Charles W Monroe

List of Publications by Year
in descending order

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	The Impact of Elastic Deformation on Deposition Kinetics at Lithium/Polymer Interfaces. Journal of the Electrochemical Society, 2005, 152, A396.	1.3	1,266
2	Dendrite Growth in Lithium/Polymer Systems. Journal of the Electrochemical Society, 2003, 150, A1377.	1.3	643
3	Direct in situ measurements of Li transport in Li-ion battery negative electrodes. Chemical Physics Letters, 2010, 485, 265-274.	1.2	362
4	The Effect of Interfacial Deformation on Electrodeposition Kinetics. Journal of the Electrochemical Society, 2004, 151, A880.	1.3	310
5	Carbonylâ€<i>Î²</i>â€Cyclodextrin as a Novel Binder for Sulfur Composite Cathodes in Rechargeable Lithium Batteries. Advanced Functional Materials, 2013, 23, 1194-1201.	7.8	240
6	Visualizing plating-induced cracking in lithium-anode solid-electrolyte cells. Nature Materials, 2021, 20, 1121-1129.	13.3	221
7	Non-aqueous chromium acetylacetonate electrolyte for redox flow batteries. Electrochemistry Communications, 2010, 12, 1634-1637.	2.3	189
8	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
9	Non-aqueous manganese acetylacetonate electrolyte for redox flow batteries. Journal of Power Sources, 2011, 196, 5742-5745.	4.0	168
10	Rate dependence of swelling in lithium-ion cells. Journal of Power Sources, 2014, 267, 197-202.	4.0	152
11	Degradation mechanisms in the non-aqueous vanadium acetylacetonate redox flow battery. Journal of Power Sources, 2012, 206, 490-496.	4.0	111
12	Electrochemistry of Magnesium Electrolytes in Ionic Liquids for Secondary Batteries. ACS Applied Materials & Interfaces, 2014, 6, 18033-18039.	4.0	96
13	Hierarchical Sulfurâ€Based Cathode Materials with Long Cycle Life for Rechargeable Lithium Batteries. ChemSusChem, 2014, 7, 563-569.	3.6	82
14	How Dopants Can Enhance Charge Transport in Li₂O₂. Chemistry of Materials, 2015, 27, 839-847.	3.2	79
15	Investigation of Pathâ€Dependent Degradation in Lithiumâ€Ion Batteries**. Batteries and Supercaps, 2020, 3, 1377-1385.	2.4	77
16	Electrode kinetics in non-aqueous vanadium acetylacetonate redox flow batteries. Journal of Applied Electrochemistry, 2011, 41, 1191-1199.	1.5	75
17	Solvents and supporting electrolytes for vanadium acetylacetonate flow batteries. Journal of Power Sources, 2014, 248, 1299-1305.	4.0	73
18	Liquid Crystal Order in Colloidal Suspensions of Spheroidal Particles by Direct Current Electric Field Assembly. Small, 2012, 8, 1551-1562.	5.2	71

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19	Correlating Li/O₂ Cell Capacity and Product Morphology with Discharge Current. ACS Applied Materials & Interfaces, 2015, 7, 7670-7678.	4.0	66
20	Thermoelectrochemical simulations of performance and abuse in 50-Ah automotive cells. Journal of Power Sources, 2014, 268, 625-633.	4.0	63
21	A vaporization-exchange model for water sorption and flux in Nafion. Journal of Membrane Science, 2008, 324, 1-6.	4.1	60
22	Identifying the Discharge Product and Reaction Pathway for a Secondary Mg/O₂ Battery. Chemistry of Materials, 2015, 27, 7564-7568.	3.2	57
23	Electrowetting with Electrolytes. Physical Review Letters, 2006, 97, 136102.	2.9	53
24	Impact of Space-Charge Layers on Sudden Death in Li/O₂ Batteries. Journal of Physical Chemistry Letters, 2015, 6, 3017-3022.	2.1	53
25	Dendrite nucleation in lithium-conductive ceramics. Physical Chemistry Chemical Physics, 2019, 21, 20354-20359.	1.3	53
26	TPPi as a flame retardant for rechargeable lithium batteries with sulfur composite cathodes. Chemical Communications, 2014, 50, 7011-7013.	2.2	52
27	Nonflammable electrolyte for rechargeable lithium battery with sulfur based composite cathode materials. Journal of Power Sources, 2013, 223, 18-22.	4.0	51
28	Dual-mode sulfur-based cathode materials for rechargeable Liâ€“S batteries. Chemical Communications, 2012, 48, 7868.	2.2	49
29	Ultra-Low-Voltage Electrowetting. Journal of Physical Chemistry C, 2010, 114, 14885-14890.	1.5	43
30	Solute-volume effects in electrolyte transport. Electrochimica Acta, 2014, 135, 447-460.	2.6	43
31	Composition-dependent thermodynamic and mass-transport characterization of lithium hexafluorophosphate in propylene carbonate. Electrochimica Acta, 2020, 332, 135085.	2.6	42
32	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
33	TiO₂ as Second Phase in Na₃Zr₂Si₂PO₁₂ to Suppress Dendrite Growth in Sodium Metal Solidâ€State Batteries. Advanced Energy Materials, 2022, 12, .	10.2	35
34	Review of parameterisation and a novel database (LiionDB) for continuum Li-ion battery models. Progress in Energy, 2022, 4, 032004.	4.6	35
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	Potentiometric MRI of a Superconcentrated Lithium Electrolyte: Testing the Irreversible Thermodynamics Approach. ACS Energy Letters, 2021, 6, 3086-3095.	8.8	33

