

# Eric J Dufek

## List of Publications by Year in descending order

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Version: 2024-02-01

113  
papers

5,492  
citations

147566

31  
h-index

82410

72  
g-index

117  
all docs

117  
docs citations

117  
times ranked

5445  
citing authors

#	ARTICLE	IF	CITATIONS
1	Pathways for practical high-energy long-cycling lithium metal batteries. <i>Nature Energy</i> , 2019, 4, 180-186.	19.8	2,101
2	Critical Parameters for Evaluating Coin Cells and Pouch Cells of Rechargeable Li-Metal Batteries. <i>Joule</i> , 2019, 3, 1094-1105.	11.7	358
3	Enabling fast charging – A battery technology gap assessment. <i>Journal of Power Sources</i> , 2017, 367, 250-262.	4.0	342
4	Enabling fast charging – Battery thermal considerations. <i>Journal of Power Sources</i> , 2017, 367, 228-236.	4.0	216
5	Glassy Li metal anode for high-performance rechargeable Li batteries. <i>Nature Materials</i> , 2020, 19, 1339-1345.	13.3	162
6	Enabling fast charging – Infrastructure and economic considerations. <i>Journal of Power Sources</i> , 2017, 367, 237-249.	4.0	130
7	Enabling fast charging – Vehicle considerations. <i>Journal of Power Sources</i> , 2017, 367, 216-227.	4.0	129
8	Operation of a Pressurized System for Continuous Reduction of CO <sub>2</sub> . <i>Journal of the Electrochemical Society</i> , 2012, 159, F514-F517.	1.3	125
9	Electrode scale and electrolyte transport effects on extreme fast charging of lithium-ion cells. <i>Electrochimica Acta</i> , 2020, 337, 135854.	2.6	122
10	Bench-scale electrochemical system for generation of CO and syn-gas. <i>Journal of Applied Electrochemistry</i> , 2011, 41, 623-631.	1.5	117
11	A Review of Existing and Emerging Methods for Lithium Detection and Characterization in Li-ion and Li-Metal Batteries. <i>Advanced Energy Materials</i> , 2021, 11, 2100372.	10.2	114
12	Extreme Fast Charge Challenges for Lithium-Ion Battery: Variability and Positive Electrode Issues. <i>Journal of the Electrochemical Society</i> , 2019, 166, A1926-A1938.	1.3	92
13	Fast charge implications: Pack and cell analysis and comparison. <i>Journal of Power Sources</i> , 2018, 381, 56-65.	4.0	67
14	Impacts of lean electrolyte on cycle life for rechargeable Li metal batteries. <i>Journal of Power Sources</i> , 2018, 407, 53-62.	4.0	62
15	Quantification of heterogeneous, irreversible lithium plating in extreme fast charging of lithium-ion batteries. <i>Energy and Environmental Science</i> , 2021, 14, 4979-4988.	15.6	58
16	Fluorinated phosphazene co-solvents for improved thermal and safety performance in lithium-ion battery electrolytes. <i>Journal of Power Sources</i> , 2014, 263, 66-74.	4.0	50
17	Extended cycle life implications of fast charging for lithium-ion battery cathode. <i>Energy Storage Materials</i> , 2021, 41, 656-666.	9.5	50
18	Challenges of future high power wireless power transfer for light-duty electric vehicles—technology and risk management. <i>ETransportation</i> , 2019, 2, 100012.	6.8	49

