Eric J Dufek

List of Publications by Year
in descending order

113	5,492	147566	82410
papers	citations	31 h-index	72 g-index

117	117	117	5445
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Rapid failure mode classification and quantification in batteries: A deep learning modeling framework. Energy Storage Materials, 2022, 45, 1002-1011.	9.5	29
2	Methodologies for Design, Characterization and Testing of Electrolytes that Enable Extreme Fast Charging of Lithium-ion Cells. Energy Storage Materials, 2022, 44, 296-312.	9.5	19
3	Sensitivity and reliability of key electrochemical markers for detecting lithium plating during extreme fast charging. Journal of Energy Storage, 2022, 46, 103782.	3.9	11
4	Interfaces in all solid state Li-metal batteries: A review on instabilities, stabilization strategies, and scalability. Energy Storage Materials, 2022, 45, 969-1001.	9.5	36
5	Operando Synchrotron Studies of Inhomogeneity during Anode-Free Plating of Li Metal in Pouch Cell Batteries. Journal of the Electrochemical Society, 2022, 169, 020571.	1.3	12
6	Unlocking Failure Mechanisms and Improvement of Practical Liâ€“S Pouch Cells through In Operando Pressure Study. Advanced Energy Materials, 2022, 12, .	10.2	12
7	Unlocking Failure Mechanisms and Improvement of Practical Liâ€“S Pouch Cells through In Operando Pressure Study (Adv. Energy Mater. 7/2022). Advanced Energy Materials, 2022, 12, .	10.2	2
8	Developing extreme fast charge battery protocols â€“ A review spanning materials to systems. Journal of Power Sources, 2022, 526, 231129.	4.0	27
9	A Comprehensive Understanding of the Aging Effects of Extreme Fast Charging on High Ni NMC Cathode. Advanced Energy Materials, 2022, 12, .	10.2	32
10	Carbon-Binder Weight Loading Optimization for Improved Lithium-Ion Battery Rate Capability. Journal of the Electrochemical Society, 2022, 169, 070519.	1.3	7
11	Fast Diagnosis of Failure Mechanisms and Lifetime Prediction of Li Metal Batteries. Small Methods, 2021, 5, e2000807.	4.6	17
12	A Novel Framework for Optimizing Ramping Capability of Hybrid Energy Storage Systems. IEEE Transactions on Smart Grid, 2021, 12, 1651-1662.	6.2	10
13	Quantification of heterogeneous, irreversible lithium plating in extreme fast charging of lithium-ion batteries. Energy and Environmental Science, 2021, 14, 4979-4988.	15.6	58
14	Challenging Practices of Algebraic Battery Life Models through Statistical Validation and Model Identification via Machine-Learning. Journal of the Electrochemical Society, 2021, 168, 020502.	1.3	40
15	A Review of Existing and Emerging Methods for Lithium Detection and Characterization in Liâ€Ion and Liâ€Metal Batteries. Advanced Energy Materials, 2021, 11, 2100372.	10.2	114
16	High-Energy Lateral Mapping (HELM) Studies of Inhomogeneity and Failure Mechanisms in NMC622/Li Pouch Cells. Chemistry of Materials, 2021, 33, 2378-2386.	3.2	16
17	A machine learning framework for early detection of lithium plating combining multiple physics-based electrochemical signatures. Cell Reports Physical Science, 2021, 2, 100352.	2.8	27
18	Sensitivity and Reliability of Global Electrochemical Lithium Detection Signatures. ECS Meeting Abstracts, 2021, MA2021-01, 165-165.	0.0	1