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37	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
38	Capacity-limiting mechanisms in Li/O₂batteries. Physical Chemistry Chemical Physics, 2016, 18, 22840-22851.	1.3	29
39	Onsager Reciprocal Relations for Stefanâˆ'Maxwell Diffusion. Industrial & Engineering Chemistry Research, 2006, 45, 5361-5367.	1.8	25
40	Double-Layer Effects in Electrowetting with Two Conductive Liquids. Journal of the Electrochemical Society, 2009, 156, P21.	1.3	25
41	Mg/O₂ Battery Based on the Magnesiumâ€"Aluminum Chloride Complex (MACC) Electrolyte. Chemistry of Materials, 2016, 28, 7629-7637.	3.2	25
42	Multiscale Lithium-Battery Modeling from Materials to Cells. Annual Review of Chemical and Biomolecular Engineering, 2020, 11, 277-310.	3.3	25
43	Continuum transport laws for locally non-neutral concentrated electrolytes. Electrochimica Acta, 2013, 114, 649-657.	2.6	24
44	Principles of electrowetting with two immiscible electrolytic solutions. Journal of Physics Condensed Matter, 2006, 18, 2837-2869.	0.7	23
45	Shifting-reference concentration cells to refine composition-dependent transport characterization of binary lithium-ion electrolytes. Electrochimica Acta, 2020, 358, 136688.	2.6	22
46	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
47	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
48	Multifunctional Water Sensors for pH, ORP, and Conductivity Using Only Microfabricated Platinum Electrodes. Sensors, 2017, 17, 1655.	2.1	19
49	Onsager's shortcut to proper forces and fluxes. Chemical Engineering Science, 2009, 64, 4804-4809.	1.9	18
50	Increasing the rate capability of batteries with electrolyte flow. Applied Energy, 2013, 103, 207-211.	5.1	18
51	Spectroelectrochemistry of Vanadium Acetylacetonate and Chromium Acetylacetonate for Symmetric Nonaqueous Flow Batteries. Journal of the Electrochemical Society, 2016, 163, A1239-A1246.	1.3	18
52	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
53	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
54	On the characterization of battery electrolytes with polarization cells. Electrochimica Acta, 2015, 167, 357-363.	2.6	15

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55	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
56	Does Oxygen Transport Affect the Cell Voltages of Metal/Air Batteries?. Journal of the Electrochemical Society, 2017, 164, E3547-E3551.	1.3	14
57	Nonequilibrium Linear Response Theory: Application to Onsagerâ€“Stefanâ€“Maxwell Diffusion. Industrial & Engineering Chemistry Research, 2015, 54, 4460-4467.	1.8	11
58	Multiscale coupling of surface temperature with solid diffusion in large lithium-ion pouch cells. , 2022, 1, .		11
59	The distinctive electrowetting properties of ITIES. Journal of Physics Condensed Matter, 2007, 19, 375113.	0.7	10
60	Vaporization-exchange model for dynamic water sorption in Nafion: Transient solution. Electrochemistry Communications, 2011, 13, 5-7.	2.3	10
61	Parameterization of prismatic lithiumâ€“ironâ€“phosphate cells through a streamlined thermal/electrochemical model. Journal of Power Sources, 2020, 453, 227787.	4.0	9
62	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
63	Thermodynamic factors for locally non-neutral, concentrated electrolytic fluids. Electrochimica Acta, 2021, 371, 137638.	2.6	7
64	Anisotropic Thermal Characterisation of Largeâ€Format Lithiumâ€Ion Pouch Cells**. Batteries and Supercaps, 2022, 5, .	2.4	7
65	Mechanics of the Ideal Double-Layer Capacitor. Journal of the Electrochemical Society, 2020, 167, 013550.	1.3	5
66	Adaptive Observer for Charge-State and Crossover Estimation in Disproportionation Redox Flow Batteries undergoing Self-Discharge. , 2019, , .		4
67	Consolidated theory of fluid thermodiffusion. AICHE Journal, 2022, 68, .	1.8	4
68	Ionic Mobility and Diffusivity. , 2014, , 1125-1130.		3
69	Augmented saddle-point formulation of the steady-state Stefanâ€“Maxwell diffusion problem. IMA Journal of Numerical Analysis, 2022, 42, 3272-3305.	1.5	3
70	High-Voltage Metal-Free Disproportionation Flow Batteries Based on 9,10-diphenylanthracene. Journal of the Electrochemical Society, 2020, 167, 070517.	1.3	2
71	Models to Couple Mechanics and Electrochemical Transport in Solid Electrolytes. ECS Transactions, 2016, 75, 659-670.	0.3	1
72	Exploration of Novel Magnesium Battery Electrolytes based on Inorganic Salts. ECS Transactions, 2017, 77, 23-31.	0.3	1

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73	Augmented State Observer for Simultaneous Estimation of Charge State and Crossover in Self-Discharging Disproportionation Redox Flow Batteries. , 2019, , .		1
74	Modeling Lithium Transport and Electrodeposition in Ionic-Liquid Based Electrolytes. Frontiers in Energy Research, 2021, 9, .	1.2	1
75	Transport of secondary carriers in a solid lithium-ion conductor. Electrochimica Acta, 2021, 389, 138563.	2.6	1
76	Image-Based Mechanical Balancing of Reservoir Volumes During Benchtop Flow Battery Operation. Frontiers in Chemical Engineering, 2021, 3, .	1.3	1