Yi-Chun Lu

List of Publications by Year
in descending order

112 papers	11,566 citations	47409 49 h-index	37326 100 g-index
113 all docs	113 docs citations	113 times ranked	11336 citing authors

#	Article	IF	Citations
1	Enabling high-energy-density aqueous batteries with hydrogen bond-anchored electrolytes. Matter, 2022, 5, 162-179.	5.0	98
2	A Low-Crossover and Fast-Kinetics Thiolate Negolyte for Aqueous Redox Flow Batteries. Energy Material Advances, 2022, 2022, .	4.7	12
3	Design strategies for low temperature aqueous electrolytes. , 2022, 1, e9120003.		94
4	Charging sustainable batteries. Nature Sustainability, 2022, 5, 176-178.	11.5	70
5	Electrolyte and Interphase Design for Magnesium Anode: Major Challenges and Perspectives. Small, 2022, 18, e2200009.	5.2	33
6	Tuning Intermolecular Interactions of Molecular Crowding Electrolyte for High-Performance Aqueous Batteries. ACS Energy Letters, 2022, 7, 123-130.	8.8	57
7	Heteropoly acid negolytes for high-power-density aqueous redox flow batteries at low temperatures. Nature Energy, 2022, 7, 417-426.	19.8	66
8	Advanced aqueous redox flow batteries design: Ready for long-duration energy storage applications?. MRS Energy & Sustainability, 2022, 9, 171-182.	1.3	6
9	Solidâ€“Electrolyte Interphase of Molecular Crowding Electrolytes. Chemistry of Materials, 2022, 34, 5176-5183.	3.2	14
10	The Quest for High-Energy and Safe Batteries. Current Opinion in Electrochemistry, 2022, , 101075.	2.5	0
11	Flexible aqueous lithium-ion batteries with ultrahigh areal capacity and long cycle life. Materials Today Energy, 2021, 19, 100570.	2.5	7
12	Diphenyl ditelluride as a low-potential and fast-kinetics anolyte for nonaqueous redox flow battery applications. Energy Storage Materials, 2021, 35, 761-771.	9.5	7
13	An effective sulfur conversion catalyst based on MnCo₂O_{4.5} modified graphitized carbon nitride nanosheets for high-performance Liâ€“S batteries. Journal of Materials Chemistry A, 2021, 9, 21184-21196.	5.2	13
14	Chemically Switchable n-Type and p-Type Conduction in Bismuth Selenide Nanoribbons for Thermoelectric Energy Harvesting. ACS Nano, 2021, 15, 2791-2799.	7.3	14
15	Assessment methods and performance metrics for redox flow batteries. Nature Energy, 2021, 6, 582-588.	19.8	209
16	A Dendriteâ€Free Tin Anode for Highâ€Energy Aqueous Redox Flow Batteries. Advanced Materials, 2021, 33, e2008095.	11.1	31
17	Mechanistic Understanding of Oxygen Electrodes in Rechargeable Multivalent Metalâ€Oxygen Batteries. Batteries and Supercaps, 2021, 4, 1588-1598.	2.4	6
18	In Situ probing of solid/liquid interfaces of potassiumâ€“oxygen batteries via ambient pressure X-ray photoelectron spectroscopy: New reaction pathways and root cause of battery degradation. Energy Storage Materials, 2021, 36, 341-346.	9.5	17

