Zheng Chen

List of Publications by Year
in descending order

84 papers	11,824 citations	57719 44 h-index	56687 83 g-index
85 all docs	85 docs citations	85 times ranked	13900 citing authors

#	Article	IF	Citations
1	Self-healing chemistry enables the stable operation of silicon microparticle anodes for high-energy lithium-ion batteries. Nature Chemistry, 2013, 5, 1042-1048.	6.6	1,031
2	A highly stretchable, transparent, and conductive polymer. Science Advances, 2017, 3, e1602076.	4.7	962
3	Highâ€Performance Supercapacitors Based on Intertwined CNT/V₂O₅ Nanowire Nanocomposites. Advanced Materials, 2011, 23, 791-795.	11.1	788
4	High-Performance Sodium-Ion Pseudocapacitors Based on Hierarchically Porous Nanowire Composites. ACS Nano, 2012, 6, 4319-4327.	7.3	688
5	Iridium single-atom catalyst on nitrogen-doped carbon for formic acid oxidation synthesized using a general hostâ€“guest strategy. Nature Chemistry, 2020, 12, 764-772.	6.6	452
6	Carbon-free high-loading silicon anodes enabled by sulfide solid electrolytes. Science, 2021, 373, 1494-1499.	6.0	393
7	Tailoring electrolyte solvation for Li metal batteries cycled at ultra-low temperature. Nature Energy, 2021, 6, 303-313.	19.8	386
8	From nanoscale interface characterization to sustainable energy storage using all-solid-state batteries. Nature Nanotechnology, 2020, 15, 170-180.	15.6	378
9	Highâ€Performance Supercapacitors Based on Nanocomposites of Nb₂O₅ Nanocrystals and Carbon Nanotubes. Advanced Energy Materials, 2011, 1, 1089-1093.	10.2	312
10	Elucidating Reversible Electrochemical Redox of Li₆PS₅Cl Solid Electrolyte. ACS Energy Letters, 2019, 4, 2418-2427.	8.8	288
11	High-Performance Lithium Metal Negative Electrode with a Soft and Flowable Polymer Coating. ACS Energy Letters, 2016, 1, 1247-1255.	8.8	281
12	A Threeâ€Dimensionally Interconnected Carbon Nanotubeâ€“Conducting Polymer Hydrogel Network for Highâ€Performance Flexible Battery Electrodes. Advanced Energy Materials, 2014, 4, 1400207.	10.2	280
13	Effective regeneration of LiCoO₂ from spent lithium-ion batteries: a direct approach towards high-performance active particles. Green Chemistry, 2018, 20, 851-862.	4.6	273
14	Resolving the Compositional and Structural Defects of Degraded LiNi_xCo_yMn_zO₂ Particles to Directly Regenerate High-Performance Lithium-Ion Battery Cathodes. ACS Energy Letters, 2018, 3, 1683-1692.	8.8	263
15	Efficient Direct Recycling of Lithium-Ion Battery Cathodes by Targeted Healing. Joule, 2020, 4, 2609-2626.	11.7	260
16	Fast and reversible thermoresponsive polymer switching materials for safer batteries. Nature Energy, 2016, 1, .	19.8	253
17	3D Porous Spongeâ€Inspired Electrode for Stretchable Lithiumâ€Ion Batteries. Advanced Materials, 2016, 28, 3578-3583.	11.1	247
18	Electrospun core-shell microfiber separator with thermal-triggered flame-retardant properties for lithium-ion batteries. Science Advances, 2017, 3, e1601978.	4.7	245

