Kandler Smith

List of Publications by Year
in descending order

Source: https://exaly.com/author-pdf/962264/publications.pdf

Version: 2024-02-01

65 papers	4,310 citations	147801 31 h-index	168389 53 g-index
70 all docs	70 docs citations	70 times ranked	3303 citing authors

#	Article	IF	Citations
1	MATBOX: An Open-source Microstructure Analysis Toolbox for microstructure generation, segmentation, characterization, visualization, correlation, and meshing. SoftwareX, 2022, 17, 100915.	2.6	12
2	Developing extreme fast charge battery protocols â€“ A review spanning materials to systems. Journal of Power Sources, 2022, 526, 231129.	7.8	27
3	Super-resolving microscopy images of Li-ion electrodes for fine-feature quantification using generative adversarial networks. Npj Computational Materials, 2022, 8, .	8.7	9
4	A Comprehensive Understanding of the Aging Effects of Extreme Fast Charging on High Ni NMC Cathode. Advanced Energy Materials, 2022, 12, .	19.5	32
5	Asphericity Can Cause Nonuniform Lithium Intercalation in Battery Active Particles. ACS Energy Letters, 2022, 7, 1871-1879.	17.4	21
6	Laser ablation for structuring Li-ion electrodes for fast charging and its impact on material properties, rate capability, Li plating, and wetting. Journal of Power Sources, 2022, 537, 231464.	7.8	37
7	Carbon-Binder Weight Loading Optimization for Improved Lithium-Ion Battery Rate Capability. Journal of the Electrochemical Society, 2022, 169, 070519.	2.9	7
8	Mapping the architecture of single lithium ion electrode particles in 3D, using electron backscatter diffraction and machine learning segmentation. Journal of Power Sources, 2021, 483, 229148.	7.8	35
9	Significant life extension of lithium-ion batteries using compact metallic lithium reservoir with passive control. Electrochimica Acta, 2021, 370, 137777.	5.2	10
10	A Segregated Approach for Modeling the Electrochemistry in the 3-D Microstructure of Li-Ion Batteries and Its Acceleration Using Block Preconditioners. Journal of Scientific Computing, 2021, 86, 1.	2.3	6
11	Challenging Practices of Algebraic Battery Life Models through Statistical Validation and Model Identification via Machine-Learning. Journal of the Electrochemical Society, 2021, 168, 020502.	2.9	40
12	Early Battery Performance Prediction for Mixed Use Charging Profiles Using Hierarchal Machine Learning. Batteries and Supercaps, 2021, 4, 1186-1196.	4.7	10
13	Artificial generation of representative single Li-ion electrode particle architectures from microscopy data. Npj Computational Materials, 2021, 7, .	8.7	21
14	Fast-Charging Aging Considerations: Incorporation and Alignment of Cell Design and Material Degradation Pathways. ACS Applied Energy Materials, 2021, 4, 9133-9143.	5.1	21
15	Extended cycle life implications of fast charging for lithium-ion battery cathode. Energy Storage Materials, 2021, 41, 656-666.	18.0	50
16	Quantifying the influence of charge rate and cathode-particle architectures on degradation of Li-ion cells through 3D continuum-level damage models. Journal of Power Sources, 2021, 512, 230415.	7.8	34
17	Lithium-Ion Battery Life Model with Electrode Cracking and Early-Life Break-in Processes. Journal of the Electrochemical Society, 2021, 168, 100530.	2.9	14
18	From Battery Cell to Electrodes: Real-Time Estimation of Charge and Health of Individual Battery Electrodes. IEEE Transactions on Industrial Electronics, 2020, 67, 2167-2175.	7.9	20

#	Article	IF	Citations
19	Electron Backscatter Diffraction for Investigating Lithium-Ion Electrode Particle Architectures. Cell Reports Physical Science, 2020, 1, 100137.	5.6	34
20	Addressing the Observability Problem in Batteries: Algorithm Design for Electrode-level Charge and Health Estimation. , 2020, , .		4
21	Electrode scale and electrolyte transport effects on extreme fast charging of lithium-ion cells. Electrochimica Acta, 2020, 337, 135854.	5.2	122
22	Mechanistic Analysis of Microstructural Attributes to Lithium Plating in Fast Charging. ACS Applied Materials & Interfaces, 2020, 12, 55795-55808.	8.0	19
23	Model-Instructed Design of Novel Charging Protocols for the Extreme Fast Charging of Lithium-Ion Batteries Without Lithium Plating. Journal of the Electrochemical Society, 2020, 167, 080517.	2.9	53
24	Quantification of Inactive Lithium and Solidâ€“Electrolyte Interphase Species on Graphite Electrodes after Fast Charging. ACS Energy Letters, 2020, 5, 2045-2051.	17.4	97
25	Enabling fast charging of lithium-ion batteries through secondary- /dual- pore network: Part I - Analytical diffusion model. Electrochimica Acta, 2020, 342, 136034.	5.2	58
26	Stochasticity at Scales Leads to Lithium Intercalation Cascade. ACS Applied Materials & Interfaces, 2020, 12, 16359-16366.	8.0	18
27	Enabling fast charging of lithium-ion batteries through secondary-/dual- pore network: Part II - numerical model. Electrochimica Acta, 2020, 341, 136013.	5.2	42
28	Spatial dynamics of lithiation and lithium plating during high-rate operation of graphite electrodes. Energy and Environmental Science, 2020, 13, 2570-2584.	30.8	124
29	Quantitative Relationships Between Pore Tortuosity, Pore Topology, and Solid Particle Morphology Using a Novel Discrete Particle Size Algorithm. Journal of the Electrochemical Society, 2020, 167, 100513.	2.9	37
30	Spatial quantification of dynamic inter and intra particle crystallographic heterogeneities within lithium ion electrodes. Nature Communications, 2020, 11, 631.	12.8	73
31	Fingerprinting Redox Heterogeneity in Electrodes during Extreme Fast Charging. Journal of the Electrochemical Society, 2020, 167, 090542.	2.9	64
32	Investigation of Active Life Balancing to Recondition Li-ion Battery Packs for 2nd Life. , 2020, , .		10
33	Spatially Resolving Lithiation in Siliconâ€“Graphite Composite Electrodes via in Situ High-Energy X-ray Diffraction Computed Tomography. Nano Letters, 2019, 19, 3811-3820.	9.1	73
34	Numerical investigation of thermal runaway mitigation through a passive thermal management system. Journal of Power Sources, 2019, 429, 80-88.	7.8	74
35	A Reformulation of the Pseudo2D Battery Model Coupling Large Electrochemical-Mechanical Deformations at Particle and Electrode Levels. Journal of the Electrochemical Society, 2019, 166, A1330-A1339.	2.9	26
36	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.	2.9	162

