Jie Xiao

List of Publications by Year
in descending order

133 papers	27,618 citations	8732 75 h-index	13338 130 g-index
134 all docs	134 docs citations	134 times ranked	16775 citing authors

#	Article	IF	Citations
1	Pathways for practical high-energy long-cycling lithium metal batteries. Nature Energy, 2019, 4, 180-186.	19.8	2,101
2	Dendrite-Free Lithium Deposition via Self-Healing Electrostatic Shield Mechanism. Journal of the American Chemical Society, 2013, 135, 4450-4456.	6.6	1,736
3	A Soft Approach to Encapsulate Sulfur: Polyaniline Nanotubes for Lithiumâ€Sulfur Batteries with Long Cycle Life. Advanced Materials, 2012, 24, 1176-1181.	11.1	959
4	Hierarchically Porous Graphene as a Lithiumâ€“Air Battery Electrode. Nano Letters, 2011, 11, 5071-5078.	4.5	943
5	Intragranular cracking as a critical barrier for high-voltage usage of layer-structured cathode for lithium-ion batteries. Nature Communications, 2017, 8, 14101.	5.8	654
6	Lewis Acidâ€“Base Interactions between Polysulfides and Metal Organic Framework in Lithium Sulfur Batteries. Nano Letters, 2014, 14, 2345-2352.	4.5	623
7	Monolithic solidâ€“electrolyte interphases formed in fluorinated orthoformate-based electrolytes minimize Li depletion and pulverization. Nature Energy, 2019, 4, 796-805.	19.8	621
8	Enabling High-Voltage Lithium-Metal Batteries under Practical Conditions. Joule, 2019, 3, 1662-1676.	11.7	598
9	Materials Science and Materials Chemistry for Large Scale Electrochemical Energy Storage: From Transportation to Electrical Grid. Advanced Functional Materials, 2013, 23, 929-946.	7.8	590
10	High capacity, reversible alloying reactions in SnSb/C nanocomposites for Na-ion battery applications. Chemical Communications, 2012, 48, 3321.	2.2	566
11	Failure Mechanism for Fastâ€Charged Lithium Metal Batteries with Liquid Electrolytes. Advanced Energy Materials, 2015, 5, 1400993.	10.2	540
12	Understanding and applying coulombic efficiency in lithium metal batteries. Nature Energy, 2020, 5, 561-568.	19.8	526
13	High-energy lithium metal pouch cells with limited anode swelling and long stable cycles. Nature Energy, 2019, 4, 551-559.	19.8	492
14	Electrochemically Induced High Capacity Displacement Reaction of PEO/MoS₂/Graphene Nanocomposites with Lithium. Advanced Functional Materials, 2011, 21, 2840-2846.	7.8	491
15	High Energy Density Lithiumâ€“Sulfur Batteries: Challenges of Thick Sulfur Cathodes. Advanced Energy Materials, 2015, 5, 1402290.	10.2	483
16	Making Liâ€Air Batteries Rechargeable: Material Challenges. Advanced Functional Materials, 2013, 23, 987-1004.	7.8	477
17	Reversible planar gliding and microcracking in a single-crystalline Ni-rich cathode. Science, 2020, 370, 1313-1317.	6.0	472
18	Self-smoothing anode for achieving high-energy lithium metal batteries under realistic conditions. Nature Nanotechnology, 2019, 14, 594-601.	15.6	451

#	ARTICLE	IF	CITATIONS
19	Electrocatalysts for Nonaqueous Lithiumâ€“Air Batteries: Status, Challenges, and Perspective. ACS Catalysis, 2012, 2, 844-857.	5.5	443
20	High-Efficiency Lithium Metal Batteries with Fire-Retardant Electrolytes. Joule, 2018, 2, 1548-1558.	11.7	436
21	Highâ€Performance LiNi_{0.5}Mn_{1.5}O₄ Spinel Controlled by Mn³⁺ Concentration and Site Disorder. Advanced Materials, 2012, 24, 2109-2116.	11.1	434
22	Anodes for Rechargeable Lithiumâ€Sulfur Batteries. Advanced Energy Materials, 2015, 5, 1402273.	10.2	423
