Stephen E Trask

List of Publications by Year
in descending order

96 papers	3,244 citations	172386 29 h-index	161767 54 g-index
98 all docs	98 docs citations	98 times ranked	3048 citing authors

#	Article	IF	Citations
1	Optimizing Areal Capacities through Understanding the Limitations of Lithium-Ion Electrodes. Journal of the Electrochemical Society, 2016, 163, A138-A149.	1.3	472
2	Requirements for Enabling Extreme Fast Charging of High Energy Density Li-Ion Cells while Avoiding Lithium Plating. Journal of the Electrochemical Society, 2019, 166, A1412-A1424.	1.3	162
3	Cycling Behavior of NCM523/Graphite Lithium-Ion Cells in the 3â€“4.4 V Range: Diagnostic Studies of Full Cells and Harvested Electrodes. Journal of the Electrochemical Society, 2017, 164, A6054-A6065.	1.3	145
4	Electrode scale and electrolyte transport effects on extreme fast charging of lithium-ion cells. Electrochimica Acta, 2020, 337, 135854.	2.6	122
5	Electrode Behavior RE-Visited: Monitoring Potential Windows, Capacity Loss, and Impedance Changes in Li_{1.03}(Ni_{0.5}Co_{0.2}Mn_{0.3})_{0.97}O₂/Silicon-Graphite Full Cells. Journal of the Electrochemical Society, 2016, 163, A875-A887.	1.3	112
6	Enabling High-Energy, High-Voltage Lithium-Ion Cells: Standardization of Coin-Cell Assembly, Electrochemical Testing, and Evaluation of Full Cells. Journal of the Electrochemical Society, 2016, 163, A2999-A3009.	1.3	95
7	Layered Oxide, Graphite and Silicon-Graphite Electrodes for Lithium-Ion Cells: Effect of Electrolyte Composition and Cycling Windows. Journal of the Electrochemical Society, 2017, 164, A6095-A6102.	1.3	93
8	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
9	The effect of charging rate on the graphite electrode of commercial lithium-ion cells: A post-mortem study. Journal of Power Sources, 2016, 335, 189-196.	4.0	82
10	Fast Charging of Li-Ion Cells: Part I. Using Li/Cu Reference Electrodes to Probe Individual Electrode Potentials. Journal of the Electrochemical Society, 2019, 166, A996-A1003.	1.3	79
11	Suppressed oxygen extraction and degradation of LiNi x Mn y Co z O2 cathodes at high charge cut-off voltages. Nano Research, 2017, 10, 4221-4231.	5.8	77
12	Calendar-life versus cycle-life aging of lithium-ion cells with silicon-graphite composite electrodes. Electrochimica Acta, 2018, 280, 221-228.	2.6	67
13	Electrolyte Volume Effects on Electrochemical Performance and Solid Electrolyte Interphase in Si-Graphite/NMC Lithium-Ion Pouch Cells. ACS Applied Materials & Interfaces, 2017, 9, 18799-18808.	4.0	65
14	Correlation of Electrolyte Volume and Electrochemical Performance in Lithium-Ion Pouch Cells with Graphite Anodes and NMC532 Cathodes. Journal of the Electrochemical Society, 2017, 164, A1195-A1202.	1.3	64
15	Using Mixed Salt Electrolytes to Stabilize Silicon Anodes for Lithium-Ion Batteries via in Situ Formation of Liâ€“Mâ€“Si Ternaries (M = Mg, Zn, Al, Ca). ACS Applied Materials & Interfaces, 2019, 11, 29780-29790.	4.0	60
16	Performance of Full Cells Containing Carbonate-Based LiFSI Electrolytes and Silicon-Graphite Negative Electrodes. Journal of the Electrochemical Society, 2016, 163, A345-A350.	1.3	58
17	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
18	From coin cells to 400ÂmAh pouch cells: Enhancing performance of high-capacity lithium-ion cells via modifications in electrode constitution and fabrication. Journal of Power Sources, 2014, 259, 233-244.	4.0	55

