Jun Liu

List of Publications by Year
in descending order

100 papers	31,082 citations	13865 67 h-index	33894 99 g-index
101 all docs	101 docs citations	101 times ranked	21132 citing authors

#	Article	IF	Citations
1	Electrochemical Energy Storage for Green Grid. Chemical Reviews, 2011, 111, 3577-3613.	47.7	4,276
2	Reversible aqueous zinc/manganese oxide energy storage from conversion reactions. Nature Energy, 2016, 1, .	39.5	2,186
3	Pathways for practical high-energy long-cycling lithium metal batteries. Nature Energy, 2019, 4, 180-186.	39.5	2,101
4	Dendrite-Free Lithium Deposition via Self-Healing Electrostatic Shield Mechanism. Journal of the American Chemical Society, 2013, 135, 4450-4456.	13.7	1,736
5	Complex and oriented ZnO nanostructures. Nature Materials, 2003, 2, 821-826.	27.5	1,404
6	Mesoporous silicon sponge as an anti-pulverization structure for high-performance lithium-ion battery anodes. Nature Communications, 2014, 5, 4105.	12.8	1,160
7	Stable cycling of high-voltage lithium metal batteries in ether electrolytes. Nature Energy, 2018, 3, 739-746.	39.5	767
8	Highâ€Voltage Lithiumâ€Metal Batteries Enabled by Localized Highâ€Concentration Electrolytes. Advanced Materials, 2018, 30, e1706102.	21.0	761
9	A Stable Vanadium Redoxâ€Flow Battery with High Energy Density for Largeâ€Scale Energy Storage. Advanced Energy Materials, 2011, 1, 394-400.	19.5	688
10	Localized High-Concentration Sulfone Electrolytes for High-Efficiency Lithium-Metal Batteries. CheM, 2018, 4, 1877-1892.	11.7	628
11	Monolithic solidâ€"electrolyte interphases formed in fluorinated orthoformate-based electrolytes minimize Li depletion and pulverization. Nature Energy, 2019, 4, 796-805.	39.5	621
12	Enabling High-Voltage Lithium-Metal Batteries under Practical Conditions. Joule, 2019, 3, 1662-1676.	24.0	598
13	Non-flammable electrolytes with high salt-to-solvent ratios for Li-ion and Li-metal batteries. Nature Energy, 2018, 3, 674-681.	39.5	557
14	Failure Mechanism for Fastâ€Charged Lithium Metal Batteries with Liquid Electrolytes. Advanced Energy Materials, 2015, 5, 1400993.	19.5	540
15	Understanding and applying coulombic efficiency in lithium metal batteries. Nature Energy, 2020, 5, 561-568.	39.5	526
16	High-energy lithium metal pouch cells with limited anode swelling and long stable cycles. Nature Energy, 2019, 4, 551-559.	39.5	492
17	High Energy Density Lithiumâ€"Sulfur Batteries: Challenges of Thick Sulfur Cathodes. Advanced Energy Materials, 2015, 5, 1402290.	19.5	483
18	Self-smoothing anode for achieving high-energy lithium metal batteries under realistic conditions. Nature Nanotechnology, 2019, 14, 594-601.	31.5	451