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19	Towards practical organic batteries. Nature Materials, 2021, 20, 581-583.	13.3	7
20	Polysulfide-based redox flow batteries with long life and low levelized cost enabled by charge-reinforced ion-selective membranes. Nature Energy, 2021, 6, 517-528.	19.8	98
21	Electrochemical reduction of CO2 in ionic liquid: Mechanistic study of Liâ€“CO2 batteries via in situ ambient pressure X-ray photoelectron spectroscopy. Nano Energy, 2021, 83, 105830.	8.2	27
22	One-Step Surface-Plasma-Induced Exfoliation of the Graphite/WS₂ Bilayer into Homogeneous Two-Dimensional Graphene/WS₂ Nanosheet Composites as Catalysts for the Hydrogen Evolution Reaction. ACS Applied Energy Materials, 2021, 4, 5143-5154.	2.5	30
23	Liquid electrolyte design for metalâ€sulfur batteries: Mechanistic understanding and perspective. EcoMat, 2021, 3, e12115.	6.8	29
24	The Potassiumâ€“Air Battery: Far from a Practical Reality?. Accounts of Materials Research, 2021, 2, 515-525.	5.9	17
25	Achieving Efficient Magnesiumâ€“Sulfur Battery Chemistry via Polysulfide Mediation. Advanced Energy Materials, 2021, 11, 2101552.	10.2	36
26	Viologen radical stabilization by molecular spectators for aqueous organic redox flow batteries. Nano Energy, 2021, 84, 105897.	8.2	55
27	Non-passivating Anion Adsorption Enables Reversible Magnesium Redox in Simple Non-nucleophilic Electrolytes. ACS Energy Letters, 2021, 6, 3607-3613.	8.8	38
28	Towards high-areal-capacity aqueous zincâ€“manganese batteries: promoting MnO₂ dissolution by redox mediators. Energy and Environmental Science, 2021, 14, 4418-4426.	15.6	104
29	High-areal-capacity conversion type iron-based hybrid redox flow batteries. Energy and Environmental Science, 2021, 14, 6329-6337.	15.6	22
30	Material Design of Aqueous Redox Flow Batteries: Fundamental Challenges and Mitigation Strategies. Advanced Materials, 2020, 32, e2002132.	11.1	129
31	Suppressing singlet oxygen generation in lithiumâ€“oxygen batteries with redox mediators. Energy and Environmental Science, 2020, 13, 2870-2877.	15.6	60
32	Achieving a Stable Nonaqueous Air Cathode under True Ambient Air. ACS Energy Letters, 2020, 5, 3804-3812.	8.8	5
33	Dendrite-Free lithium electrode enabled by graphene aerogels with gradient porosity. Energy Storage Materials, 2020, 33, 329-335.	9.5	28
34	A retrospective on lithium-ion batteries. Nature Communications, 2020, 11, 2499.	5.8	563
35	Nonaqueous Lithiumâ€“Oxygen batteries: Reaction mechanism and critical open questions. Energy Storage Materials, 2020, 28, 235-246.	9.5	103
36	Critical Factors Controlling Superoxide Reactions in Lithiumâ€“Oxygen Batteries. ACS Energy Letters, 2020, 5, 1355-1363.	8.8	37

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37	Tuning thermal conductivity of bismuth selenide nanoribbons by reversible copper intercalation. International Journal of Heat and Mass Transfer, 2020, 159, 120077.	2.5	4
38	A Self-Mediating Redox Flow Battery: High-Capacity Polychalcogenide-Based Redox Flow Battery Mediated by Inherently Present Redox Shuttles. ACS Energy Letters, 2020, 5, 1732-1740.	8.8	22
39	Molecular crowding electrolytes for high-voltage aqueous batteries. Nature Materials, 2020, 19, 1006-1011.	13.3	431
40	Fast and Reversible Four-Electron Storage Enabled By Ethyl Viologen for Rechargeable Magnesium Batteries. ECS Meeting Abstracts, 2020, MA2020-02, 462-462.	0.0	0
41	(Invited) Electrode-Electrolyte Design for Rechargeable Air-Batteries. ECS Meeting Abstracts, 2020, MA2020-02, 471-471.	0.0	0
42	Molecular Crowding Electrolytes for High-Voltage Aqueous Batteries. ECS Meeting Abstracts, 2020, MA2020-02, 667-667.	0.0	0
43	Ionâ€Selective Membraneâ€Free Dual Sulfurâ€Iodine Catholyte for Lowâ€Cost and Highâ€Power Flow Battery Applications. Batteries and Supercaps, 2019, 2, 941-947.	2.4	11
44	Flexible Solid Flow Electrodes for High-Energy Scalable Energy Storage. Joule, 2019, 3, 1677-1688.	11.7	19
45	Fast and Reversible Fourâ€Electron Storage Enabled by Ethyl Viologen for Rechargeable Magnesium Batteries. Advanced Energy Materials, 2019, 9, 1903002.	10.2	26
46	A high-energy potassiumâ€“sulfur battery enabled by facile and effective imidazole-solvated copper catalysts. Journal of Materials Chemistry A, 2019, 7, 20584-20589.	5.2	30
47	Critical Role of Anion Donicity in Li₂S Deposition and Sulfur Utilization in Liâ€“S Batteries. ACS Applied Materials & Interfaces, 2019, 11, 25940-25948.	4.0	50
48	Asymmetric allyl-activation of organosulfides for high-energy reversible redox flow batteries. Energy and Environmental Science, 2019, 12, 2244-2252.	15.6	40
49	Isotopic Labeling Reveals Active Reaction Interfaces for Electrochemical Oxidation of Lithium Peroxide. Angewandte Chemie - International Edition, 2019, 58, 6962-6966.	7.2	37
50	Isotopic Labeling Reveals Active Reaction Interfaces for Electrochemical Oxidation of Lithium Peroxide. Angewandte Chemie, 2019, 131, 7036-7040.	1.6	33
51	Reverse Electrodialysis Chemical Cell for Energy Harvesting from Controlled Acidâ€“Base Neutralization. Environmental Science & Technology, 2019, 53, 4640-4647.	4.6	17
52	A high-rate and long-life organicâ€“oxygen battery. Nature Materials, 2019, 18, 390-396.	13.3	110
53	Designing Effective Solventâ€“Catalyst Interface for Catalytic Sulfur Conversion in Lithiumâ€“Sulfur Batteries. Chemistry of Materials, 2019, 31, 10186-10196.	3.2	45
54	Solventâ€Mediated Li₂S Electrodeposition: A Critical Manipulator in Lithiumâ€“Sulfur Batteries. Advanced Energy Materials, 2019, 9, 1802207.	10.2	237