#	Article	IF	Citations
19	A closed-host bi-layer dense/porous solid electrolyte interphase for enhanced lithium-metal anode stability. Materials Today, 2021, 49, 48-58.	8.3	22
20	Utilization of AFM for Observing Early-Onset Mechanisms of Lithium-Metal. ECS Meeting Abstracts, 2021, MA2021-01, 47-47.	0.0	0
21	Challenges and needs for system-level electrochemical lithium-ion battery management and diagnostics. MRS Bulletin, 2021, 46, 420-428.	1.7	16
22	Early Battery Performance Prediction for Mixed Use Charging Profiles Using Hierarchal Machine Learning. Batteries and Supercaps, 2021, 4, 1186-1196.	2.4	10
23	Early Detection of Lithium Plating in Lithium Ion Batteries: Using Multiple Physics-Based Electrochemical Signatures to Construct a Machine Learning Framework. ECS Meeting Abstracts, 2021, MA2021-01, 274-274.	0.0	0
24	Identification and Quantification of Aging Modes with Deep Learning Models. ECS Meeting Abstracts, 2021, MA2021-01, 195-195.	0.0	1
25	Formation of Surface Impurities on Lithiumâ€“Nickelâ€“Manganeseâ€“Cobalt Oxides in the Presence of CO₂ and H₂O. Journal of the American Chemical Society, 2021, 143, 10261-10274.	6.6	21
26	Nature of Oxygen Adsorption on Defective Carbonaceous Materials. Journal of Physical Chemistry C, 2021, 125, 20686-20696.	1.5	11
27	Fast-Charging Aging Considerations: Incorporation and Alignment of Cell Design and Material Degradation Pathways. ACS Applied Energy Materials, 2021, 4, 9133-9143.	2.5	21
28	Extended cycle life implications of fast charging for lithium-ion battery cathode. Energy Storage Materials, 2021, 41, 656-666.	9.5	50
29	Using In Situ High-Energy X-ray Diffraction to Quantify Electrode Behavior of Li-Ion Batteries from Extreme Fast Charging. ACS Applied Energy Materials, 2021, 4, 11590-11598.	2.5	17
30	Mapping the Deposition of Li Metal in Pouch Cells By Synchrotron Diffraction. ECS Meeting Abstracts, 2021, MA2021-02, 129-129.	0.0	0
31	Physics-Based Machine Learning: Data Needs and Practices for Failure Mode Classification and Life Prediction. ECS Meeting Abstracts, 2021, MA2021-02, 44-44.	0.0	0
32	Is Cathode a Bottleneck for Enabling Extreme Fast Charging?. ECS Meeting Abstracts, 2021, MA2021-02, 433-433.	0.0	0
33	A Bi-Layer Dense/Porous Solid Electrolyte Interphase for Enhanced Lithium-Metal Stability. ECS Meeting Abstracts, 2021, MA2021-02, 141-141.	0.0	0
34	Deep Learning for Rapid Failure Mode Classification and Quantification in Batteries. ECS Meeting Abstracts, 2021, MA2021-02, 159-159.	0.0	0
35	Multimodal Characterization of Degradation Mechanisms in Lithium-Ion Batteries from Extreme Fast Charging. ECS Meeting Abstracts, 2021, MA2021-02, 482-482.	0.0	1
36	A non-aqueous sodium hexafluorophosphate-based electrolyte degradation study: Formation and mitigation of hydrofluoric acid. Journal of Power Sources, 2020, 447, 227363.	4.0	39