23	Optimization of mesoporous carbon structures for lithiumâ€“sulfur battery applications. Journal of Materials Chemistry, 2011, 21, 16603.	6.7	417
24	Lithium Metal Anodes with Nonaqueous Electrolytes. Chemical Reviews, 2020, 120, 13312-13348.	23.0	393
25	Liâ€•and Mnâ€Rich Cathode Materials: Challenges to Commercialization. Advanced Energy Materials, 2017, 7, 1601284.	10.2	383
26	Research Progress towards Understanding the Unique Interfaces between Concentrated Electrolytes and Electrodes for Energy Storage Applications. Advanced Science, 2017, 4, 1700032.	5.6	363
27	How lithium dendrites form in liquid batteries. Science, 2019, 366, 426-427.	6.0	362
28	Critical Parameters for Evaluating Coin Cells and Pouch Cells of Rechargeable Li-Metal Batteries. Joule, 2019, 3, 1094-1105.	11.7	358
29	Functioning Mechanism of AlF₃ Coating on the Li- and Mn-Rich Cathode Materials. Chemistry of Materials, 2014, 26, 6320-6327.	3.2	333
30	Structural and Chemical Evolution of Li- and Mn-Rich Layered Cathode Material. Chemistry of Materials, 2015, 27, 1381-1390.	3.2	311
31	Optimization of Air Electrode for Li/Air Batteries. Journal of the Electrochemical Society, 2010, 157, A487.	1.3	308
32	New Insights on the Structure of Electrochemically Deposited Lithium Metal and Its Solid Electrolyte Interphases via Cryogenic TEM. Nano Letters, 2017, 17, 7606-7612.	4.5	308
33	The role of the solid electrolyte interphase layer in preventing Li dendrite growth in solid-state batteries. Energy and Environmental Science, 2018, 11, 1803-1810.	15.6	304
34	Manipulating surface reactions in lithiumâ€“sulphur batteries using hybrid anode structures. Nature Communications, 2014, 5, 3015.	5.8	290
35	Balancing interfacial reactions to achieve long cycle life in high-energy lithium metal batteries. Nature Energy, 2021, 6, 723-732.	19.8	285
36	Mitigating Voltage Fade in Cathode Materials by Improving the Atomic Level Uniformity of Elemental Distribution. Nano Letters, 2014, 14, 2628-2635.	4.5	273

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37	Investigation on the charging process of Li2O2-based air electrodes in Liâ€"O2 batteries with organic carbonate electrolytes. Journal of Power Sources, 2011, 196, 3894-3899.	4.0	229
38	Ionic liquid-enhanced solid state electrolyte interface (SEI) for lithiumâ€"sulfur batteries. Journal of Materials Chemistry A, 2013, 1, 8464.	5.2	229
39	Challenges for and Pathways toward Li-Metal-Based All-Solid-State Batteries. ACS Energy Letters, 0, , 1399-1404.	8.8	228
40	Origin of lithium whisker formation and growth under stress. Nature Nanotechnology, 2019, 14, 1042-1047.	15.6	211
41	Stabilizing Zinc Anode Reactions by Polyethylene Oxide Polymer in Mild Aqueous Electrolytes. Advanced Functional Materials, 2020, 30, 2003932.	7.8	210
42	The interplay between solid electrolyte interface (SEI) and dendritic lithium growth. Nano Energy, 2017, 40, 34-41.	8.2	209
43	Reaction mechanisms for the limited reversibility of Liâ€"O2 chemistry in organic carbonate electrolytes. Journal of Power Sources, 2011, 196, 9631-9639.	4.0	198
44	Investigation of the rechargeability of Liâ€"O2 batteries in non-aqueous electrolyte. Journal of Power Sources, 2011, 196, 5674-5678.	4.0	197
45	Role of inner solvation sheath within saltâ€"solvent complexes in tailoring electrode/electrolyte interphases for lithium metal batteries. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 28603-28613.	3.3	191