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19	Cost of automotive lithium-ion batteries operating at high upper cutoff voltages. Journal of Power Sources, 2018, 403, 56-65.	4.0	51
20	Understanding of pre-lithiation of poly(acrylic acid) binder: Striking the balances between the cycling performance and slurry stability for silicon-graphite composite electrodes in Li-ion batteries. Journal of Power Sources, 2019, 416, 125-131.	4.0	50
21	Extended cycle life implications of fast charging for lithium-ion battery cathode. Energy Storage Materials, 2021, 41, 656-666.	9.5	50
22	Heterogeneous Behavior of Lithium Plating during Extreme Fast Charging. Cell Reports Physical Science, 2020, 1, 100114.	2.8	49
23	On Leakage Current Measured at High Cell Voltages in Lithium-Ion Batteries. Journal of the Electrochemical Society, 2017, 164, A508-A517.	1.3	44
24	3D Detection of Lithiation and Lithium Plating in Graphite Anodes during Fast Charging. ACS Nano, 2021, 15, 10480-10487.	7.3	43
25	Capacity fade in high energy silicon-graphite electrodes for lithium-ion batteries. Chemical Communications, 2018, 54, 3586-3589.	2.2	41
26	Anode-Dependent Impedance Rise in Layered-Oxide Cathodes ofÂLithium-Ion Cells. Journal of the Electrochemical Society, 2018, 165, A1697-A1705.	1.3	40
27	How Fast Can a Li-Ion Battery Be Charged? Determination of Limiting Fast Charging Conditions. ACS Applied Energy Materials, 2021, 4, 1063-1068.	2.5	37
28	Apparent Increasing Lithium Diffusion Coefficient with Applied Current in Graphite. Journal of the Electrochemical Society, 2020, 167, 120528.	1.3	34
29	A Comprehensive Understanding of the Aging Effects of Extreme Fast Charging on High Ni NMC Cathode. Advanced Energy Materials, 2022, 12, .	10.2	32
30	Quantifying Negative Effects of Carbon-Binder Networks from Electrochemical Performance of Porous Li-Ion Electrodes. Journal of the Electrochemical Society, 2021, 168, 070536.	1.3	31
31	Electrochemical Dilatometry of Si-Bearing Electrodes: Dimensional Changes and Experiment Design. Journal of the Electrochemical Society, 2020, 167, 160551.	1.3	31
32	Insights on the Stabilization of Nickel-Rich Cathode Surfaces: Evidence of Inherent Instabilities in the Presence of Conformal Coatings. Chemistry of Materials, 2019, 31, 3891-3899.	3.2	30
33	Exploring Electrochemistry and Interface Characteristics of Lithium-Ion Cells with Li_{1.2}Ni_{0.15}Mn_{0.55}Co_{0.1}O₂Positive and Li₄Ti₅O₁₂Negative Electrodes. Journal of the Electrochemical Society, 2015, 162, A7049-A7059.	1.3	28
34	Assessment of Li-Inventory in Cycled Si-Graphite Anodes Using LiFePO₄as a Diagnostic Cathode. Journal of the Electrochemical Society, 2018, 165, A2389-A2396.	1.3	28
35	Transition-Metal Dissolution from NMC-Family Oxides: A Case Study. ACS Applied Energy Materials, 2020, 3, 2565-2575.	2.5	28
36	Beneficial Effect of Li₅FeO₄ Lithium Source for Li-Ion Batteries with a Layered NMC Cathode and Si Anode. Journal of the Electrochemical Society, 2020, 167, 160543.	1.3	27

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37	Silicon Nanoparticles: Stability in Aqueous Slurries and the Optimization of the Oxide Layer Thickness for Optimal Electrochemical Performance. ACS Applied Materials & Interfaces, 2017, 9, 32727-32736.	4.0	26
38	Evaluation of Electrolyte Oxidation Stability on Charged LiNi_{0.5}Co_{0.2}Mn_{0.3}O₂Cathode Surface through Potentiostatic Holds. Journal of the Electrochemical Society, 2016, 163, A1717-A1722.	1.3	25
39	Probing the Reaction between PVDF and LiPAA vs Li₇Si₃: Investigation of Binder Stability for Si Anodes. Journal of the Electrochemical Society, 2019, 166, A2396-A2402.	1.3	25
40	Long-term cyclability of Li4Ti5O12/LiMn2O4 cells using carbonate-based electrolytes for behind-the-meter storage applications. Energy Storage Materials, 2021, 38, 581-589.	9.5	23
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	Laboratory-Based X-ray Absorption Spectroscopy on a Working Pouch Cell Battery at Industrially-Relevant Charging Rates. Journal of the Electrochemical Society, 2019, 166, A2549-A2555.	1.3	20
43	Revealing causes of macroscale heterogeneity in lithium ion pouch cells via synchrotron X-ray diffraction. Journal of Power Sources, 2021, 507, 230253.	4.0	20
44	A XANES study of LiVPO4F: a factor analysis approach. Physical Chemistry Chemical Physics, 2014, 16, 3254.	1.3	19
45	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
46	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
47	Quantifying gas generation from slurries used in fabrication of Si-containing electrodes for lithium-ion cells. Journal of Power Sources, 2018, 395, 289-294.	4.0	16
48	Extreme Fastâ€Charging of Lithiumâ€ion Cells: Effect on Anode and Electrolyte. Energy Technology, 2021, 9, .	1.8	16
49	Dual functionality of over-lithiated NMC for high energy silicon-based lithium-ion batteries. Journal of Materials Chemistry A, 2021, 9, 12818-12829.	5.2	16
50	Critical Evaluation of Potentiostatic Holds as Accelerated Predictors of Capacity Fade during Calendar Aging. Journal of the Electrochemical Society, 2022, 169, 050531.	1.3	16
51	Chemical Stability of Lithium 2-Trifluoromethyl-4,5-dicyanoimidazolide, an Electrolyte Salt for Li-Ion Cells. Journal of Physical Chemistry C, 2016, 120, 28463-28471.	1.5	15
52	Extreme fast charge aging: Correlation between electrode scale and heterogeneous degradation in Ni-rich layered cathodes. Journal of Power Sources, 2022, 521, 230961.	4.0	15
53	Understanding the Effect of Cathode Composition on the Interface and Crosstalk in NMC/Si Full Cells. ACS Applied Materials & Interfaces, 2022, 14, 15103-15111.	4.0	15
54	Si powders and electrodes for high-energy lithium-ion cells. Surface Science Spectra, 2020, 27, 016801.	0.3	14