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37	Cell degradation quantificationâ€"a performance metric-based approach. JPhys Energy, 2020, 2, 034003.	2.3	1
38	Heterogeneous Behavior of Lithium Plating during Extreme Fast Charging. Cell Reports Physical Science, 2020, 1, 100114.	2.8	49
39	Electrode scale and electrolyte transport effects on extreme fast charging of lithium-ion cells. Electrochimica Acta, 2020, 337, 135854.	2.6	122
40	Glassy Li metal anode for high-performance rechargeable Li batteries. Nature Materials, 2020, 19, 1339-1345.	13.3	162
41	Concept Design of Active Shielding for Dynamic Wireless Charging of Light-duty EV. , 2020, , .		5
42	Lithium-electrolyte solvation and reaction in the electrolyte of a lithium ion battery: A ReaxFF reactive force field study. Journal of Chemical Physics, 2020, 152, 184301.	1.2	27
43	A Quantitative Failure Analysis on Capacity Fade in Rechargeable Lithium Metal Cells. Journal of the Electrochemical Society, 2020, 167, 090502.	1.3	5
44	Communicationâ€"Pressure Evolution in Constrained Rechargeable Lithium-metal Pouch Cells. Journal of the Electrochemical Society, 2020, 167, 020511.	1.3	7
45	Advanced diagnostics to evaluate heterogeneity in lithium-ion battery modules. ETransportation, 2020, 3, 100045.	6.8	39
46	Correlation of electrochemical and mechanical responses: Differential analysis of rechargeable lithium metal cells. Journal of Power Sources, 2020, 463, 228180.	4.0	16
47	Extreme Fast Charging: The Current State of Understanding. ECS Meeting Abstracts, 2020, MA2020-01, 73-73.	0.0	0
48	Nucleation and Growth in Electrochemically Deposited Metals. ECS Meeting Abstracts, 2020, MA2020-01, 1169-1169.	0.0	0
49	Realistic Diagnostics to Evaluate Imbalance and Heterogeneity of Lithium-Ion Battery Modules. ECS Meeting Abstracts, 2020, MA2020-01, 102-102.	0.0	0
50	(Invited) Directions of High Energy Batteries and Status of Battery500 Consortium. ECS Meeting Abstracts, 2020, MA2020-02, 29-29.	0.0	0
51	Effect of Artificial SEI Content on Lithium Metal Anode Morphology and Performance. ECS Meeting Abstracts, 2020, MA2020-02, 151-151.	0.0	0
52	(Invited) How Well Cathode Materials are Being Used in Rechargeable Li Batteries. ECS Meeting Abstracts, 2020, MA2020-02, 34-34.	0.0	0
53	(Invited) Quantificationof Heterogeneous, Irreversible Lithium Plating in Extreme Fastcharging of Li-Ion Batteries. ECS Meeting Abstracts, 2020, MA2020-02, 589-589.	0.0	0
54	Electrochemical Quantification of Lithium Plating: Challenges and Considerations. Journal of the Electrochemical Society, 2019, 166, A2689-A2696.	1.3	38

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55	Challenges of future high power wireless power transfer for light-duty electric vehicles---technology and risk management. ETransportation, 2019, 2, 100012.	6.8	49
56	Perspectiveâ€"Safety Aspects of Energy Storage Testing. Journal of the Electrochemical Society, 2019, 166, E263-E265.	1.3	5
57	Extreme Fast Charge Challenges for Lithium-Ion Battery: Variability and Positive Electrode Issues. Journal of the Electrochemical Society, 2019, 166, A1926-A1938.	1.3	92
58	Communicationâ€"Implications of Local Current Density Variations on Lithium Plating Affected by Cathode Particle Size. Journal of the Electrochemical Society, 2019, 166, A667-A669.	1.3	28
59	Pathways for practical high-energy long-cycling lithium metal batteries. Nature Energy, 2019, 4, 180-186.	19.8	2,101
60	Critical Parameters for Evaluating Coin Cells and Pouch Cells of Rechargeable Li-Metal Batteries. Joule, 2019, 3, 1094-1105.	11.7	358
61	Good Practices for Rechargeable Lithium Metal Batteries. Journal of the Electrochemical Society, 2019, 166, A4141-A4149.	1.3	42
62	(Invited) Extreme Fast Charging of Lithium-Ion Battery: Understanding Bottlenecks and Safety Issues. ECS Meeting Abstracts, 2019, , .	0.0	0
63	Pressure Evolution in Constrained Li Metal Pouch Cells. ECS Meeting Abstracts, 2019, MA2019-01, 531-531.	0.0	1
64	(Invited) Multiscale Stress-Transport-Kinetics Continuum Models for Lithium-Metal Batteries-Relevance of Richard Alkireâ€™s Electrodeposition Legacy for Next-Generation Batteries. ECS Meeting Abstracts, 2019, , .	0.0	0
65	Electro-Assisted Recycling of Lithium Ion Batteries. ECS Meeting Abstracts, 2019, , .	0.0	0
66	(Invited) Lithium Plating â€“ Understanding of a Very Complicated Phenomenon. ECS Meeting Abstracts, 2019, , .	0.0	0
67	Lithium Metal Electrode â€" Understanding Its Unique Characteristics and Functions. ECS Meeting Abstracts, 2019, , .	0.0	0
68	Power Hardware in the Loop (PHIL) Simulation of Battery Packs. ECS Meeting Abstracts, 2019, , .	0.0	0
69	A Non-Aqueous NaPF6-Based Electrolyte Degradation Study: Formation and Mitigation of HF. ECS Meeting Abstracts, 2019, , .	0.0	0
70	Fast charge implications: Pack and cell analysis and comparison. Journal of Power Sources, 2018, 381, 56-65.	4.0	67
71	Electrochemical production of syngas from CO₂ captured in switchable polarity solvents. Green Chemistry, 2018, 20, 620-626.	4.6	45
72	Impacts of lean electrolyte on cycle life for rechargeable Li metal batteries. Journal of Power Sources, 2018, 407, 53-62.	4.0	62