46	Ambient operation of Li/Air batteries. Journal of Power Sources, 2010, 195, 4332-4337.	4.0	189
47	Interfacial behaviours between lithium ion conductors and electrode materials in various battery systems. Journal of Materials Chemistry A, 2016, 4, 15266-15280.	5.2	184
48	Towards Highâ€Performance Nonaqueous Redox Flow Electrolyte Via Ionic Modification of Active Species. Advanced Energy Materials, 2015, 5, 1400678.	10.2	181
49	Direct Observation of Sulfur Radicals as Reaction Media in Lithium Sulfur Batteries. Journal of the Electrochemical Society, 2015, 162, A474-A478.	1.3	178
50	Identification of LiH and nanocrystalline LiF in the solidâ€"electrolyte interphase of lithium metal anodes. Nature Nanotechnology, 2021, 16, 549-554.	15.6	171
51	Enhanced Li+ ion transport in LiNi0.5Mn1.5O4 through control of site disorder. Physical Chemistry Chemical Physics, 2012, 14, 13515.	1.3	167
52	Optimization of Nonaqueous Electrolytes for Primary Lithium/Air Batteries Operated in Ambient Environment. Journal of the Electrochemical Society, 2009, 156, A773.	1.3	166
53	Cathode porosity is a missing key parameter to optimize lithium-sulfur battery energy density. Nature Communications, 2019, 10, 4597.	5.8	166
54	Glassy Li metal anode for high-performance rechargeable Li batteries. Nature Materials, 2020, 19, 1339-1345.	13.3	162

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55	How to Obtain Reproducible Results for Lithium Sulfur Batteries?. Journal of the Electrochemical Society, 2013, 160, A2288-A2292.	1.3	149
56	On the Way Toward Understanding Solution Chemistry of Lithium Polysulfides for High Energy Liâ€“S Redox Flow Batteries. Advanced Energy Materials, 2015, 5, 1500113.	10.2	142
57	Additive engineering for robust interphases to stabilize high-Ni layered structures at ultra-high voltage of 4.8â€‰V. Nature Energy, 2022, 7, 484-494.	19.8	138
58	Polyamidoamine dendrimer-based binders for high-loading lithiumâ€“sulfur battery cathodes. Nano Energy, 2016, 19, 176-186.	8.2	132
59	Effects of fluorinated solvents on electrolyte solvation structures and electrode/electrolyte interphases for lithium metal batteries. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	131
60	Probing the Degradation Mechanism of Li₂MnO₃ Cathode for Li-Ion Batteries. Chemistry of Materials, 2015, 27, 975-982.	3.2	130
61	Reaction heterogeneity in practical high-energy lithiumâ€“sulfur pouch cells. Energy and Environmental Science, 2020, 13, 3620-3632.	15.6	127
62	Factors affecting the battery performance of anthraquinone-based organic cathode materials. Journal of Materials Chemistry, 2012, 22, 4032.	6.7	126
63	Mechanism of Formation of Li₇P₃S₁₁ Solid Electrolytes through Liquid Phase Synthesis. Chemistry of Materials, 2018, 30, 990-997.	3.2	118
64	Stabilization of Silicon Anode for Li-Ion Batteries. Journal of the Electrochemical Society, 2010, 157, A1047.	1.3	108
65	Atomic-Resolution Visualization of Distinctive Chemical Mixing Behavior of Ni, Co, and Mn with Li in Layered Lithium Transition-Metal Oxide Cathode Materials. Chemistry of Materials, 2015, 27, 5393-5401.	3.2	108
66	Following the Transient Reactions in Lithiumâ€“Sulfur Batteries Using an In Situ Nuclear Magnetic Resonance Technique. Nano Letters, 2015, 15, 3309-3316.	4.5	107
67	Electrochemical Kinetics and Performance of Layered Composite Cathode Material Li[Li_{0.2}Ni_{0.2}Mn_{0.6}]O₂. Journal of the Electrochemical Society, 2013, 160, A2212-A2219.	1.3	104