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55	Thermally reduced graphene paper with fast Li ion diffusion for stable Li metal anode. Electrochimica Acta, 2019, 294, 413-422.	2.6	28
56	(Invited) Electrolyte Design and Solution Mediation Processes in Metal-Oxygen and Metal-Sulfur Batteries. ECS Meeting Abstracts, 2019, , .	0.0	0
57	In Situ Ambient Pressure X-Ray Photoelectron Spectroscopy Studies of Potassium-Oxygen Redox Reactions. ECS Meeting Abstracts, 2019, , .	0.0	0
58	A High-Energy-Density and Long-Life Chalcogenide-Iodide Redox Flow Battery. ECS Meeting Abstracts, 2019, , .	0.0	0
59	(Invited) High-Energy-Density Redox-Flow Batteries: Fundamental Redox Processes and Materials Design Strategies. ECS Meeting Abstracts, 2019, , .	0.0	0
60	(Invited) Electrocatalysts for Lithium-Oxygen and Li-Sulfur Batteries. ECS Meeting Abstracts, 2019, , .	0.0	0
61	Potential-Dependent Oxidation Mechanism of Li2O2 and Its Application in Li-O2 Batteries. ECS Meeting Abstracts, 2019, , .	0.0	0
62	Superoxide Stabilization and a Universal KO₂ Growth Mechanism in Potassiumâ€“Oxygen Batteries. Angewandte Chemie - International Edition, 2018, 57, 5042-5046.	7.2	62
63	Superoxide Stabilization and a Universal KO₂ Growth Mechanism in Potassiumâ€“Oxygen Batteries. Angewandte Chemie, 2018, 130, 5136-5140.	1.6	28
64	Recent progress in organic redox flow batteries: Active materials, electrolytes and membranes. Journal of Energy Chemistry, 2018, 27, 1304-1325.	7.1	189
65	A Highly Active Oxygen Evolution Catalyst for Lithium-Oxygen Batteries Enabled by High-Surface-Energy Facets. Joule, 2018, 2, 1511-1521.	11.7	59
66	Dynamic oxygen shield eliminates cathode degradation in lithiumâ€“oxygen batteries. Energy and Environmental Science, 2018, 11, 3500-3510.	15.6	38
67	Unraveling the Correlation between Solvent Properties and Sulfur Redox Behavior in Lithium-Sulfur Batteries. Journal of the Electrochemical Society, 2018, 165, A4027-A4033.	1.3	79
68	Organic Eutectic Electrolytes for Future Flow Batteries. CheM, 2018, 4, 2732-2734.	5.8	16
69	A Solvent-Controlled Oxidation Mechanism of Li2O2 in Lithium-Oxygen Batteries. Joule, 2018, 2, 2364-2380.	11.7	139
70	Redox Flow Batteries: Want More Electrons? Go Organic!. CheM, 2018, 4, 2020-2021.	5.8	19
71	Cation-Directed Selective Polysulfide Stabilization in Alkali Metalâ€“Sulfur Batteries. Journal of the American Chemical Society, 2018, 140, 10740-10748.	6.6	68
72	Lithiumâ€“Organic Nanocomposite Suspension for High-Energy-Density Redox Flow Batteries. ACS Energy Letters, 2018, 3, 1991-1997.	8.8	42