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73	Batteries: Predicting Calendar Aging in Lithium Metal Secondary Batteries: The Impacts of Solid Electrolyte Interphase Composition and Stability (Adv. Energy Mater. 26/2018). Advanced Energy Materials, 2018, 8, 1870117.	10.2	0
74	Predicting Calendar Aging in Lithium Metal Secondary Batteries: The Impacts of Solid Electrolyte Interphase Composition and Stability. Advanced Energy Materials, 2018, 8, 1801427.	10.2	37
75	2.20 Batteries. , 2018, , 629-662.		9
76	(Invited) The Role of Variability in Failure for High Energy and High Power Batteries. ECS Meeting Abstracts, 2018, , .	0.0	0
77	(Invited) High Energy Cell Design: Challenges and Quantitative Characterization of the Role of Lean Electrolyte. ECS Meeting Abstracts, 2018, , .	0.0	0
78	The Implications of Fast Charge in Lithium Ion Battery Performance and Life: Cell vs. Pack. ECS Meeting Abstracts, 2018, , .	0.0	0
79	Effects of Electrolyte Volume and Salt Concentration on SEI Stability and Cycling Performance of Lithium Metal Anodes. ECS Meeting Abstracts, 2018, , .	0.0	0
80	Effect of Formation Rates on Performance of Lithium Metal Batteries. ECS Meeting Abstracts, 2018, , .	0.0	0
81	Interfacial Stability, Impact on Surface Stabilization and Charge Transfer. ECS Meeting Abstracts, 2018, , .	0.0	0
82	Effects of External Pressure on the Performance of Lithium Anode Cells. ECS Meeting Abstracts, 2018, , .	0.0	1
83	Enabling fast charging â€“ Vehicle considerations. Journal of Power Sources, 2017, 367, 216-227.	4.0	129
84	Enabling fast charging â€“ Infrastructure and economic considerations. Journal of Power Sources, 2017, 367, 237-249.	4.0	130
85	Enabling fast charging â€“ A battery technology gap assessment. Journal of Power Sources, 2017, 367, 250-262.	4.0	342
86	Enabling fast charging â€“ Battery thermal considerations. Journal of Power Sources, 2017, 367, 228-236.	4.0	216
87	Enabling fast charging â€“ Introduction and overview. Journal of Power Sources, 2017, 367, 214-215.	4.0	35
88	Phosphoranimines containing cationic N-imidazolinium moieties. Inorganica Chimica Acta, 2017, 466, 254-265.	1.2	4
89	Novel Short-Circuit Detection in Li-Ion Battery Architectures. ECS Transactions, 2017, 80, 75-84.	0.3	1
90	Use of phosphoranimines to reduce organic carbonate content in Li-ion battery electrolytes. Electrochimica Acta, 2016, 209, 36-43.	2.6	3

