Charles W Monroe

List of Publications by Year
in descending order

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76 papers	5,772 citations	136740 32 h-index	79541 73 g-index
78 all docs	78 docs citations	78 times ranked	6247 citing authors

#	Article	IF	Citations
1	Augmented saddle-point formulation of the steady-state Stefanâ€“Maxwell diffusion problem. IMA Journal of Numerical Analysis, 2022, 42, 3272-3305.	1.5	3
2	TiO₂ as Second Phase in Na₃Zr₂Si₂PO₁₂ to Suppress Dendrite Growth in Sodium Metal Solidâ€State Batteries. Advanced Energy Materials, 2022, 12, .	10.2	35
3	Consolidated theory of fluid thermodiffusion. AICHE Journal, 2022, 68, .	1.8	4
4	Anisotropic Thermal Characterisation of Largeâ€Format Lithiumâ€Ion Pouch Cells**. Batteries and Supercaps, 2022, 5, .	2.4	7
5	Review of parameterisation and a novel database (LiionDB) for continuum Li-ion battery models. Progress in Energy, 2022, 4, 032004.	4.6	35
6	Multiscale coupling of surface temperature with solid diffusion in large lithium-ion pouch cells. , 2022, 1, .		11
7	Thermodynamic factors for locally non-neutral, concentrated electrolytic fluids. Electrochimica Acta, 2021, 371, 137638.	2.6	7
8	Visualizing plating-induced cracking in lithium-anode solid-electrolyte cells. Nature Materials, 2021, 20, 1121-1129.	13.3	221
9	Modeling Lithium Transport and Electrodeposition in Ionic-Liquid Based Electrolytes. Frontiers in Energy Research, 2021, 9, .	1.2	1
10	Potentiometric MRI of a Superconcentrated Lithium Electrolyte: Testing the Irreversible Thermodynamics Approach. ACS Energy Letters, 2021, 6, 3086-3095.	8.8	33
11	Transport of secondary carriers in a solid lithium-ion conductor. Electrochimica Acta, 2021, 389, 138563.	2.6	1
12	Image-Based Mechanical Balancing of Reservoir Volumes During Benchtop Flow Battery Operation. Frontiers in Chemical Engineering, 2021, 3, .	1.3	1
13	Composition-dependent thermodynamic and mass-transport characterization of lithium hexafluorophosphate in propylene carbonate. Electrochimica Acta, 2020, 332, 135085.	2.6	42
14	Shifting-reference concentration cells to refine composition-dependent transport characterization of binary lithium-ion electrolytes. Electrochimica Acta, 2020, 358, 136688.	2.6	22
15	Investigation of Pathâ€Dependent Degradation in Lithiumâ€Ion Batteries**. Batteries and Supercaps, 2020, 3, 1377-1385.	2.4	77
16	Parameterization of prismatic lithiumâ€“ironâ€“phosphate cells through a streamlined thermal/electrochemical model. Journal of Power Sources, 2020, 453, 227787.	4.0	9
17	Multiscale Lithium-Battery Modeling from Materials to Cells. Annual Review of Chemical and Biomolecular Engineering, 2020, 11, 277-310.	3.3	25
18	High-Voltage Metal-Free Disproportionation Flow Batteries Based on 9,10-diphenylanthracene. Journal of the Electrochemical Society, 2020, 167, 070517.	1.3	2