68	Ni and Co Segregations on Selective Surface Facets and Rational Design of Layered Lithium Transitionâ€Metal Oxide Cathodes. Advanced Energy Materials, 2016, 6, 1502455.	10.2	100
69	Revisit Carbon/Sulfur Composite for Li-S Batteries. Journal of the Electrochemical Society, 2013, 160, A1624-A1628.	1.3	98
70	Research Progress toward the Practical Applications of Lithiumâ€“Sulfur Batteries. ACS Applied Materials & Interfaces, 2017, 9, 24407-24421.	4.0	95
71	Understanding the Lithium Sulfur Battery System at Relevant Scales. Advanced Energy Materials, 2015, 5, 1501102.	10.2	93
72	Formation of Reversible Solid Electrolyte Interface on Graphite Surface from Concentrated Electrolytes. Nano Letters, 2017, 17, 1602-1609.	4.5	91

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73	Controlled Nucleation and Growth Process of Li₂S₂/Li₂S in Lithium-Sulfur Batteries. Journal of the Electrochemical Society, 2013, 160, A1992-A1996.	1.3	89
74	Detrimental Effects of Chemical Crossover from the Lithium Anode to Cathode in Rechargeable Lithium Metal Batteries. ACS Energy Letters, 2018, 3, 2921-2930.	8.8	89
75	Direct Observation of the Redistribution of Sulfur and Polysufides in Liâ€“S Batteries During the First Cycle by In Situ Xâ€Ray Fluorescence Microscopy. Advanced Energy Materials, 2015, 5, 1500072.	10.2	84
76	Advanced Characterization Techniques in Promoting Mechanism Understanding for Lithiumâ€“Sulfur Batteries. Advanced Functional Materials, 2018, 28, 1707543.	7.8	81
77	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
78	Tunable electrochemical properties of fluorinated graphene. Journal of Materials Chemistry A, 2013, 1, 7866.	5.2	74
79	Interface modifications by anion receptors for high energy lithium ion batteries. Journal of Power Sources, 2014, 250, 313-318.	4.0	74
80	Ammonium Additives to Dissolve Lithium Sulfide through Hydrogen Binding for High-Energy Lithiumâ€“Sulfur Batteries. ACS Applied Materials & Interfaces, 2017, 9, 4290-4295.	4.0	74
81	Effects of structural defects on the electrochemical activation of Li2MnO3. Nano Energy, 2015, 16, 143-151.	8.2	73
82	The roles of oxygen non-stoichiometry on the electrochemical properties of oxide-based cathode materials. Nano Today, 2016, 11, 678-694.	6.2	72
83	Reinvestigation on the state-of-the-art nonaqueous carbonate electrolytes for 5ÂV Li-ion battery applications. Journal of Power Sources, 2012, 213, 304-316.	4.0	69
84	High Capacity Pouch-Type Liâ€“Air Batteries. Journal of the Electrochemical Society, 2010, 157, A760.	1.3	67
85	Enabling High-Energy-Density Cathode for Lithiumâ€“Sulfur Batteries. ACS Applied Materials & Interfaces, 2018, 10, 23094-23102.	4.0	67
86	Restricting the Solubility of Polysulfides in Liâ€S Batteries Via Electrolyte Salt Selection. Advanced Energy Materials, 2016, 6, 1600160.	10.2	66
87	Optimized Al Doping Improves Both Interphase Stability and Bulk Structural Integrity of Ni-Rich NMC Cathode Materials. ACS Applied Energy Materials, 2020, 3, 3369-3377.	2.5	66
88	Optimization of fluorinated orthoformate based electrolytes for practical high-voltage lithium metal batteries. Energy Storage Materials, 2021, 34, 76-84.	9.5	65
89	Impacts of lean electrolyte on cycle life for rechargeable Li metal batteries. Journal of Power Sources, 2018, 407, 53-62.	4.0	62
90	Excellent Cycling Stability of Sodium Anode Enabled by a Stable Solid Electrolyte Interphase Formed in Etherâ€Based Electrolytes. Advanced Functional Materials, 2020, 30, 2001151.	7.8	60

