dependent swelling of porous carbon in an ionic liquid. Electrochemistry Communications, 2013, 34, 196-199.	4.7	59
169	Effects of Nanoparticle Geometry and Size Distribution on Diffusion Impedance of Battery Electrodes. Journal of the Electrochemical Society, 2013, 160, A15-A24.	2.9	220
170	Electro-diffusion of ions in porous electrodes for capacitive extraction of renewable energy from salinity differences. Electrochimica Acta, 2013, 92, 304-314.	5.2	76
171	Theory of Coherent Nucleation in Phase-Separating Nanoparticles. Nano Letters, 2013, 13, 3036-3041.	9.1	145
172	Theory of SEI Formation in Rechargeable Batteries: Capacity Fade, Accelerated Aging and Lifetime Prediction. Journal of the Electrochemical Society, 2013, 160, A243-A250.	2.9	682
173	Overlimiting Current and Shock Electrodialysis in Porous Media. Langmuir, 2013, 29, 16167-16177.	3.5	126
174	Efficient Conservative Numerical Schemes for 1D Nonlinear Spherical Diffusion Equations with Applications in Battery Modeling. Journal of the Electrochemical Society, 2013, 160, A1565-A1571.	2.9	46
175	Numerical and Analytic Modeling of a Membraneless Hydrogen Bromine Laminar Flow Batter. ECS Transactions, 2013, 53, 51-62.	0.5	8
176	AC Electro-Osmotic Flow. , 2013, , 1-9.		0
177	Nonlinear Electrokinetic Phenomena. , 2013, , 1-13.		0
178	Electrokinetic Motion of Polarizable Particles. , 2013, , 1-11.		0
179	Nonequilibrium Thermodynamics of Porous Electrodes. Journal of the Electrochemical Society, 2012, 159, A1967-A1985.	2.9	265
180	Effects of electrostatic correlations on electrokinetic phenomena. Physical Review E, 2012, 86, 056303.	2.1	126

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181	Current-Induced Membrane Discharge. Physical Review Letters, 2012, 109, 108301.	7.8	134
182	Theory of sorption hysteresis in nanoporous solids: Part I. Journal of the Mechanics and Physics of Solids, 2012, 60, 1644-1659.	4.8	41
183	Theory of sorption hysteresis in nanoporous solids: Part II Molecular condensation. Journal of the Mechanics and Physics of Solids, 2012, 60, 1660-1675.	4.8	41
184	Time-dependent ion selectivity in capacitive charging of porous electrodes. Journal of Colloid and Interface Science, 2012, 384, 38-44.	9.4	213
185	Coherency Strain and the Kinetics of Phase Separation in LiFePO <sub>4</sub> Nanoparticles. ACS Nano, 2012, 6, 2215-2225.	14.6	347
186	Electrochemistry and capacitive charging of porous electrodes in asymmetric multicomponent electrolytes. Russian Journal of Electrochemistry, 2012, 48, 580-592.	0.9	134
187	Suppression of Phase Separation in LiFePO <sub>4</sub> Nanoparticles During Battery Discharge. Nano Letters, 2011, 11, 4890-4896.	9.1	404
188	Overlimiting Current in a Microchannel. Physical Review Letters, 2011, 107, 118301.	7.8	217
189	Double Layer in Ionic Liquids: Overscreening versus Crowding. Physical Review Letters, 2011, 106, 046102.	7.8	828
190	Diffuse charge and Faradaic reactions in porous electrodes. Physical Review E, 2011, 83, 061507.	2.1	216
191	Corrections to the Central Limit Theorem for Heavy-tailed Probability Densities. Journal of Theoretical Probability, 2011, 24, 895-927.	0.8	7
192	Induced-charge electrophoresis near a wall. Electrophoresis, 2011, 32, 614-628.	2.4	63
193	Unified nano-mechanics based probabilistic theory of quasibrittle and brittle structures: I. Strength, static crack growth, lifetime and scaling. Journal of the Mechanics and Physics of Solids, 2011, 59, 1291-1321.	4.8	150
194	Deionization shocks in microstructures. Physical Review E, 2011, 84, 061504.	2.1	125
195	Induced-Charge Electrokinetic Phenomena. , 2011, , 221-297.		17
196	Effective slip boundary conditions for arbitrary periodic surfaces: the surface mobility tensor. Journal of Fluid Mechanics, 2010, 658, 409-437.	3.4	109