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19	Mechanics of the Ideal Double-Layer Capacitor. Journal of the Electrochemical Society, 2020, 167, 013550.	1.3	5
20	Faster Lead-Acid Battery Simulations from Porous-Electrode Theory: Part I. Physical Model. Journal of the Electrochemical Society, 2019, 166, A2363-A2371.	1.3	16
21	Faster Lead-Acid Battery Simulations from Porous-Electrode Theory: Part II. Asymptotic Analysis. Journal of the Electrochemical Society, 2019, 166, A2372-A2382.	1.3	16
22	Dendrite nucleation in lithium-conductive ceramics. Physical Chemistry Chemical Physics, 2019, 21, 20354-20359.	1.3	53
23	Adaptive Observer for Charge-State and Crossover Estimation in Disproportionation Redox Flow Batteries undergoing Self-Discharge. , 2019, , .		4
24	Augmented State Observer for Simultaneous Estimation of Charge State and Crossover in Self-Discharging Disproportionation Redox Flow Batteries. , 2019, , .		1
25	Nonaqueous vanadium disproportionation flow batteries with porous separators cycle stably and tolerate high current density. Journal of Power Sources, 2019, 412, 384-390.	4.0	15
26	Exploration of Novel Magnesium Battery Electrolytes based on Inorganic Salts. ECS Transactions, 2017, 77, 23-31.	0.3	1
27	New Foundations of Newmanâ€™s Theory for Solid Electrolytes: Thermodynamics and Transient Balances. Journal of the Electrochemical Society, 2017, 164, E3647-E3660.	1.3	30
28	Does Oxygen Transport Affect the Cell Voltages of Metal/Air Batteries?. Journal of the Electrochemical Society, 2017, 164, E3547-E3551.	1.3	14
29	Multifunctional Water Sensors for pH, ORP, and Conductivity Using Only Microfabricated Platinum Electrodes. Sensors, 2017, 17, 1655.	2.1	19
30	Computational Model of Magnesium Deposition and Dissolution for Property Determination via Cyclic Voltammetry. Journal of the Electrochemical Society, 2016, 163, A1813-A1821.	1.3	21
31	Spectroelectrochemistry of Vanadium Acetylacetonate and Chromium Acetylacetonate for Symmetric Nonaqueous Flow Batteries. Journal of the Electrochemical Society, 2016, 163, A1239-A1246.	1.3	18
32	Capacity-limiting mechanisms in Li/O₂batteries. Physical Chemistry Chemical Physics, 2016, 18, 22840-22851.	1.3	29
33	Models to Couple Mechanics and Electrochemical Transport in Solid Electrolytes. ECS Transactions, 2016, 75, 659-670.	0.3	1
34	Mg/O₂ Battery Based on the Magnesiumâ€“Aluminum Chloride Complex (MACC) Electrolyte. Chemistry of Materials, 2016, 28, 7629-7637.	3.2	25
35	Resolving a Discrepancy in Diffusion Potentials, with a Case Study for Li-Ion Batteries. Journal of the Electrochemical Society, 2016, 163, E223-E229.	1.3	33
36	Correlating Li/O₂ Cell Capacity and Product Morphology with Discharge Current. ACS Applied Materials & Interfaces, 2015, 7, 7670-7678.	4.0	66

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37	Identifying the Discharge Product and Reaction Pathway for a Secondary Mg/O₂ Battery. Chemistry of Materials, 2015, 27, 7564-7568.	3.2	57
38	How Dopants Can Enhance Charge Transport in Li₂O₂. Chemistry of Materials, 2015, 27, 839-847.	3.2	79
39	Nonequilibrium Linear Response Theory: Application to Onsagerâ€“Stefanâ€“Maxwell Diffusion. Industrial & Engineering Chemistry Research, 2015, 54, 4460-4467.	1.8	11
40	Impact of Space-Charge Layers on Sudden Death in Li/O₂ Batteries. Journal of Physical Chemistry Letters, 2015, 6, 3017-3022.	2.1	53
41	On the characterization of battery electrolytes with polarization cells. Electrochimica Acta, 2015, 167, 357-363.	2.6	15
42	Towards a Safe Lithiumâ€“Sulfur Battery with a Flameâ€Inhibiting Electrolyte and a Sulfurâ€Based Composite Cathode. Angewandte Chemie, 2014, 126, 10263-10268.	1.6	20
43	Hierarchical Sulfurâ€Based Cathode Materials with Long Cycle Life for Rechargeable Lithium Batteries. ChemSusChem, 2014, 7, 563-569.	3.6	82
44	Ionic Mobility and Diffusivity. , 2014, , 1125-1130.		3
45	Solvents and supporting electrolytes for vanadium acetylacetonate flow batteries. Journal of Power Sources, 2014, 248, 1299-1305.	4.0	73
46	Development of a disposable electrode modified with carbonized, grapheneâ€loaded nanofiber for the detection of dopamine in human serum. Journal of Applied Polymer Science, 2014, 131, .	1.3	8
47	Towards a Safe Lithiumâ€“Sulfur Battery with a Flameâ€Inhibiting Electrolyte and a Sulfurâ€Based Composite Cathode. Angewandte Chemie - International Edition, 2014, 53, 10099-10104.	7.2	178
48	TPPi as a flame retardant for rechargeable lithium batteries with sulfur composite cathodes. Chemical Communications, 2014, 50, 7011-7013.	2.2	52
49	Electrochemistry of Magnesium Electrolytes in Ionic Liquids for Secondary Batteries. ACS Applied Materials & Interfaces, 2014, 6, 18033-18039.	4.0	96
50	Thermoelectrochemical simulations of performance and abuse in 50-Ah automotive cells. Journal of Power Sources, 2014, 268, 625-633.	4.0	63
51	Solute-volume effects in electrolyte transport. Electrochimica Acta, 2014, 135, 447-460.	2.6	43
52	Rate dependence of swelling in lithium-ion cells. Journal of Power Sources, 2014, 267, 197-202.	4.0	152
53	High-accuracy calculations of sixteen collision integrals for Lennard-Jones (12â€“6) gases and their interpolation to parameterize neon, argon, and krypton. Journal of Computational Physics, 2014, 273, 358-373.	1.9	37
54	Nonflammable electrolyte for rechargeable lithium battery with sulfur based composite cathode materials. Journal of Power Sources, 2013, 223, 18-22.	4.0	51