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73	Non-covalent interactions in electrochemical reactions and implications in clean energy applications. Physical Chemistry Chemical Physics, 2018, 20, 15680-15686.	1.3	53
74	Unlocking the capacity of iodide for high-energy-density zinc/polyiodide and lithium/polyiodide redox flow batteries. Energy and Environmental Science, 2017, 10, 735-741.	15.6	225
75	High-performance LiTi₂(PO₄)₃ anodes for high-areal-capacity flexible aqueous lithium-ion batteries. Journal of Materials Chemistry A, 2017, 5, 11764-11771.	5.2	49
76	Recent Progress in Applying In Situ/Operando Characterization Techniques to Probe the Solid/Liquid/Gas Interfaces of Liâ€"O₂ Batteries. Small Methods, 2017, 1, 1700150.	4.6	56
77	A Highly Concentrated Catholyte Enabled by a Low-Melting-Point Ferrocene Derivative. ACS Energy Letters, 2017, 2, 869-875.	8.8	79
78	Siliconâ€"Carbon Nanocomposite Semi-Solid Negolyte and Its Application in Redox Flow Batteries. Chemistry of Materials, 2017, 29, 7533-7542.	3.2	37
79	A stable lithiumâ€"selenium interface via solid/liquid hybrid electrolytes: Blocking polyselenides and suppressing lithium dendrite. Nano Energy, 2017, 39, 554-561.	8.2	52
80	High Energy Density Aqueous Liâ€ion Flow Capacitor. Advanced Energy Materials, 2017, 7, 1601248.	10.2	24
81	A Highâ€Energyâ€Density Multiple Redox Semiâ€Solidâ€Liquid Flow Battery. Advanced Energy Materials, 2016, 6, 1502183.	10.2	98
82	Solvent-Dictated Lithium Sulfur Redox Reactions: An Operando UVâ€"vis Spectroscopic Study. Journal of Physical Chemistry Letters, 2016, 7, 1518-1525.	2.1	298
83	Critical Role of Redox Mediator in Suppressing Charging Instabilities of Lithiumâ€"Oxygen Batteries. Journal of the American Chemical Society, 2016, 138, 7574-7583.	6.6	272
84	A high-energy and low-cost polysulfide/iodide redox flow battery. Nano Energy, 2016, 30, 283-292.	8.2	140
85	Probing the Electrode-Electrolyte Interface in Cycled LiNi_{0.5}Mn_{1.5}O₄by XPS Using Mg and Synchrotron X-rays. Journal of the Electrochemical Society, 2016, 163, A2911-A2918.	1.3	36
86	Mechanistic Insights into Catalyst-Assisted Nonaqueous Oxygen Evolution Reaction in Lithiumâ€"Oxygen Batteries. Journal of Physical Chemistry C, 2016, 120, 6459-6466.	1.5	69
87	XPS Investigation of the Electrolyte Induced Stabilization of LiCoO₂and â€œAlPO₄â€•Coated LiCoO₂Composite Electrodes. Journal of the Electrochemical Society, 2016, 163, A300-A308.	1.3	66
88	Electrophoretic lithium iron phosphate/reduced graphene oxide composite for lithium ion battery cathode application. Journal of Power Sources, 2015, 284, 236-244.	4.0	51
89	Sulphur-impregnated flow cathode to enable high-energy-density lithium flow batteries. Nature Communications, 2015, 6, 5877.	5.8	130
90	Thermally-responsive, nonflammable phosphonium ionic liquid electrolytes for lithium metal batteries: operating at 100 degrees celsius. Chemical Science, 2015, 6, 6601-6606.	3.7	39