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19	An All-Fluorinated Ester Electrolyte for Stable High-Voltage Li Metal Batteries Capable of Ultra-Low-Temperature Operation. ACS Energy Letters, 2020, 5, 1438-1447.	8.8	214
20	Promoting H2O2 production via 2-electron oxygen reduction by coordinating partially oxidized Pd with defect carbon. Nature Communications, 2020, 11, 2178.	5.8	209
21	Ultrahigh Surface Area Three-Dimensional Porous Graphitic Carbon from Conjugated Polymeric Molecular Framework. ACS Central Science, 2015, 1, 68-76.	5.3	207
22	Highâ€Arealâ€Capacity Silicon Electrodes with Lowâ€Cost Silicon Particles Based on Spatial Control of Selfâ€Healing Binder. Advanced Energy Materials, 2015, 5, 1401826.	10.2	207
23	Highâ€Performance Supercapacitors Based on Hierarchically Porous Graphite Particles. Advanced Energy Materials, 2011, 1, 551-556.	10.2	194
24	Ambientâ€Pressure Relithiation of Degraded Li_xNi_{0.5}Co_{0.2}Mn_{0.3}O₂ (0 <) Tj ETQq0 0 0 rgBT /Overlock 10 Advanced Energy Materials, 2019, 9, 1900454.	10.2	189
25	Stretchable Lithiumâ€Ion Batteries Enabled by Deviceâ€Scaled Wavy Structure and Elasticâ€Sticky Separator. Advanced Energy Materials, 2017, 7, 1701076.	10.2	158
26	Hierarchical Nanostructured WO₃ with Biomimetic Proton Channels and Mixed Ionic-Electronic Conductivity for Electrochemical Energy Storage. Nano Letters, 2015, 15, 6802-6808.	4.5	157
27	High-performance flexible lithium-ion electrodes based on robust network architecture. Energy and Environmental Science, 2012, 5, 6845.	15.6	144
28	3D Nanocomposite Architectures from Carbonâ€Nanotubeâ€Threaded Nanocrystals for Highâ€Performance Electrochemical Energy Storage. Advanced Materials, 2014, 26, 339-345.	11.1	125
29	Exploiting Mechanistic Solvation Kinetics for Dualâ€Graphite Batteries with High Power Output at Extremely Low Temperature. Angewandte Chemie - International Edition, 2019, 58, 18892-18897.	7.2	117
30	Highâ€Performance Energyâ€Storage Architectures from Carbon Nanotubes and Nanocrystal Building Blocks. Advanced Materials, 2012, 24, 2030-2036.	11.1	112
31	Hierarchical manganese oxide/carbon nanocomposites for supercapacitor electrodes. Nano Research, 2011, 4, 216-225.	5.8	102
32	Ionic Liquidâ€Assisted Synthesis of TiO₂â€“Carbon Hybrid Nanostructures for Lithiumâ€Ion Batteries. Advanced Functional Materials, 2016, 26, 1338-1346.	7.8	97
33	Enabling Thin and Flexible Solid-State Composite Electrolytes by the Scalable Solution Process. ACS Applied Energy Materials, 2019, 2, 6542-6550.	2.5	96
34	The Effects of Cross-Linking in a Supramolecular Binder on Cycle Life in Silicon Microparticle Anodes. ACS Applied Materials & Interfaces, 2016, 8, 2318-2324.	4.0	90
35	Electrolyte design implications of ion-pairing in low-temperature Li metal batteries. Energy and Environmental Science, 2022, 15, 1647-1658.	15.6	89
36	Efficient Direct Recycling of Degraded LiMn₂O₄ Cathodes by One-Step Hydrothermal Relithiation. ACS Applied Materials & Interfaces, 2020, 12, 51546-51554.	4.0	88