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19	High-Efficiency Lithium Metal Batteries with Fire-Retardant Electrolytes. Joule, 2018, 2, 1548-1558.	24.0	436
20	Bridging the academic and industrial metrics for next-generation practical batteries. Nature Nanotechnology, 2019, 14, 200-207.	31.5	420
21	Lithium Metal Anodes with Nonaqueous Electrolytes. Chemical Reviews, 2020, 120, 13312-13348.	47.7	393
22	Ambipolar zinc-polyiodide electrolyte for a high-energy density aqueous redox flow battery. Nature Communications, 2015, 6, 6303.	12.8	392
23	Materials and Systems for Organic Redox Flow Batteries: Status and Challenges. ACS Energy Letters, 2017, 2, 2187-2204.	17.4	359
24	Critical Parameters for Evaluating Coin Cells and Pouch Cells of Rechargeable Li-Metal Batteries. Joule, 2019, 3, 1094-1105.	24.0	358
25	A biomimetic high-capacity phenazine-based anolyte for aqueous organic redox flow batteries. Nature Energy, 2018, 3, 508-514.	39.5	337
26	Non-encapsulation approach for high-performance Liâ€“S batteries through controlled nucleation and growth. Nature Energy, 2017, 2, 813-820.	39.5	326
27	New Insights on the Structure of Electrochemically Deposited Lithium Metal and Its Solid Electrolyte Interphases via Cryogenic TEM. Nano Letters, 2017, 17, 7606-7612.	9.1	308
28	High-Concentration Ether Electrolytes for Stable High-Voltage Lithium Metal Batteries. ACS Energy Letters, 2019, 4, 896-902.	17.4	302
29	Capacity Fading of Ni-Rich NCA Cathodes: Effect of Microcracking Extent. ACS Energy Letters, 2019, 4, 2995-3001.	17.4	297
30	Manipulating surface reactions in lithiumâ€“sulphur batteries using hybrid anode structures. Nature Communications, 2014, 5, 3015.	12.8	290
31	Balancing interfacial reactions to achieve long cycle life in high-energy lithium metal batteries. Nature Energy, 2021, 6, 723-732.	39.5	285
32	Heuristic solution for achieving long-term cycle stability for Ni-rich layered cathodes at full depth of discharge. Nature Energy, 2020, 5, 860-869.	39.5	278
33	A Localized High-Concentration Electrolyte with Optimized Solvents and Lithium Difluoro(oxalate)borate Additive for Stable Lithium Metal Batteries. ACS Energy Letters, 2018, 3, 2059-2067.	17.4	257
34	Ionic liquid-enhanced solid state electrolyte interface (SEI) for lithiumâ€“sulfur batteries. Journal of Materials Chemistry A, 2013, 1, 8464.	10.3	229
35	Origin of lithium whisker formation and growth under stress. Nature Nanotechnology, 2019, 14, 1042-1047.	31.5	211
36	Molecular structure and stability of dissolved lithium polysulfide species. Physical Chemistry Chemical Physics, 2014, 16, 10923-10932.	2.8	210

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37	Controlling Solidâ€“Liquid Conversion Reactions for a Highly Reversible Aqueous Zincâ€“Iodine Battery. ACS Energy Letters, 2017, 2, 2674-2680.	17.4	207
38	Advances in the Development of Singleâ€Atom Catalysts for Highâ€Energyâ€Density Lithiumâ€“Sulfur Batteries. Advanced Materials, 2022, 34, e2200102.	21.0	202
39	Reaction Mechanisms for Long-Life Rechargeable Zn/MnO₂ Batteries. Chemistry of Materials, 2019, 31, 2036-2047.	6.7	195
40	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.	7.1	191
41	Towards Highâ€Performance Nonaqueous Redox Flow Electrolyte Via Ionic Modification of Active Species. Advanced Energy Materials, 2015, 5, 1400678.	19.5	181
42	Identification of LiH and nanocrystalline LiF in the solidâ€“electrolyte interphase of lithium metal anodes. Nature Nanotechnology, 2021, 16, 549-554.	31.5	171
43	A symmetric organic-based nonaqueous redox flow battery and its state of charge diagnostics by FTIR. Journal of Materials Chemistry A, 2016, 4, 5448-5456.	10.3	167
44	Glassy Li metal anode for high-performance rechargeable Li batteries. Nature Materials, 2020, 19, 1339-1345.	27.5	162
45	â€œWine-Dark Seaâ€•in an Organic Flow Battery: Storing Negative Charge in 2,1,3-Benzothiadiazole Radicals Leads to Improved Cyclability. ACS Energy Letters, 2017, 2, 1156-1161.	17.4	160
46	How to Obtain Reproducible Results for Lithium Sulfur Batteries?. Journal of the Electrochemical Society, 2013, 160, A2288-A2292.	2.9	149
47	Stable Li Metal Anode with â€œIonâ€“Solvent-Coordinatedâ€•Nonflammable Electrolyte for Safe Li Metal Batteries. ACS Energy Letters, 2019, 4, 483-488.	17.4	148
48	Addressing Passivation in Lithiumâ€“Sulfur Battery Under Lean Electrolyte Condition. Advanced Functional Materials, 2018, 28, 1707234.	14.9	143
49	On the Way Toward Understanding Solution Chemistry of Lithium Polysulfides for High Energy Liâ€“S Redox Flow Batteries. Advanced Energy Materials, 2015, 5, 1500113.	19.5	142
50	Suppressing Lithium Dendrite Growth by Metallic Coating on a Separator. Advanced Functional Materials, 2017, 27, 1704391.	14.9	141
51	Low-solvation electrolytes for high-voltage sodium-ion batteries. Nature Energy, 2022, 7, 718-725.	39.5	137
52	Progress and directions in low-cost redox-flow batteries for large-scale energy storage. National Science Review, 2017, 4, 91-105.	9.5	131
53	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, .	7.1	131
54	Reaction heterogeneity in practical high-energy lithiumâ€“sulfur pouch cells. Energy and Environmental Science, 2020, 13, 3620-3632.	30.8	127