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91	The Kinetics and Product Characteristics of Oxygen Reduction and Evolution in LiO2 Batteries. , 2014, , 121-158.		3
92	The influence of transition metal oxides on the kinetics of Li₂O₂oxidation in Liâ€“O₂batteries: high activity of chromium oxides. Physical Chemistry Chemical Physics, 2014, 16, 2297-2304.	1.3	52
93	Probing the Lithiumâ€“Sulfur Redox Reactions: A Rotating-Ring Disk Electrode Study. Journal of Physical Chemistry C, 2014, 118, 5733-5741.	1.5	215
94	Biologically enhanced cathode design for improved capacity and cycle life for lithium-oxygen batteries. Nature Communications, 2013, 4, 2756.	5.8	157
95	Influence of Hydrocarbon and CO₂ on the Reversibility of Liâ€“O₂ Chemistry Using <i>In Situ</i> Ambient Pressure X-ray Photoelectron Spectroscopy. Journal of Physical Chemistry C, 2013, 117, 25948-25954.	1.5	59
96	Thermal Stability of Li₂O₂and Li₂O for Li-Air Batteries: In Situ XRD and XPS Studies. Journal of the Electrochemical Society, 2013, 160, A824-A831.	1.3	278
97	Probing the Reaction Kinetics of the Charge Reactions of Nonaqueous Liâ€“O₂ Batteries. Journal of Physical Chemistry Letters, 2013, 4, 93-99.	2.1	309
98	Lithiumâ€“oxygen batteries: bridging mechanistic understanding and battery performance. Energy and Environmental Science, 2013, 6, 750.	15.6	825
99	XPS Studies of Surface Chemistry Changes of LiNi_{0.5}Mn_{0.5}O₂Electrodes during High-Voltage Cycling. Journal of the Electrochemical Society, 2013, 160, A669-A677.	1.3	57
100	Self-assembly of hierarchical MoSx/CNT nanocomposites (2<x<3): towards high performance anode materials for lithium ion batteries. Scientific Reports, 2013, 3, 2169.	1.6	290
101	In Situ Ambient Pressure X-ray Photoelectron Spectroscopy Studies of Lithium-Oxygen Redox Reactions. Scientific Reports, 2012, 2, 715.	1.6	180
102	Evidence of catalyzed oxidation of Li2O2 for rechargeable Liâ€“air battery applications. Physical Chemistry Chemical Physics, 2012, 14, 10540.	1.3	154
103	Method Development to Evaluate the Oxygen Reduction Activity of High-Surface-Area Catalysts for Li-Air Batteries. Electrochemical and Solid-State Letters, 2011, 14, A70.	2.2	66
104	The Influence of Heat-Treatment Temperature on the Cation Distribution of LiNi[sub 0.5]Mn[sub 0.5]O[sub 2] and Its Rate Capability in Lithium Rechargeable Batteries. Journal of the Electrochemical Society, 2011, 158, A192.	1.3	16
105	The discharge rate capability of rechargeable Liâ€“O2 batteries. Energy and Environmental Science, 2011, 4, 2999.	15.6	394
106	Catalytic Activity Trends of Oxygen Reduction Reaction for Nonaqueous Li-Air Batteries. Journal of the American Chemical Society, 2011, 133, 19048-19051.	6.6	525
107	Platinumâˆ’Gold Nanoparticles: A Highly Active Bifunctional Electrocatalyst for Rechargeable Lithiumâˆ’Air Batteries. Journal of the American Chemical Society, 2010, 132, 12170-12171.	6.6	1,171
108	The Influence of Catalysts on Discharge and Charge Voltages of Rechargeable Liâ€“Oxygen Batteries. Electrochemical and Solid-State Letters, 2010, 13, A69.	2.2	427

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109	The Influence of Surface Chemistry on the Rate Capability of LiNi[sub 0.5]Mn[sub 0.5]O[sub 2] for Lithium Rechargeable Batteries. Electrochemical and Solid-State Letters, 2010, 13, A158.	2.2	15
110	Electrocatalytic Activity Studies of Select Metal Surfaces and Implications in Li-Air Batteries. Journal of the Electrochemical Society, 2010, 157, A1016.	1.3	260
111	Probing the Origin of Enhanced Stability of â€œAlPO₄â€•Nanoparticle Coated LiCoO₂ during Cycling to High Voltages: Combined XRD and XPS Studies. Chemistry of Materials, 2009, 21, 4408-4424.	3.2	279
112	Bacteria detection utilizing electrical conductivity. Biosensors and Bioelectronics, 2008, 23, 1856-1861.	5.3	38