197	Fast spot-based multiscale simulations of granular drainage. Powder Technology, 2010, 200, 1-11.	4.2	16
198	Induced-charge electrokinetic phenomena. Current Opinion in Colloid and Interface Science, 2010, 15, 203-213.	7.4	223

#	ARTICLE	IF	CITATIONS
199	Electrodifusiophoresis: Particle motion in electrolytes under direct current. Physics of Fluids, 2010, 22, 112109.	4.0	44
200	Anisotropic electro-osmotic flow over super-hydrophobic surfaces. Journal of Fluid Mechanics, 2010, 644, 245-255.	3.4	100
201	Diffuse-charge effects on the transient response of electrochemical cells. Physical Review E, 2010, 81, 021503.	2.1	100
202	Droplet breakup in flow past an obstacle: A capillary instability due to permeability variations. Europhysics Letters, 2010, 92, 54002.	2.0	63
203	Particle Size Dependence of the Ionic Diffusivity. Nano Letters, 2010, 10, 4123-4127.	9.1	641
204	Effective zero-thickness model for a conductive membrane driven by an electric field. Physical Review E, 2010, 81, 031912.	2.1	37
205	Transverse flow in thin superhydrophobic channels. Physical Review E, 2010, 82, 055301.	2.1	39
206	Nonlinear dynamics of capacitive charging and desalination by porous electrodes. Physical Review E, 2010, 81, 031502.	2.1	271
207	Strongly nonlinear dynamics of electrolytes in large ac voltages. Physical Review E, 2010, 82, 011501.	2.1	115
208	Diffusion-limited aggregation on curved surfaces. Europhysics Letters, 2010, 91, 46005.	2.0	12
209	Ultrafast high-pressure AC electro-osmotic pumps for portable biomedical microfluidics. Lab on A Chip, 2010, 10, 80-85.	6.0	86
210	Diffuse Charge Effects in Fuel Cell Membranes. Journal of the Electrochemical Society, 2009, 156, B225.	2.9	53
211	Subcritical crack growth law and its consequences for lifetime statistics and size effect of quasibrittle structures. Journal Physics D: Applied Physics, 2009, 42, 214008.	2.8	29
212	Lifetime of high-k gate dielectrics and analogy with strength of quasibrittle structures. Journal of Applied Physics, 2009, 106, .	2.5	16
213	Nonlinear electrokinetics at large voltages. New Journal of Physics, 2009, 11, 075016.	2.9	83
214	Towards an understanding of induced-charge electrokinetics at large applied voltages in concentrated solutions. Advances in Colloid and Interface Science, 2009, 152, 48-88.	14.7	742
215	Imposed currents in galvanic cells. Electrochimica Acta, 2009, 54, 4857-4871.	5.2	112
216	Assessing continuum postulates in simulations of granular flow. Journal of the Mechanics and Physics of Solids, 2009, 57, 828-839.	4.8	62

#	ARTICLE	IF	CITATIONS
217	Electrostatic and electrokinetic contributions to the elastic moduli of a driven membrane. European Physical Journal E, 2009, 28, 243-264.	1.6	51
218	Effective Slip over Superhydrophobic Surfaces in Thin Channels. Physical Review Letters, 2009, 102, 026001.	7.8	139
219	Topology and shape optimization of induced-charge electro-osmotic micropumps. New Journal of Physics, 2009, 11, 075019.	2.9	45
220	Size-Dependent Spinodal and Miscibility Gaps for Intercalation in Nanoparticles. Nano Letters, 2009, 9, 3795-3800.	9.1	170
221	Scaling of strength and lifetime probability distributions of quasibrittle structures based on atomistic fracture mechanics. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 11484-11489.	7.1	94
222	Intercalation dynamics in rechargeable battery materials: General theory and phase-transformation waves in LiFePO <sub>4</sub> . Electrochimica Acta, 2008, 53, 7599-7613.	5.2	281
223	Induced-Charge Electrophoresis of Metallodielectric Particles. Physical Review Letters, 2008, 100, 058302.	7.8	427
224	AC Electro-Osmotic Flow. , 2008, , 8-14.		3
225	Steric effects on ac electro-osmosis in dilute electrolytes. Physical Review E, 2008, 77, 036317.	2.1	114