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91	Application of morphological synthesis for understanding electrode microstructure evolution as a function of applied charge/discharge cycles. Applied Physics A: Materials Science and Processing, 2016, 122, 1.	1.1	2
92	A new detection mechanism involving ketoâ€“enol tautomerization: selective fluorescence detection of Al(<scp>iii</scp>) by dehydration of secondary alcohols in mixed DMSO/aqueous media. RSC Advances, 2016, 6, 11295-11302.	1.7	8
93	Density impact on performance of composite Si/graphite electrodes. Journal of Applied Electrochemistry, 2016, 46, 359-367.	1.5	3
94	Unsaturated phosphazenes as co-solvents for lithium-ion battery electrolytes. Journal of Power Sources, 2015, 278, 794-801.	4.0	15
95	Electrodeposition as an alternate method for preparation of environmental samples for iodide by AMS. Nuclear Instruments & Methods in Physics Research B, 2015, 361, 372-375.	0.6	3
96	Evaluation of the SEI Using a Multilayer Spectroscopic Ellipsometry Model. ECS Electrochemistry Letters, 2014, 3, A108-A111.	1.9	4
97	Aluminum electroplating on steel from a fused bromide electrolyte. Surface and Coatings Technology, 2014, 258, 652-663.	2.2	5
98	Sampling dynamics for pressurized electrochemical cells. Journal of Applied Electrochemistry, 2014, 44, 849-855.	1.5	16
99	Fluorinated phosphazene co-solvents for improved thermal and safety performance in lithium-ion battery electrolytes. Journal of Power Sources, 2014, 263, 66-74.	4.0	50
100	Hybrid phosphazene anodes for energy storage applications. Journal of Power Sources, 2014, 267, 347-355.	4.0	17
101	Electrochemical Systems for Production of Syngas and Co-Products. ECS Transactions, 2013, 58, 125-137.	0.3	2
102	Chlor-syngas: Coupling of Electrochemical Technologies for Production of Commodity Chemicals. Energy & Fuels, 2013, 27, 4244-4249.	2.5	33
103	Operation of a Pressurized System for Continuous Reduction of CO₂. Journal of the Electrochemical Society, 2012, 159, F514-F517.	1.3	125
104	Influence of Electrolytes and Membranes on Cell Operation for Syn-Gas Production. Electrochemical and Solid-State Letters, 2012, 15, B48.	2.2	41
105	Influence of S Contamination on CO2 Reduction at Ag Electrodes. Journal of the Electrochemical Society, 2011, 158, B1384.	1.3	19
106	Bench-scale electrochemical system for generation of CO and syn-gas. Journal of Applied Electrochemistry, 2011, 41, 623-631.	1.5	117
107	Rotationally Induced Hydrodynamics: Fundamentals and Applications to High-Speed Bioassays. Annual Review of Analytical Chemistry, 2010, 3, 387-407.	2.8	12
108	Competitive surface-enhanced Raman scattering assay for the 1,25-dihydroxy metabolite of vitamin D3. Analyst, The, 2010, 135, 2811.	1.7	35

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109	Characterization of Zr(IV)â€“Phosphonate Thin Films Which Inhibit O[sub 2] Reduction on AA2024-T3. Journal of the Electrochemical Society, 2009, 156, C322.	1.3	9
110	Inhibition of O[sub 2] Reduction on AA2024-T3 Using a Zr(IV)-Octadecyl Phosphonate Coating System. Electrochemical and Solid-State Letters, 2008, 11, C9.	2.2	7
111	Dioxygen Reduction Affects Surface Oxide Growth and Dissolution on AA2024-T3. Journal of the Electrochemical Society, 2007, 154, C458.	1.3	6
112	Syntheses, Characterizations, and Properties of Electronically Perturbed 1,1â€˜-Dimethyl-2,2â€˜-bipyridinium Tetrafluoroborates. Journal of Organic Chemistry, 2006, 71, 315-319.	1.7	23
113	Structural and electronic features important to nÏ€*â€“Ï€Ï€* inversion sensors: synthesis, luminescence, and electrochemical properties of sulfur and chlorine-containing macrocycles. Part 3. Tetrahedron, 2005, 61, 479-484.	1.0	17