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37	Understanding the Electrochemical Properties of Naphthalene Diimide: Implication for Stable and High-Rate Lithium-Ion Battery Electrodes. Chemistry of Materials, 2018, 30, 3508-3517.	3.2	84
38	Design and Optimization of the Direct Recycling of Spent Li-Ion Battery Cathode Materials. ACS Sustainable Chemistry and Engineering, 2021, 9, 4543-4553.	3.2	81
39	Enhancing Câ€“C Bond Scission for Efficient Ethanol Oxidation using PtIr Nanocube Electrocatalysts. ACS Catalysis, 2019, 9, 7618-7625.	5.5	79
40	A long-lasting dual-function electrolyte additive for stable lithium metal batteries. Nano Energy, 2020, 75, 104889.	8.2	77
41	Enabling the Low-Temperature Cycling of NMC||Graphite Pouch Cells with an Ester-Based Electrolyte. ACS Energy Letters, 2021, 6, 2016-2023.	8.8	63
42	Fire-extinguishing, recyclable liquefied gas electrolytes for temperature-resilient lithium-metal batteries. Nature Energy, 2022, 7, 548-559.	19.8	60
43	Nanosheet-assembled hierarchical Li4Ti5O12 microspheres for high-volumetric-density and high-rate Li-ion battery anode. Energy Storage Materials, 2019, 21, 361-371.	9.5	57
44	Fabrication of High-Quality Thin Solid-State Electrolyte Films Assisted by Machine Learning. ACS Energy Letters, 0, , 1639-1648.	8.8	53
45	Highly compact, free-standing porous electrodes from polymer-derived nanoporous carbons for efficient electrochemical capacitive deionization. Journal of Materials Chemistry A, 2019, 7, 1768-1778.	5.2	47
46	An ester electrolyte for lithiumâ€“sulfur batteries capable of ultra-low temperature cycling. Chemical Communications, 2020, 56, 9114-9117.	2.2	44
47	Phase-Separation-Induced Porous Lithiophilic Polymer Coating for High-Efficiency Lithium Metal Batteries. Nano Letters, 2021, 21, 4757-4764.	4.5	44
48	Achieving low-temperature hydrothermal relithiation by redox mediation for direct recycling of spent lithium-ion battery cathodes. Energy Storage Materials, 2022, 51, 54-62.	9.5	44
49	Sub-nanometer confinement enables facile condensation of gas electrolyte for low-temperature batteries. Nature Communications, 2021, 12, 3395.	5.8	42
50	Investigating dry room compatibility of sulfide solid-state electrolytes for scalable manufacturing. Journal of Materials Chemistry A, 2022, 10, 7155-7164.	5.2	41
51	Stabilizing Metallic Iron Nanoparticles by Conformal Graphitic Carbon Coating for High-Rate Anode in Niâ€“Fe Batteries. Nano Letters, 2020, 20, 1700-1706.	4.5	40
52	Achieving complete electrooxidation of ethanol by single atomic Rh decoration of Pt nanocubes. Proceedings of the National Academy of Sciences of the United States of America, 2022, 119, e2112109119.	3.3	40
53	Function-driven design of stimuli-responsive polymer composites: recent progress and challenges. Journal of Materials Chemistry C, 2018, 6, 11817-11834.	2.7	38
54	Diatomiteâ€Derived Hierarchical Porous Crystallineâ€AmorphousNetwork for Highâ€Performance and Sustainable Si Anodes. Advanced Functional Materials, 2020, 30, 2005956.	7.8	36

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55	Emerging trends in sustainable battery chemistries. Trends in Chemistry, 2021, 3, 620-630.	4.4	34
56	Understanding the formation of ultrathin mesoporous Li₄Ti₅O₁₂ nanosheets and their application in high-rate, long-life lithium-ion anodes. Nanoscale, 2019, 11, 520-531.	2.8	33
57	Boosting Activity and Selectivity of CO₂ Electroreduction by Preâ€Hydridizing Pd Nanocubes. Small, 2020, 16, e2005305.	5.2	32
58	Sustainable design of fully recyclable all solid-state batteries. MRS Energy & Sustainability, 2020, 7, 1.	1.3	32
59	Polyacrylic Acid Assisted Assembly of Oxide Particles and Carbon Nanotubes for Highâ€Performance Flexible Battery Anodes. Advanced Energy Materials, 2015, 5, 1401207.	10.2	27
60	Exploiting Mechanistic Solvation Kinetics for Dualâ€Graphite Batteries with High Power Output at Extremely Low Temperature. Angewandte Chemie, 2019, 131, 19068-19073.	1.6	26
61	Robust lithium-ion anodes based on nanocomposites of iron oxideâ€“carbonâ€“silicate. Journal of Materials Chemistry A, 2013, 1, 4539.	5.2	24
62	Enhanced Cycling Stability of Sulfur Electrodes through Effective Binding of Pyridine-Functionalized Polymer. ACS Energy Letters, 2017, 2, 2454-2462.	8.8	23
63	Characterization and Understanding of Thermoresponsive Polymer Composites Based on Spiky Nanostructured Fillers. Advanced Electronic Materials, 2017, 3, 1600397.	2.6	22
64	Enabling sustainable critical materials for battery storage through efficient recycling and improved design: A perspective. MRS Energy & Sustainability, 2020, 7, 1.	1.3	21
65	Forming Solid-Electrolyte Interphases with Rich Grain Boundaries on 3D Lithiophilic Skeleton for Low-Temperature Lithium Metal Batteries. Energy Storage Materials, 2022, 49, 454-462.	9.5	19
66	Solvent selection criteria for temperature-resilient lithiumâ€“sulfur batteries. Proceedings of the National Academy of Sciences of the United States of America, 2022, 119, .	3.3	17
67	Ready fabrication of thin-film electrodes from building nanocrystals for micro-supercapacitors. Chemical Communications, 2012, 48, 3736.	2.2	16
68	Boosting the cycling stability of Ni-rich layered oxide cathode by dry coating of ultrastable Li₃V₂(PO₄)₃ nanoparticles. Nanoscale, 2021, 13, 2811-2819.	2.8	16
69	High-performance aqueous supercapacitors based on hierarchically porous graphitized carbon. RSC Advances, 2012, 2, 1755.	1.7	15
70	Oxidative Stabilization of Dilute Ether Electrolytes via Anion Modification. ACS Energy Letters, 2022, 7, 675-682.	8.8	15
71	Mn-doped Li3V2(PO4)3 nanocrystal with enhanced electrochemical properties based on aerosol synthesis method. Journal of Materials Science, 2015, 50, 3075-3082.	1.7	13
72	Bioâ€Inspired Nanospiky Metal Particles Enable Thin, Flexible, and Thermoâ€Responsive Polymer Nanocomposites for Thermal Regulation. Advanced Functional Materials, 2020, 30, 1910328.	7.8	13