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91	Surface and structural stabilities of carbon additives in high voltage lithium ion batteries. Journal of Power Sources, 2013, 227, 211-217.	4.0	55
92	High performance Li-ion sulfur batteries enabled by intercalation chemistry. Chemical Communications, 2015, 51, 13454-13457.	2.2	55
93	Unlocking the passivation nature of the cathodeâ€“air interfacial reactions in lithium ion batteries. Nature Communications, 2020, 11, 3204.	5.8	55
94	Hybrid Air-Electrode for Li/Air Batteries. Journal of the Electrochemical Society, 2010, 157, A294.	1.3	50
95	Molecular-confinement of polysulfides within mesoscale electrodes for the practical application of lithium sulfur batteries. Nano Energy, 2015, 13, 267-274.	8.2	50
96	Locking oxygen in lattice: A quantifiable comparison of gas generation in polycrystalline and single crystal Ni-rich cathodes. Energy Storage Materials, 2022, 47, 195-202.	9.5	50
97	Hybrid CFxâ€“Ag2V4O11 as a high-energy, power density cathode for application in an underwater acoustic microtransmitter. Electrochemistry Communications, 2011, 13, 1344-1344.	2.3	45
98	Effects of cell positive cans and separators on the performance of high-voltage Li-ion batteries. Journal of Power Sources, 2012, 213, 160-168.	4.0	44
99	Reversible Electrochemical Interface of Mg Metal and Conventional Electrolyte Enabled by Intermediate Adsorption. ACS Energy Letters, 2020, 5, 200-206.	8.8	44
100	Good Practices for Rechargeable Lithium Metal Batteries. Journal of the Electrochemical Society, 2019, 166, A4141-A4149.	1.3	42
101	Mesoscale-architecture-based crack evolution dictating cycling stability of advanced lithium ion batteries. Nano Energy, 2021, 79, 105420.	8.2	36
102	Lattice Mn³⁺Behaviors in Li₄Ti₅O₁₂/LiNi_{0.5}Mn_{1.5}O₄Full Cells. Journal of the Electrochemical Society, 2013, 160, A1264-A1268.	1.3	35
103	Evolution of the rate-limiting step: From thin film to thick Ni-rich cathodes. Journal of Power Sources, 2020, 454, 227966.	4.0	35
104	Practical Challenges in Employing Graphene for Lithium-Ion Batteries and Beyond. Small Methods, 2017, 1, 1700099.	4.6	31
105	Achieving highly reproducible results in graphite-based Li-ion full coin cells. Joule, 2021, 5, 1011-1015.	11.7	31
106	Hierarchically structured materials for lithium batteries. Nanotechnology, 2013, 24, 424004.	1.3	30
107	Micro-battery Development for Juvenile Salmon Acoustic Telemetry System Applications. Scientific Reports, 2014, 4, 3790.	1.6	25
108	Interplay between two-phase and solid solution reactions in high voltage spinel cathode material for lithium ion batteries. Journal of Power Sources, 2013, 242, 736-741.	4.0	24

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109	Understanding Diffusion and Electrochemical Reduction of Li⁺ Ions in Liquid Lithium Metal Batteries. Journal of the Electrochemical Society, 2021, 168, 060513.	1.3	21
110	Systematic Evaluation of Carbon Hosts for High-Energy Rechargeable Lithium-Metal Batteries. ACS Energy Letters, 0, , 1550-1559.	8.8	20
111	The Effect of Entropy and Enthalpy Changes on the Thermal Behavior of Li-Mn-Rich Layered Composite Cathode Materials. Journal of the Electrochemical Society, 2016, 163, A571-A577.	1.3	19