#	ARTICLE	IF	CITATIONS
55	Effect of Anode Porosity and Temperature on the Performance and Lithium Plating During Fastâ€Charging of Lithiumâ€Ion Cells. Energy Technology, 2021, 9, 2000666.	1.8	14
56	Probing the Reactivity of the Active Material of a Li-Ion Silicon Anode with Common Battery Solvents. ACS Applied Materials & Interfaces, 2021, 13, 28017-28026.	4.0	14
57	Modulating electrode utilization in lithium-ion cells with silicon-bearing anodes. Journal of Power Sources, 2020, 477, 229029.	4.0	13
58	Comprehensive Insights into Nucleation, Autocatalytic Growth, and Stripping Efficiency for Lithium Plating in Full Cells. ACS Energy Letters, 2021, 6, 3725-3733.	8.8	13
59	Surface-enhanced Raman spectroscopy (SERS): a powerful technique to study the SEI layer in batteries. Chemical Communications, 2021, 57, 2253-2256.	2.2	13
60	Chemical Interplay of Silicon and Graphite in a Composite Electrode in SEI Formation. ACS Applied Materials & Interfaces, 2021, 13, 56073-56084.	4.0	13
61	Editorial: Lithium-bearing oxides for rechargeable Li-ion batteries. Surface Science Spectra, 2019, 26, 014002.	0.3	12
62	Estimating the Diffusion Coefficient of Lithium in Graphite: Extremely Fast Charging and a Comparison of Data Analysis Techniques. Journal of the Electrochemical Society, 2021, 168, 070506.	1.3	12
63	Stoichiometric irreversibility of aged garnet electrolytes. Materials Today Energy, 2021, 20, 100669.	2.5	12
64	Systematic Study of the Cathode Compositional Dependency of Cross-Talk Behavior in Li-Ion Battery. Journal of the Electrochemical Society, 2020, 167, 160508.	1.3	12
65	Li2O-Based Cathode Additives Enabling Prelithiation of Si Anodes. Applied Sciences (Switzerland), 2021, 11, 12027.	1.3	12
66	Tailoring Alumina Based Interphases on Lithium Ion Cathodes. Journal of the Electrochemical Society, 2018, 165, A3275-A3283.	1.3	11
67	Communicationâ€"Effect of Lower Cutoff Voltage on the 1stCycle Performance of Silicon Electrodes. Journal of the Electrochemical Society, 2019, 166, A132-A134.	1.3	10
68	Harbinger of hysteresis in lithium-rich oxides: Anionic activity or defect chemistry of cation migration. Journal of Power Sources, 2020, 471, 228335.	4.0	10
69	Investigating Ternary Liâ€"Mgâ€"Si Zintl Phase Formation and Evolution for Si Anodes in Li-Ion Batteries with Mg(TFSI)₂ Electrolyte Additive. Chemistry of Materials, 2021, 33, 4960-4970.	3.2	10
70	Influence of metallic contaminants on the electrochemical and thermal behavior of Li-ion electrodes. Journal of Power Sources, 2022, 518, 230760.	4.0	10
71	Evaluating the roles of electrolyte components on the passivation of silicon anodes. Journal of Power Sources, 2022, 523, 231021.	4.0	10
72	Evaluating temperature dependent degradation mechanisms of silicon-graphite electrodes and the effect of fluoroethylene carbonate electrolyte additive. Electrochimica Acta, 2021, 394, 139097.	2.6	9