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55	Carbonylâ€Î²â€Cyclodextrin as a Novel Binder for Sulfur Composite Cathodes in Rechargeable Lithium Batteries. Advanced Functional Materials, 2013, 23, 1194-1201.	7.8	240
56	Continuum transport laws for locally non-neutral concentrated electrolytes. Electrochimica Acta, 2013, 114, 649-657.	2.6	24
57	Increasing the rate capability of batteries with electrolyte flow. Applied Energy, 2013, 103, 207-211.	5.1	18
58	Dual-mode sulfur-based cathode materials for rechargeable Liâ€“S batteries. Chemical Communications, 2012, 48, 7868.	2.2	49
59	Liquid Crystal Order in Colloidal Suspensions of Spheroidal Particles by Direct Current Electric Field Assembly. Small, 2012, 8, 1551-1562.	5.2	71
60	Degradation mechanisms in the non-aqueous vanadium acetylacetonate redox flow battery. Journal of Power Sources, 2012, 206, 490-496.	4.0	111
61	Electrode kinetics in non-aqueous vanadium acetylacetonate redox flow batteries. Journal of Applied Electrochemistry, 2011, 41, 1191-1199.	1.5	75
62	Vaporization-exchange model for dynamic water sorption in Nafion: Transient solution. Electrochemistry Communications, 2011, 13, 5-7.	2.3	10
63	Non-aqueous manganese acetylacetonate electrolyte for redox flow batteries. Journal of Power Sources, 2011, 196, 5742-5745.	4.0	168
64	Direct in situ measurements of Li transport in Li-ion battery negative electrodes. Chemical Physics Letters, 2010, 485, 265-274.	1.2	362
65	Non-aqueous chromium acetylacetonate electrolyte for redox flow batteries. Electrochemistry Communications, 2010, 12, 1634-1637.	2.3	189
66	Ultra-Low-Voltage Electrowetting. Journal of Physical Chemistry C, 2010, 114, 14885-14890.	1.5	43
67	Double-Layer Effects in Electrowetting with Two Conductive Liquids. Journal of the Electrochemical Society, 2009, 156, P21.	1.3	25
68	Onsager's shortcut to proper forces and fluxes. Chemical Engineering Science, 2009, 64, 4804-4809.	1.9	18
69	A vaporization-exchange model for water sorption and flux in Nafion. Journal of Membrane Science, 2008, 324, 1-6.	4.1	60
70	The distinctive electrowetting properties of ITIES. Journal of Physics Condensed Matter, 2007, 19, 375113.	0.7	10
71	Onsager Reciprocal Relations for Stefanâ"Maxwell Diffusion. Industrial & Engineering Chemistry Research, 2006, 45, 5361-5367.	1.8	25
72	Principles of electrowetting with two immiscible electrolytic solutions. Journal of Physics Condensed Matter, 2006, 18, 2837-2869.	0.7	23

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73	Electrowetting with Electrolytes. Physical Review Letters, 2006, 97, 136102.	2.9	53
74	The Impact of Elastic Deformation on Deposition Kinetics at Lithium/Polymer Interfaces. Journal of the Electrochemical Society, 2005, 152, A396.	1.3	1,266
75	The Effect of Interfacial Deformation on Electrodeposition Kinetics. Journal of the Electrochemical Society, 2004, 151, A880.	1.3	310
76	Dendrite Growth in Lithium/Polymer Systems. Journal of the Electrochemical Society, 2003, 150, A1377.	1.3	643