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55	Designing Advanced In Situ Electrode/Electrolyte Interphases for Wide Temperature Operation of 4.5 V Li||LiCoO₂ Batteries. Advanced Materials, 2020, 32, e2004898.	21.0	123
56	Improving Lithiumâ€“Sulfur Battery Performance under Lean Electrolyte through Nanoscale Confinement in Soft Swellable Gels. Nano Letters, 2017, 17, 3061-3067.	9.1	122
57	Mechanism of Formation of Li₇P₃S₁₁ Solid Electrolytes through Liquid Phase Synthesis. Chemistry of Materials, 2018, 30, 990-997.	6.7	118
58	Effect of the Anion Activity on the Stability of Li Metal Anodes in Lithiumâ€Sulfur Batteries. Advanced Functional Materials, 2016, 26, 3059-3066.	14.9	117
59	New Prelithiated V₂O₅ Superstructure for Lithium-Ion Batteries with Long Cycle Life and High Power. ACS Energy Letters, 2020, 5, 31-38.	17.4	113
60	Following the Transient Reactions in Lithiumâ€“Sulfur Batteries Using an In Situ Nuclear Magnetic Resonance Technique. Nano Letters, 2015, 15, 3309-3316.	9.1	107
61	Revisit Carbon/Sulfur Composite for Li-S Batteries. Journal of the Electrochemical Society, 2013, 160, A1624-A1628.	2.9	98
62	Free-standing V2O5 electrode for flexible lithium ion batteries. Electrochemistry Communications, 2011, 13, 383-386.	4.7	93
63	Formation of Reversible Solid Electrolyte Interface on Graphite Surface from Concentrated Electrolytes. Nano Letters, 2017, 17, 1602-1609.	9.1	91
64	Controlled Nucleation and Growth Process of Li₂S₂/Li₂S in Lithium-Sulfur Batteries. Journal of the Electrochemical Society, 2013, 160, A1992-A1996.	2.9	89
65	Detrimental Effects of Chemical Crossover from the Lithium Anode to Cathode in Rechargeable Lithium Metal Batteries. ACS Energy Letters, 2018, 3, 2921-2930.	17.4	89
66	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.	19.5	84
67	Metalâ€“Organic Frameworks as Highly Active Electrocatalysts for High-Energy Density, Aqueous Zinc-Polyiodide Redox Flow Batteries. Nano Letters, 2016, 16, 4335-4340.	9.1	79
68	Enabling High-Energy-Density Cathode for Lithiumâ€“Sulfur Batteries. ACS Applied Materials & Interfaces, 2018, 10, 23094-23102.	8.0	67
69	Restricting the Solubility of Polysulfides in Liâ€S Batteries Via Electrolyte Salt Selection. Advanced Energy Materials, 2016, 6, 1600160.	19.5	66
70	Optimization of fluorinated orthoformate based electrolytes for practical high-voltage lithium metal batteries. Energy Storage Materials, 2021, 34, 76-84.	18.0	65
71	An Aqueous Redox Flow Battery Based on Neutral Alkali Metal Ferri/ferrocyanide and Polysulfide Electrolytes. Journal of the Electrochemical Society, 2016, 163, A5150-A5153.	2.9	64
72	Interface engineering for composite cathodes in sulfide-based all-solid-state lithium batteries. Journal of Energy Chemistry, 2021, 60, 32-60.	12.9	64

