Yi-Chun Lu

List of Publications by Year
in descending order

112 papers	11,566 citations	41344 49 h-index	32842 100 g-index
113 all docs	113 docs citations	113 times ranked	9730 citing authors

#	Article	IF	Citations
1	Platinumâˆ’Gold Nanoparticles: A Highly Active Bifunctional Electrocatalyst for Rechargeable Lithiumâˆ’Air Batteries. Journal of the American Chemical Society, 2010, 132, 12170-12171.	13.7	1,171
2	Lithiumâ€“oxygen batteries: bridging mechanistic understanding and battery performance. Energy and Environmental Science, 2013, 6, 750.	30.8	825
3	A retrospective on lithium-ion batteries. Nature Communications, 2020, 11, 2499.	12.8	563
4	Catalytic Activity Trends of Oxygen Reduction Reaction for Nonaqueous Li-Air Batteries. Journal of the American Chemical Society, 2011, 133, 19048-19051.	13.7	525
5	Molecular crowding electrolytes for high-voltage aqueous batteries. Nature Materials, 2020, 19, 1006-1011.	27.5	431
6	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
7	The discharge rate capability of rechargeable Liâ€“O2 batteries. Energy and Environmental Science, 2011, 4, 2999.	30.8	394
8	Probing the Reaction Kinetics of the Charge Reactions of Nonaqueous Liâ€“O₂ Batteries. Journal of Physical Chemistry Letters, 2013, 4, 93-99.	4.6	309
9	Solvent-Dictated Lithium Sulfur Redox Reactions: An Operando UVâ€“vis Spectroscopic Study. Journal of Physical Chemistry Letters, 2016, 7, 1518-1525.	4.6	298
10	Self-assembly of hierarchical MoSx/CNT nanocomposites (2<x<3): towards high performance anode materials for lithium ion batteries. Scientific Reports, 2013, 3, 2169.	3.3	290
11	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.	6.7	279
12	Thermal Stability of Li₂O₂and Li₂O for Li-Air Batteries: In Situ XRD and XPS Studies. Journal of the Electrochemical Society, 2013, 160, A824-A831.	2.9	278
13	Critical Role of Redox Mediator in Suppressing Charging Instabilities of Lithiumâ€“Oxygen Batteries. Journal of the American Chemical Society, 2016, 138, 7574-7583.	13.7	272
14	Electrocatalytic Activity Studies of Select Metal Surfaces and Implications in Li-Air Batteries. Journal of the Electrochemical Society, 2010, 157, A1016.	2.9	260
15	Solventâ€Mediated Li₂S Electrodeposition: A Critical Manipulator in Lithiumâ€“Sulfur Batteries. Advanced Energy Materials, 2019, 9, 1802207.	19.5	237
16	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.	30.8	225
17	Probing the Lithiumâ€“Sulfur Redox Reactions: A Rotating-Ring Disk Electrode Study. Journal of Physical Chemistry C, 2014, 118, 5733-5741.	3.1	215
18	Assessment methods and performance metrics for redox flow batteries. Nature Energy, 2021, 6, 582-588.	39.5	209

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19	Recent progress in organic redox flow batteries: Active materials, electrolytes and membranes. Journal of Energy Chemistry, 2018, 27, 1304-1325.	12.9	189
20	In Situ Ambient Pressure X-ray Photoelectron Spectroscopy Studies of Lithium-Oxygen Redox Reactions. Scientific Reports, 2012, 2, 715.	3.3	180
21	Biologically enhanced cathode design for improved capacity and cycle life for lithium-oxygen batteries. Nature Communications, 2013, 4, 2756.	12.8	157
22	Evidence of catalyzed oxidation of Li2O2 for rechargeable Liâ€“air battery applications. Physical Chemistry Chemical Physics, 2012, 14, 10540.	2.8	154
23	A high-energy and low-cost polysulfide/iodide redox flow battery. Nano Energy, 2016, 30, 283-292.	16.0	140
24	A Solvent-Controlled Oxidation Mechanism of Li2O2 in Lithium-Oxygen Batteries. Joule, 2018, 2, 2364-2380.	24.0	139
25	Sulphur-impregnated flow cathode to enable high-energy-density lithium flow batteries. Nature Communications, 2015, 6, 5877.	12.8	130
26	Material Design of Aqueous Redox Flow Batteries: Fundamental Challenges and Mitigation Strategies. Advanced Materials, 2020, 32, e2002132.	21.0	129
27	A high-rate and long-life organicâ€“oxygen battery. Nature Materials, 2019, 18, 390-396.	27.5	110
28	Towards high-areal-capacity aqueous zincâ€“manganese batteries: promoting MnO₂ dissolution by redox mediators. Energy and Environmental Science, 2021, 14, 4418-4426.	30.8	104
29	Nonaqueous Lithiumâ€“Oxygen batteries: Reaction mechanism and critical open questions. Energy Storage Materials, 2020, 28, 235-246.	18.0	103
30	A Highâ€Energyâ€Density Multiple Redox Semiâ€Solidâ€Liquid Flow Battery. Advanced Energy Materials, 2016, 6, 1502183.	19.5	98
31	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.	39.5	98
32	Enabling high-energy-density aqueous batteries with hydrogen bond-anchored electrolytes. Matter, 2022, 5, 162-179.	10.0	98
33	Design strategies for low temperature aqueous electrolytes. , 2022, 1, e9120003.		94
34	A Highly Concentrated Catholyte Enabled by a Low-Melting-Point Ferrocene Derivative. ACS Energy Letters, 2017, 2, 869-875.	17.4	79
35	Unraveling the Correlation between Solvent Properties and Sulfur Redox Behavior in Lithium-Sulfur Batteries. Journal of the Electrochemical Society, 2018, 165, A4027-A4033.	2.9	79
36	Charging sustainable batteries. Nature Sustainability, 2022, 5, 176-178.	23.7	70