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73	Concealed Cathode Degradation in Lithium-Ion Cells with a Ni-Rich Oxide. Journal of the Electrochemical Society, 2022, 169, 040539.	1.3	9
74	Effect of temperature on capacity fade in silicon-rich anodes. Journal of Power Sources, 2021, 487, 229322.	4.0	8
75	Effect of cathode on crosstalk in Si-based lithium-ion cells. Journal of Materials Chemistry A, 2021, 9, 26904-26916.	5.2	8
76	Conformal Pressure and Fast-Charging Li-Ion Batteries. Journal of the Electrochemical Society, 2022, 169, 040540.	1.3	8
77	Role of Low Molecular Weight Polymers on the Dynamics of Silicon Anodes During Casting. ChemPhysChem, 2021, 22, 1049-1058.	1.0	7
78	Carbon-Binder Weight Loading Optimization for Improved Lithium-Ion Battery Rate Capability. Journal of the Electrochemical Society, 2022, 169, 070519.	1.3	7
79	Evaluating the Effect of Electrolyte Additive Functionalities on NMC622/Si Cell Performance. Journal of the Electrochemical Society, 2022, 169, 070515.	1.3	6
80	Impact of Electrode Thickness and Temperature on the Rate Capability of Li₄Ti₅O₁₂/LiMn₂O₄ Cells. Journal of the Electrochemical Society, 2021, 168, 110536.	1.3	5
81	Multimodal Characterization of Degradation Mechanisms in Lithium-Ion Batteries from Extreme Fast Charging. ECS Meeting Abstracts, 2021, MA2021-02, 482-482.	0.0	1
82	Across-Depth Heterogeneity and Irreversibility of Fast-Charge-Driven Lithium Plating. Journal of the Electrochemical Society, 2022, 169, 060506.	1.3	1
83	Post-Test Analysis of Battery Materials: Another Part of the Question. ECS Transactions, 2014, 61, 145-154.	0.3	0
84	Understanding the Fast Charging Effect on Anode and Electrolyte in Li Ion Battery. ECS Meeting Abstracts, 2021, MA2021-01, 164-164.	0.0	0
85	Performance Loss Mechanisms in Lithium-Ion Cells with Nickel-Dominant Oxide Cathodes. ECS Meeting Abstracts, 2021, MA2021-01, 92-92.	0.0	0
86	High Adhesive Polyimide Binder for Silicon Anodes of Lithium Ion Batteries. ECS Meeting Abstracts, 2021, MA2021-01, 130-130.	0.0	0
87	Si Nanoparticles: Its Stability in Aqueous Slurries and the Optimization of Oxide Layer Thickness for Optimal Electrochemical Performance. ECS Meeting Abstracts, 2018, , .	0.0	0
88	Effect of Electrolyte Compositions on Cycling Performance of Li-Ion Full Cells with Si-Graphite Composite Electrodes. ECS Meeting Abstracts, 2018, , .	0.0	0
89	Quantifying Gas Generation during Silicon-Electrode Slurry Preparation By the Archimedes Method. ECS Meeting Abstracts, 2018, , .	0.0	0
90	Temperature Influence on Silicon-Based Anodes for Li-Ion Batteries. ECS Meeting Abstracts, 2019, , .	0.0	0

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91	Stabilizing Silicon Anode Chemistry for Long Cycle and Calendar Life Electrodes. ECS Meeting Abstracts, 2019, , .	0.0	0
92	Physical Properties Needed to Enable Extreme Fast Charging of High Energy Density Graphite/NMC Cells. ECS Meeting Abstracts, 2019, , .	0.0	0
93	Temperature Influence on Silicon-Based Anodes for Li-Ion Batteries. ECS Meeting Abstracts, 2019, , .	0.0	0
94	Effect of Temperature on Silicon-Based and Silicon-Rich Anodes for Li-Ion Batteries. ECS Meeting Abstracts, 2021, MA2021-02, 1960-1960.	0.0	0
95	Operando Electrochemical Dilatometry of Si-Based Electrodes for Lithium-Ion Cells. ECS Meeting Abstracts, 2020, MA2020-02, 183-183.	0.0	0
96	Pre-Lithiation of Anode for Lithium Ion Batteries. ECS Meeting Abstracts, 2020, MA2020-02, 155-155.	0.0	0