#	Article	IF	Citations
37	Field-Aging Test Bed for Behind-the-Meter PV + Energy Storage. , 2019, , .		2
38	Safer Batteries via Active Fault Tolerant Control. , 2019, , .		3
39	Degradation mechanisms of high capacity 18650 cells containing Si-graphite anode and nickel-rich NMC cathode. Electrochimica Acta, 2019, 297, 1109-1120.	5.2	105
40	Comprehensive Modeling of Temperature-Dependent Degradation Mechanisms in Lithium Iron Phosphate Batteries. Journal of the Electrochemical Society, 2018, 165, A181-A193.	2.9	135
41	Secondary-Phase Stochastics in Lithium-Ion Battery Electrodes. ACS Applied Materials & Interfaces, 2018, 10, 6317-6326.	8.0	120
42	Resolving the Discrepancy in Tortuosity Factor Estimation for Li-Ion Battery Electrodes through Micro-Macro Modeling and Experiment. Journal of the Electrochemical Society, 2018, 165, A3403-A3426.	2.9	133
43	Electrochemistry Coupled Mesoscale Complexations in Electrodes Lead to Thermo-Electrochemical Extremes. ACS Applied Materials & Interfaces, 2018, 10, 28644-28655.	8.0	49
44	Investigation of Lithium Plating-Stripping Process in Li-Ion Batteries at Low Temperature Using an Electrochemical Model. Journal of the Electrochemical Society, 2018, 165, A2167-A2178.	2.9	153
45	Efficient and Extensible Quasi-Explicit Modular Nonlinear Multiscale Battery Model: GH-MSMD. Journal of the Electrochemical Society, 2017, 164, A1076-A1088.	2.9	18
46	Enabling fast charging â€“ Battery thermal considerations. Journal of Power Sources, 2017, 367, 228-236.	7.8	216
47	Galvanostatic Intermittent Titration and Performance Based Analysis of LiNi_{0.5}Co_{0.2}Mn_{0.3}O₂Cathode. Journal of the Electrochemical Society, 2017, 164, A3380-A3392.	2.9	102
48	Life prediction model for grid-connected Li-ion battery energy storage system. , 2017, , .		92
49	Life prediction of large lithium-ion battery packs with active and passive balancing. , 2017, , .		8
50	Quantitative Microstructure Characterization of a NMC Electrode. ECS Transactions, 2017, 77, 1095-1118.	0.5	12
51	Advanced cell-level control for extending electric vehicle battery pack lifetime. , 2016, , .		23
52	Analysis of Long-Range Interaction in Lithium-Ion Battery Electrodes. Journal of Electrochemical Energy Conversion and Storage, 2016, 13, .	2.1	44
53	Optimal battery utilization over lifetime for parallel hybrid electric vehicle to maximize fuel economy. , 2016, , .		7
54	Scaling Relations for Intercalation Induced Damage in Electrodes. Electrochimica Acta, 2016, 204, 31-49.	5.2	19

#	Article	IF	Citations
55	Degradation mechanisms and lifetime prediction for lithium-ion batteries — A control perspective. , 2015, , .		19
56	A multi-node thermal system model for lithium-ion battery packs. , 2015, , .		5
57	State-space representation of Li-ion battery porous electrode impedance model with balanced model reduction. Journal of Power Sources, 2015, 273, 1226-1236.	7.8	18
58	Modular approach for continuous cell-level balancing to improve performance of large battery packs. , 2014, , .		54
59	Fail-safe design for large capacity lithium-ion battery systems. Journal of Power Sources, 2012, 210, 243-253.	7.8	99
60	Multi-Domain Modeling of Lithium-Ion Batteries Encompassing Multi-Physics in Varied Length Scales. Journal of the Electrochemical Society, 2011, 158, A955.	2.9	277
61	Electric vehicle charge optimization including effects of lithium-ion battery degradation. , 2011, , .		94
62	Preface to special issue on electrical energy storage for future transportation and renewable energy. International Journal of Energy Research, 2010, 34, 95-96.	4.5	1
63	Thermal/electrical modeling for abuse-tolerant design of lithium ion modules. International Journal of Energy Research, 2010, 34, 204-215.	4.5	109
64	Power and thermal characterization of a lithium-ion battery pack for hybrid-electric vehicles. Journal of Power Sources, 2006, 160, 662-673.	7.8	587
65	Solid-state diffusion limitations on pulse operation of a lithium ion cell for hybrid electric vehicles. Journal of Power Sources, 2006, 161, 628-639.	7.8	308