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19	Heterogeneous Behavior of Lithium Plating during Extreme Fast Charging. Cell Reports Physical Science, 2020, 1, 100114.	2.8	49
20	Electrochemical production of syngas from CO <sub>2</sub> captured in switchable polarity solvents. Green Chemistry, 2018, 20, 620-626.	4.6	45
21	Good Practices for Rechargeable Lithium Metal Batteries. Journal of the Electrochemical Society, 2019, 166, A4141-A4149.	1.3	42
22	Influence of Electrolytes and Membranes on Cell Operation for Syn-Gas Production. Electrochemical and Solid-State Letters, 2012, 15, B48.	2.2	41
23	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
24	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
25	Advanced diagnostics to evaluate heterogeneity in lithium-ion battery modules. ETransportation, 2020, 3, 100045.	6.8	39
26	Electrochemical Quantification of Lithium Plating: Challenges and Considerations. Journal of the Electrochemical Society, 2019, 166, A2689-A2696.	1.3	38
27	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
28	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
29	Competitive surface-enhanced Raman scattering assay for the 1,25-dihydroxy metabolite of vitamin D3. Analyst, The, 2010, 135, 2811.	1.7	35
30	Enabling fast charging – Introduction and overview. Journal of Power Sources, 2017, 367, 214-215.	4.0	35
31	Chlor-syngas: Coupling of Electrochemical Technologies for Production of Commodity Chemicals. Energy & Fuels, 2013, 27, 4244-4249.	2.5	33
32	A Comprehensive Understanding of the Aging Effects of Extreme Fast Charging on High Ni NMC Cathode. Advanced Energy Materials, 2022, 12, .	10.2	32
33	Rapid failure mode classification and quantification in batteries: A deep learning modeling framework. Energy Storage Materials, 2022, 45, 1002-1011.	9.5	29
34	Communication – 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
35	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
36	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

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37	Developing extreme fast charge battery protocols – A review spanning materials to systems. Journal of Power Sources, 2022, 526, 231129.	4.0	27
38	Syntheses, Characterizations, and Properties of Electronically Perturbed 1,1'-Dimethyl-2,2'-bipyridinium Tetrafluoroborates. Journal of Organic Chemistry, 2006, 71, 315-319.	1.7	23
39	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
40	Formation of Surface Impurities on Lithium-Nickel-Manganese-Cobalt Oxides in the Presence of CO <sub>2</sub> and H <sub>2</sub> O. Journal of the American Chemical Society, 2021, 143, 10261-10274.	6.6	21
41	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
42	Influence of S Contamination on CO <sub>2</sub> Reduction at Ag Electrodes. Journal of the Electrochemical Society, 2011, 158, B1384.	1.3	19
43	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
44	Structural and electronic features important to n/e inversion sensors: synthesis, luminescence, and electrochemical properties of sulfur and chlorine-containing macrocycles. Part 3. Tetrahedron, 2005, 61, 479-484.	1.0	17
45	Hybrid phosphazene anodes for energy storage applications. Journal of Power Sources, 2014, 267, 347-355.	4.0	17
46	Fast Diagnosis of Failure Mechanisms and Lifetime Prediction of Li Metal Batteries. Small Methods, 2021, 5, e2000807.	4.6	17
47	Using <i>In Situ</i> 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
48	Sampling dynamics for pressurized electrochemical cells. Journal of Applied Electrochemistry, 2014, 44, 849-855.	1.5	16
49	Correlation of electrochemical and mechanical responses: Differential analysis of rechargeable lithium metal cells. Journal of Power Sources, 2020, 463, 228180.	4.0	16
50	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
51	Challenges and needs for system-level electrochemical lithium-ion battery management and diagnostics. MRS Bulletin, 2021, 46, 420-428.	1.7	16
52	Unsaturated phosphazenes as co-solvents for lithium-ion battery electrolytes. Journal of Power Sources, 2015, 278, 794-801.	4.0	15
53	Rotationally Induced Hydrodynamics: Fundamentals and Applications to High-Speed Bioassays. Annual Review of Analytical Chemistry, 2010, 3, 387-407.	2.8	12
54	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