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73	Better lithium-ion storage materials made through hierarchical assemblies of active nanorods and nanocrystals. Journal of Materials Chemistry A, 2014, 2, 17536-17544.	5.2	12
74	Aerosolâ€Assisted Heteroassembly of Oxide Nanocrystals and Carbon Nanotubes into 3D Mesoporous Composites for Highâ€Rate Electrochemical Energy Storage. Small, 2015, 11, 3135-3142.	5.2	12
75	Thermoâ€responsive polymers for thermal regulation in electrochemical energy devices. Journal of Polymer Science, 2021, 59, 2230-2245.	2.0	12
76	Seeking direct cathode regeneration for more efficient lithium-ion battery recycling. Current Opinion in Electrochemistry, 2022, 31, 100875.	2.5	12
77	Predicting the Ion Desolvation Pathway of Lithium Electrolytes and Their Dependence on Chemistry and Temperature. Journal of Physical Chemistry Letters, 2022, 13, 4426-4433.	2.1	12
78	Scalable Synthesis of Uniform Nanosized Microporous Carbon Particles from Rigid Polymers for Rapid Ion and Molecule Adsorption. ACS Applied Materials & Interfaces, 2018, 10, 25429-25437.	4.0	6
79	Recycling of Li-Ion Batteries for Electric Vehicles. , 2022, , 98-107.		3
80	Boosting the Recycling Efficiency of Spent Lithiumâ€Ion Battery Cathodes Using a Green Reductant. Advanced Energy and Sustainability Research, 2021, 2, 2100040.	2.8	3
81	Scalable Solvent-Based Fabrication of Thermo-Responsive Polymer Nanocomposites for Battery Safety Regulation. Journal of the Electrochemical Society, 2021, 168, 080507.	1.3	3
82	Energy Storage: Aerosolâ€Assisted Heteroassembly of Oxide Nanocrystals and Carbon Nanotubes into 3D Mesoporous Composites for Highâ€Rate Electrochemical Energy Storage (Small 26/2015). Small, 2015, 11, 3196-3196.	5.2	1
83	Lithiumâ€Ion Batteries: Ionic Liquidâ€Assisted Synthesis of TiO₂â€“Carbon Hybrid Nanostructures for Lithiumâ€Ion Batteries (Adv. Funct. Mater. 9/2016). Advanced Functional Materials, 2016, 26, 1487-1487.	7.8	1
84	Sustainable design of fully recyclable all solid-state batteries. MRS Bulletin, 2020, 45, 990-991.	1.7	1