226	Design principle for improved three-dimensional ac electro-osmotic pumps. Physical Review E, 2008, 77, 055303.	2.1	24
227	Tensorial hydrodynamic slip. Journal of Fluid Mechanics, 2008, 613, 125-134.	3.4	172
228	Nonlinear Electrokinetic Phenomena. , 2008, , 1461-1470.		7
229	The stochastic flow rule: a multi-scale model for granular plasticity. Modelling and Simulation in Materials Science and Engineering, 2007, 15, S449-S464.	2.0	19
230	Stochastic flow rule for granular materials. Physical Review E, 2007, 75, 041301.	2.1	64
231	The effect of step height on the performance of three-dimensional ac electro-osmotic microfluidic pumps. Journal of Colloid and Interface Science, 2007, 309, 332-341.	9.4	73
232	Surface conservation laws at microscopically diffuse interfaces. Journal of Colloid and Interface Science, 2007, 315, 319-329.	9.4	37
233	Steric effects in the dynamics of electrolytes at large applied voltages. I. Double-layer charging. Physical Review E, 2007, 75, 021502.	2.1	598
234	Steric effects in the dynamics of electrolytes at large applied voltages. II. Modified Poisson-Nernst-Planck equations. Physical Review E, 2007, 75, 021503.	2.1	408

#	ARTICLE	IF	CITATIONS
235	Theoretical prediction of fast 3D AC electro-osmotic pumps. Lab on A Chip, 2006, 6, 1455.	6.0	150
236	Fast ac electro-osmotic micropumps with nonplanar electrodes. Applied Physics Letters, 2006, 89, 143508.	3.3	181
237	The Spot Model for random-packing dynamics. Mechanics of Materials, 2006, 38, 717-731.	3.2	45
238	Breaking symmetries in induced-charge electro-osmosis and electrophoresis. Journal of Fluid Mechanics, 2006, 560, 65.	3.4	293
239	Dynamics of random packings in granular flow. Physical Review E, 2006, 73, 051306.	2.1	35
240	Interfacial dynamics in transport-limited dissolution. Physical Review E, 2006, 73, 060601.	2.1	16
241	Analysis of granular flow in a pebble-bed nuclear reactor. Physical Review E, 2006, 74, 021306.	2.1	266
242	Nonlinear electrochemical relaxation around conductors. Physical Review E, 2006, 74, 011501.	2.1	113
243	Experimental observation of induced-charge electro-osmosis around a metal wire in a microchannel. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2005, 267, 122-132.	4.7	140
244	Average Shape of Transport-Limited Aggregates. Physical Review Letters, 2005, 95, 075504.	7.8	9
245	Current-Voltage Relations for Electrochemical Thin Films. SIAM Journal on Applied Mathematics, 2005, 65, 1463-1484.	1.8	235
246	Velocity profile of granular flows inside silos and hoppers. Journal of Physics Condensed Matter, 2005, 17, S2533-S2548.	1.8	102
247	Application of the Cell Potential Method To Predict Phase Equilibria of Multicomponent Gas Hydrate Systems. Journal of Physical Chemistry B, 2005, 109, 8153-8163.	2.6	53
248	Electrochemical Thin Films at and above the Classical Limiting Current. SIAM Journal on Applied Mathematics, 2005, 65, 1485-1505.	1.8	125
249	Exact solutions of the Navier–Stokes equations having steady vortex structures. Journal of Fluid Mechanics, 2005, 541, 55.	3.4	25
250	Steady advection–diffusion around finite absorbers in two-dimensional potential flows. Journal of Fluid Mechanics, 2005, 536, 155-184.	3.4	30
251	Conformal Mapping Methods for Interfacial Dynamics. , 2005, , 1417-1451.		14
252	Elastic constants of defected and amorphous silicon with the environment-dependent interatomic potential. Physical Review B, 2004, 70, .	3.2	34

#	ARTICLE	IF	CITATIONS
253	Sulfur point defects in crystalline and amorphous silicon. Physical Review B, 2004, 70, .	3.2	44
254	Advection-diffusion-limited aggregation. Chaos, 2004, 14, S7-S7.	2.5	0
255	Transport-limited aggregation. Chaos, 2004, 14, S6-S6.	2.5	0