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55	Unlocking Failure Mechanisms and Improvement of Practical Li-ion Pouch Cells through In Operando Pressure Study. <i>Advanced Energy Materials</i> , 2022, 12, .	10.2	12
56	Nature of Oxygen Adsorption on Defective Carbonaceous Materials. <i>Journal of Physical Chemistry C</i> , 2021, 125, 20686-20696.	1.5	11
57	Sensitivity and reliability of key electrochemical markers for detecting lithium plating during extreme fast charging. <i>Journal of Energy Storage</i> , 2022, 46, 103782.	3.9	11
58	A Novel Framework for Optimizing Ramping Capability of Hybrid Energy Storage Systems. <i>IEEE Transactions on Smart Grid</i> , 2021, 12, 1651-1662.	6.2	10
59	Early Battery Performance Prediction for Mixed Use Charging Profiles Using Hierarchical Machine Learning. <i>Batteries and Supercaps</i> , 2021, 4, 1186-1196.	2.4	10
60	Characterization of Zr(IV)-Phosphonate Thin Films Which Inhibit O <sub>2</sub> Reduction on AA2024-T3. <i>Journal of the Electrochemical Society</i> , 2009, 156, C322.	1.3	9
61	2.20 Batteries. , 2018, , 629-662.		9
62	A new detection mechanism involving keto-enol tautomerization: selective fluorescence detection of Al(III) by dehydration of secondary alcohols in mixed DMSO/aqueous media. <i>RSC Advances</i> , 2016, 6, 11295-11302.	1.7	8
63	Inhibition of O <sub>2</sub> Reduction on AA2024-T3 Using a Zr(IV)-Octadecyl Phosphonate Coating System. <i>Electrochemical and Solid-State Letters</i> , 2008, 11, C9.	2.2	7
64	Communication—Pressure Evolution in Constrained Rechargeable Lithium-metal Pouch Cells. <i>Journal of the Electrochemical Society</i> , 2020, 167, 020511.	1.3	7
65	Carbon-Binder Weight Loading Optimization for Improved Lithium-Ion Battery Rate Capability. <i>Journal of the Electrochemical Society</i> , 2022, 169, 070519.	1.3	7
66	Dioxygen Reduction Affects Surface Oxide Growth and Dissolution on AA2024-T3. <i>Journal of the Electrochemical Society</i> , 2007, 154, C458.	1.3	6
67	Aluminum electroplating on steel from a fused bromide electrolyte. <i>Surface and Coatings Technology</i> , 2014, 258, 652-663.	2.2	5
68	Perspective—Safety Aspects of Energy Storage Testing. <i>Journal of the Electrochemical Society</i> , 2019, 166, E263-E265.	1.3	5
69	Concept Design of Active Shielding for Dynamic Wireless Charging of Light-duty EV. , 2020, , .		5
70	A Quantitative Failure Analysis on Capacity Fade in Rechargeable Lithium Metal Cells. <i>Journal of the Electrochemical Society</i> , 2020, 167, 090502.	1.3	5
71	Evaluation of the SEI Using a Multilayer Spectroscopic Ellipsometry Model. <i>ECS Electrochemistry Letters</i> , 2014, 3, A108-A111.	1.9	4
72	Phosphoranimines containing cationic N-imidazolium moieties. <i>Inorganica Chimica Acta</i> , 2017, 466, 254-265.	1.2	4

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73	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
74	Use of phosphoranimines to reduce organic carbonate content in Li-ion battery electrolytes. Electrochimica Acta, 2016, 209, 36-43.	2.6	3
75	Density impact on performance of composite Si/graphite electrodes. Journal of Applied Electrochemistry, 2016, 46, 359-367.	1.5	3
76	Electrochemical Systems for Production of Syngas and Co-Products. ECS Transactions, 2013, 58, 125-137.	0.3	2
77	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
78	Unlocking Failure Mechanisms and Improvement of Practical Li-S Pouch Cells through In Operando Pressure Study (Adv. Energy Mater. 7/2022). Advanced Energy Materials, 2022, 12, .	10.2	2
79	Novel Short-Circuit Detection in Li-Ion Battery Architectures. ECS Transactions, 2017, 80, 75-84.	0.3	1
80	Cell degradation quantification—a performance metric-based approach. JPhys Energy, 2020, 2, 034003.	2.3	1
81	Sensitivity and Reliability of Global Electrochemical Lithium Detection Signatures. ECS Meeting Abstracts, 2021, MA2021-01, 165-165.	0.0	1
82	Identification and Quantification of Aging Modes with Deep Learning Models. ECS Meeting Abstracts, 2021, MA2021-01, 195-195.	0.0	1
83	Effects of External Pressure on the Performance of Lithium Anode Cells. ECS Meeting Abstracts, 2018, , .	0.0	1
84	Pressure Evolution in Constrained Li Metal Pouch Cells. ECS Meeting Abstracts, 2019, MA2019-01, 531-531.	0.0	1
85	Multimodal Characterization of Degradation Mechanisms in Lithium-Ion Batteries from Extreme Fast Charging. ECS Meeting Abstracts, 2021, MA2021-02, 482-482.	0.0	1
86	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
87	Utilization of AFM for Observing Early-Onset Mechanisms of Lithium-Metal. ECS Meeting Abstracts, 2021, MA2021-01, 47-47.	0.0	0
88	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
89	(Invited) The Role of Variability in Failure for High Energy and High Power Batteries. ECS Meeting Abstracts, 2018, , .	0.0	0
90	(Invited) High Energy Cell Design: Challenges and Quantitative Characterization of the Role of Lean Electrolyte. ECS Meeting Abstracts, 2018, , .	0.0	0