#	Article	IF	Citations
73	Anion-Tunable Properties and Electrochemical Performance of Functionalized Ferrocene Compounds. Scientific Reports, 2015, 5, 14117.	3.3	62
74	Enhanced Stability of Lithium Metal Anode by using a 3D Porous Nickel Substrate. ChemElectroChem, 2018, 5, 761-769.	3.4	58
75	High-Performance Aqueous Zincâ€"Manganese Battery with Reversible Mn2+/Mn4+ Double Redox Achieved by Carbon Coated MnOx Nanoparticles. Nano-Micro Letters, 2020, 12, 110.	27.0	58
76	In situ TEM visualization of LiF nanosheet formation on the cathode-electrolyte interphase (CEI) in liquid-electrolyte lithium-ion batteries. Matter, 2022, 5, 1235-1250.	10.0	56
77	High performance Li-ion sulfur batteries enabled by intercalation chemistry. Chemical Communications, 2015, 51, 13454-13457.	4.1	55
78	Unlocking the passivation nature of the cathodeâ€"air interfacial reactions in lithium ion batteries. Nature Communications, 2020, 11, 3204.	12.8	55
79	Molecular-confinement of polysulfides within mesoscale electrodes for the practical application of lithium sulfur batteries. Nano Energy, 2015, 13, 267-274.	16.0	50
80	Near surface nucleation and particle mediated growth of colloidal Au nanocrystals. Nanoscale, 2018, 10, 11907-11912.	5.6	48
81	Multinuclear NMR Study of the Solid Electrolyte Interface Formed in Lithium Metal Batteries. ACS Applied Materials & Interfaces, 2017, 9, 14741-14748.	8.0	47
82	Reversible Electrochemical Interface of Mg Metal and Conventional Electrolyte Enabled by Intermediate Adsorption. ACS Energy Letters, 2020, 5, 200-206.	17.4	44
83	Good Practices for Rechargeable Lithium Metal Batteries. Journal of the Electrochemical Society, 2019, 166, A4141-A4149.	2.9	42
84	The Quest for Stable Potassiumâ€Ion Battery Chemistry. Advanced Materials, 2022, 34, e2106876.	21.0	41
85	Electrode materials for aqueous multivalent metal-ion batteries: Current status and future prospect. Journal of Energy Chemistry, 2022, 67, 563-584.	12.9	36
86	Effects of Anion Mobility on Electrochemical Behaviors of Lithiumâ€"Sulfur Batteries. Chemistry of Materials, 2017, 29, 9023-9029.	6.7	35
87	Surface/Interface Structure and Chemistry of Lithiumâ€"Sulfur Batteries: From Density Functional Theory Calculationsâ€™ Perspective. Advanced Energy and Sustainability Research, 2021, 2, 2100007.	5.8	27
88	Revisiting the Growth Mechanism of Hierarchical Semiconductor Nanostructures: The Role of Secondary Nucleation in Branch Formation. Journal of Physical Chemistry Letters, 2019, 10, 6827-6834.	4.6	20
89	High-Performance Lithium-Rich Layered Oxide Material: Effects of Preparation Methods on Microstructure and Electrochemical Properties. Materials, 2020, 13, 334.	2.9	20
90	Systematic Evaluation of Carbon Hosts for High-Energy Rechargeable Lithium-Metal Batteries. ACS Energy Letters, 0, , 1550-1559.	17.4	20

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91	Designing Advanced Liquid Electrolytes for Alkali Metal Batteries: Principles, Progress, and Perspectives. Energy and Environmental Materials, 2023, 6, .	12.8	19
92	Minimizing Polysulfide Shuttle Effect in Lithium-Ion Sulfur Batteries by Anode Surface Passivation. ACS Applied Materials & Interfaces, 2018, 10, 21965-21972.	8.0	18
93	Controlling Metalâ€"Organic Framework/ZnO Heterostructure Kinetics through Selective Ligand Binding to ZnO Surface Steps. Chemistry of Materials, 2020, 32, 6666-6675.	6.7	16
94	Energy Material Advances: From Fundamental Discoveries to Practical Applications. Energy Material Advances, 2020, 2020, .	11.0	16
95	Wet-chemical synthesis of Li7P3S11 with tailored particle size for solid state electrolytes. Chemical Engineering Journal, 2022, 429, 132334.	12.7	12
96	Early Failure of Lithiumâ€"Sulfur Batteries at Practical Conditions: Crosstalk between Sulfur Cathode and Lithium Anode. Advanced Science, 2022, 9, e2201640.	11.2	12
97	Role of the Solventâ€"Surfactant Duality of Ionic Liquids in Directing Two-Dimensional Particle Assembly. Journal of Physical Chemistry C, 2020, 124, 24215-24222.	3.1	8
98	Lithiumâ€Metal Batteries: Highâ€Voltage Lithiumâ€Metal Batteries Enabled by Localized Highâ€Concentration Electrolytes (Adv. Mater. 21/2018). Advanced Materials, 2018, 30, 1870144.	21.0	4
99	Double Epitaxy as a Paradigm for Templated Growth of Highly Ordered Three-Dimensional Mesophase Crystals. ACS Nano, 2016, 10, 8670-8675.	14.6	2
100	Enabling High-Voltage Lithium Metal Batteries Under Practical Conditions. SSRN Electronic Journal, 0, , .	0.4	0