256	Diffuse-charge dynamics in electrochemical systems. Physical Review E, 2004, 70, 021506.	2.1	822
257	Conformal mapping of some non-harmonic functions in transport theory. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2004, 460, 1433-1452.	2.1	67
258	Diffusion and Mixing in Gravity-Driven Dense Granular Flows. Physical Review Letters, 2004, 92, 174301.	7.8	105
259	Induced-Charge Electrokinetic Phenomena: Theory and Microfluidic Applications. Physical Review Letters, 2004, 92, 066101.	7.8	588
260	Induced-charge electro-osmosis. Journal of Fluid Mechanics, 2004, 509, 217-252.	3.4	636
261	Statistical error in particle simulations of hydrodynamic phenomena. Journal of Computational Physics, 2003, 187, 274-297.	3.8	239
262	Dynamics of Conformal Maps for a Class of Non-Laplacian Growth Phenomena. Physical Review Letters, 2003, 91, 045503.	7.8	36
263	Thermodynamic behavior of a model covalent material described by the environment-dependent interatomic potential. Physical Review B, 2002, 66, .	3.2	43
264	Defect-Induced Shifts in the Elastic Constants of Silicon. Materials Research Society Symposia Proceedings, 2002, 741, 5261.	0.1	1
265	Stochastic renormalization group in percolation: I. fluctuations and crossover. Physica A: Statistical Mechanics and Its Applications, 2002, 316, 29-55.	2.6	11
266	A Two-Species Reaction-Diffusion Problem with One Static Reactant: The Case of Higher Order Kinetics. , 2002, , 1-10.		0
267	A method to extract potentials from the temperature dependence of Langmuir constants for clathrate-hydrates. Physica A: Statistical Mechanics and Its Applications, 2001, 300, 139-173.	2.6	32
268	Analysis of diffuse-layer effects on time-dependent interfacial kinetics. Journal of Electroanalytical Chemistry, 2001, 500, 52-61.	3.8	114
269	Asymptotics of reactionâ€“diffusion fronts with one static and one diffusing reactant. Physica D: Nonlinear Phenomena, 2000, 147, 95-121.	2.8	32
270	Largest cluster in subcritical percolation. Physical Review E, 2000, 62, 1660-1669.	2.1	48



#	ARTICLE	IF	CITATIONS
271	Energetic, vibrational, and electronic properties of silicon using a nonorthogonal tight-binding model. Physical Review B, 2000, 62, 4477-4487.	3.2	137
272	Front Dynamics during Diffusion-Limited Corrosion of Ramified Electrodeposits. Journal of Physical Chemistry B, 1999, 103, 5841-5851.	2.6	44
273	Interatomic potential for silicon defects and disordered phases. Physical Review B, 1998, 58, 2539-2550.	3.2	406
274	Finite-temperature molecular-dynamics study of unstable stacking fault free energies in silicon. Physical Review B, 1998, 58, 12555-12558.	3.2	23
275	Unstable Stacking Fault Free Energies in Silicon through Empirical Modeling. Materials Research Society Symposia Proceedings, 1998, 539, 175.	0.1	0
276	Interatomic Potential for Condensed Phases and Bulk Defects in Silicon. Materials Research Society Symposia Proceedings, 1997, 469, 217.	0.1	6
277	The Environment-Dependent Interatomic Potential Applied To Silicon Disordered Structures And Phase Transitions. Materials Research Society Symposia Proceedings, 1997, 491, 339.	0.1	6
278	Environment-dependent interatomic potential for bulk silicon. Physical Review B, 1997, 56, 8542-8552.	3.2	364
279	Modeling of Covalent Bonding in Solids by Inversion of Cohesive Energy Curves. Physical Review Letters, 1996, 77, 4370-4373.	7.8	112
280	Derivation of Interatomic Potentials by Inversion of Ab Initio Cohesive Energy Curves. Materials Research Society Symposia Proceedings, 1995, 408, 79.	0.1	3
281	Regulation of ramified electrochemical growth by a diffusive wave. Physical Review E, 1995, 52, 1903-1914.	2.1	34
282	Phase-Transformation Wave Dynamics in $\text{LiFePO}_4$ . Solid State Phenomena, 0, 139, 95-100.	0.3	36