112	Fundamental Linkage Between Structure, Electrochemical Properties, and Chemical Compositions of LiNi_{1â€“<i>x</i>â€“<i>y</i>}Mn<i>_x</i>Co<i>_y</i>O₂ Cathode Materials. ACS Applied Materials & Interfaces, 2021, 13, 2622-2629.	4.0	19
113	Minimizing Polysulfide Shuttle Effect in Lithium-Ion Sulfur Batteries by Anode Surface Passivation. ACS Applied Materials & Interfaces, 2018, 10, 21965-21972.	4.0	18
114	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
115	To Pave the Way for Large-Scale Electrode Processing of Moisture-Sensitive Ni-Rich Cathodes. Journal of the Electrochemical Society, 2022, 169, 020521.	1.3	15
116	Hierarchical electrode architectures for high energy lithium-chalcogen rechargeable batteries. Nano Energy, 2018, 51, 668-679.	8.2	13
117	Fundamental understanding and rational design of high energy structural microbatteries. Nano Energy, 2018, 43, 310-316.	8.2	12
118	Lab-on-a-Fish: Wireless, Miniaturized, Fully Integrated, Implantable Biotelemetric Tag for Real-Time <i>In Vivo</i> Monitoring of Aquatic Animals. IEEE Internet of Things Journal, 2022, 9, 10751-10762.	5.5	12
119	Early Failure of Lithiumâ€“Sulfur Batteries at Practical Conditions: Crosstalk between Sulfur Cathode and Lithium Anode. Advanced Science, 2022, 9, e2201640.	5.6	12
120	Energetics of Defects on Graphene through Fluorination. ChemSusChem, 2014, 7, 1295-1300.	3.6	10
121	A Lithium Feedstock Pathway: Coupled Electrochemical Extraction and Direct Battery Materials Manufacturing. ACS Energy Letters, 2022, 7, 2420-2427.	8.8	9
122	Nanostructured materials for rechargeable batteries: synthesis, fundamental understanding and limitations. Current Opinion in Chemical Engineering, 2013, 2, 151-159.	3.8	7
123	Communicationâ€”Pressure Evolution in Constrained Rechargeable Lithium-metal Pouch Cells. Journal of the Electrochemical Society, 2020, 167, 020511.	1.3	7
124	Origin, Nature, and the Dynamic Behavior of Nanoscale Vacancy Clusters in Ni-Rich Layered Oxide Cathodes. ACS Applied Materials & Interfaces, 2021, 13, 18849-18855.	4.0	7
125	The Effect of Solvent on the Capacity Retention in a Germanium Anode for Lithium Ion Batteries. Journal of Electrochemical Energy Conversion and Storage, 2018, 15, .	1.1	4
126	Interfacial Reaction Dependent Performance of Hollow Carbon Nanosphere Ã¢â‚¬â€œ Sulfur Composite as a Cathode for Li-S Battery. Frontiers in Energy Research, 2015, 3, .	1.2	3

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127	Tuning Solid Electrolyte Interphase Layer Properties through the Integration of Conversion Reaction. ACS Applied Materials & Interfaces, 2019, 11, 44204-44213.	4.0	3
128	Perspectiveâ€"Electrochemistry in Understanding and Designing Electrochemical Energy Storage Systems. Journal of the Electrochemical Society, 2022, 169, 010524.	1.3	3
129	Batteries: Towards Highâ€Performance Nonaqueous Redox Flow Electrolyte Via Ionic Modification of Active Species (Adv. Energy Mater. 1/2015). Advanced Energy Materials, 2015, 5, .	10.2	2
130	Cathode Materials: Ni and Co Segregations on Selective Surface Facets and Rational Design of Layered Lithium Transition-Metal Oxide Cathodes (Adv. Energy Mater. 9/2016). Advanced Energy Materials, 2016, 6, .	10.2	2
131	Primary Lithium Air Batteries. , 2014, , 255-289.		2
132	A granular approach to electrode design. Science, 2022, 376, 455-456.	6.0	2
133	Investigating Side Reactions and Coating Effects on High Voltage Layered Cathodes for Lithium Ion Batteries. Microscopy and Microanalysis, 2016, 22, 1312-1313.	0.2	0