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91	The Implications of Fast Charge in Lithium Ion Battery Performance and Life: Cell vs. Pack. ECS Meeting Abstracts, 2018, , .	0.0	0
92	Effects of Electrolyte Volume and Salt Concentration on SEI Stability and Cycling Performance of Lithium Metal Anodes. ECS Meeting Abstracts, 2018, , .	0.0	0
93	Effect of Formation Rates on Performance of Lithium Metal Batteries. ECS Meeting Abstracts, 2018, , .	0.0	0
94	Interfacial Stability, Impact on Surface Stabilization and Charge Transfer. ECS Meeting Abstracts, 2018, , .	0.0	0
95	(Invited) Extreme Fast Charging of Lithium-Ion Battery: Understanding Bottlenecks and Safety Issues. ECS Meeting Abstracts, 2019, , .	0.0	0
96	(Invited) Multiscale Stress-Transport-Kinetics Continuum Models for Lithium-Metal Batteries-Relevance of Richard Alkire's Electrodeposition Legacy for Next-Generation Batteries. ECS Meeting Abstracts, 2019, , .	0.0	0
97	Electro-Assisted Recycling of Lithium Ion Batteries. ECS Meeting Abstracts, 2019, , .	0.0	0
98	(Invited) Lithium Plating " Understanding of a Very Complicated Phenomenon. ECS Meeting Abstracts, 2019, , .	0.0	0
99	Lithium Metal Electrode " Understanding Its Unique Characteristics and Functions. ECS Meeting Abstracts, 2019, , .	0.0	0
100	Power Hardware in the Loop (PHIL) Simulation of Battery Packs. ECS Meeting Abstracts, 2019, , .	0.0	0
101	A Non-Aqueous NaPF6-Based Electrolyte Degradation Study: Formation and Mitigation of HF. ECS Meeting Abstracts, 2019, , .	0.0	0
102	Extreme Fast Charging: The Current State of Understanding. ECS Meeting Abstracts, 2020, MA2020-01, 73-73.	0.0	0
103	Nucleation and Growth in Electrochemically Deposited Metals. ECS Meeting Abstracts, 2020, MA2020-01, 1169-1169.	0.0	0
104	Realistic Diagnostics to Evaluate Imbalance and Heterogeneity of Lithium-Ion Battery Modules. ECS Meeting Abstracts, 2020, MA2020-01, 102-102.	0.0	0
105	Mapping the Deposition of Li Metal in Pouch Cells By Synchrotron Diffraction. ECS Meeting Abstracts, 2021, MA2021-02, 129-129.	0.0	0
106	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
107	Is Cathode a Bottleneck for Enabling Extreme Fast Charging?. ECS Meeting Abstracts, 2021, MA2021-02, 433-433.	0.0	0
108	A Bi-Layer Dense/Porous Solid Electrolyte Interphase for Enhanced Lithium-Metal Stability. ECS Meeting Abstracts, 2021, MA2021-02, 141-141.	0.0	0

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109	(Invited) Directions of High Energy Batteries and Status of Battery500 Consortium. ECS Meeting Abstracts, 2020, MA2020-02, 29-29.	0.0	0
110	Effect of Artificial SEI Content on Lithium Metal Anode Morphology and Performance. ECS Meeting Abstracts, 2020, MA2020-02, 151-151.	0.0	0
111	(Invited) How Well Cathode Materials are Being Used in Rechargeable Li Batteries. ECS Meeting Abstracts, 2020, MA2020-02, 34-34.	0.0	0
112	(Invited) Quantification of Heterogeneous, Irreversible Lithium Plating in Extreme Fastcharging of Li-Ion Batteries. ECS Meeting Abstracts, 2020, MA2020-02, 589-589.	0.0	0
113	Deep Learning for Rapid Failure Mode Classification and Quantification in Batteries. ECS Meeting Abstracts, 2021, MA2021-02, 159-159.	0.0	0