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37	Mechanistic Insights into Catalyst-Assisted Nonaqueous Oxygen Evolution Reaction in Lithiumâ€“Oxygen Batteries. Journal of Physical Chemistry C, 2016, 120, 6459-6466.	3.1	69
38	Cation-Directed Selective Polysulfide Stabilization in Alkali Metalâ€“Sulfur Batteries. Journal of the American Chemical Society, 2018, 140, 10740-10748.	13.7	68
39	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
40	XPS Investigation of the Electrolyte Induced Stabilization of LiCoO₂and â€œAlPO₄â€•Coated LiCoO₂Composite Electrodes. Journal of the Electrochemical Society, 2016, 163, A300-A308.	2.9	66
41	Heteropoly acid negolytes for high-power-density aqueous redox flow batteries at low temperatures. Nature Energy, 2022, 7, 417-426.	39.5	66
42	Superoxide Stabilization and a Universal KO₂ Growth Mechanism in Potassiumâ€“Oxygen Batteries. Angewandte Chemie - International Edition, 2018, 57, 5042-5046.	13.8	62
43	Suppressing singlet oxygen generation in lithiumâ€“oxygen batteries with redox mediators. Energy and Environmental Science, 2020, 13, 2870-2877.	30.8	60
44	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.	3.1	59
45	A Highly Active Oxygen Evolution Catalyst for Lithium-Oxygen Batteries Enabled by High-Surface-Energy Facets. Joule, 2018, 2, 1511-1521.	24.0	59
46	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.	2.9	57
47	Tuning Intermolecular Interactions of Molecular Crowding Electrolyte for High-Performance Aqueous Batteries. ACS Energy Letters, 2022, 7, 123-130.	17.4	57
48	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.	8.6	56
49	Viologen radical stabilization by molecular spectators for aqueous organic redox flow batteries. Nano Energy, 2021, 84, 105897.	16.0	55
50	Non-covalent interactions in electrochemical reactions and implications in clean energy applications. Physical Chemistry Chemical Physics, 2018, 20, 15680-15686.	2.8	53
51	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.	2.8	52
52	A stable lithiumâ€“selenium interface via solid/liquid hybrid electrolytes: Blocking polyselenides and suppressing lithium dendrite. Nano Energy, 2017, 39, 554-561.	16.0	52
53	Electrophoretic lithium iron phosphate/reduced graphene oxide composite for lithium ion battery cathode application. Journal of Power Sources, 2015, 284, 236-244.	7.8	51
54	Critical Role of Anion Donicity in Li₂S Deposition and Sulfur Utilization in Liâ€“S Batteries. ACS Applied Materials & Interfaces, 2019, 11, 25940-25948.	8.0	50

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55	High-performance LiTi₂(PO₄)₃ anodes for high-areal-capacity flexible aqueous lithium-ion batteries. Journal of Materials Chemistry A, 2017, 5, 11764-11771.	10.3	49
56	Designing Effective Solventâ€“Catalyst Interface for Catalytic Sulfur Conversion in Lithiumâ€“Sulfur Batteries. Chemistry of Materials, 2019, 31, 10186-10196.	6.7	45
57	Lithiumâ€“Organic Nanocomposite Suspension for High-Energy-Density Redox Flow Batteries. ACS Energy Letters, 2018, 3, 1991-1997.	17.4	42
58	Asymmetric allyl-activation of organosulfides for high-energy reversible redox flow batteries. Energy and Environmental Science, 2019, 12, 2244-2252.	30.8	40
59	Thermally-responsive, nonflammable phosphonium ionic liquid electrolytes for lithium metal batteries: operating at 100 degrees celsius. Chemical Science, 2015, 6, 6601-6606.	7.4	39
60	Bacteria detection utilizing electrical conductivity. Biosensors and Bioelectronics, 2008, 23, 1856-1861.	10.1	38
61	Dynamic oxygen shield eliminates cathode degradation in lithiumâ€“oxygen batteries. Energy and Environmental Science, 2018, 11, 3500-3510.	30.8	38
62	Non-passivating Anion Adsorption Enables Reversible Magnesium Redox in Simple Non-nucleophilic Electrolytes. ACS Energy Letters, 2021, 6, 3607-3613.	17.4	38
63	Siliconâ€“Carbon Nanocomposite Semi-Solid Negolyte and Its Application in Redox Flow Batteries. Chemistry of Materials, 2017, 29, 7533-7542.	6.7	37
64	Isotopic Labeling Reveals Active Reaction Interfaces for Electrochemical Oxidation of Lithium Peroxide. Angewandte Chemie - International Edition, 2019, 58, 6962-6966.	13.8	37
65	Critical Factors Controlling Superoxide Reactions in Lithiumâ€“Oxygen Batteries. ACS Energy Letters, 2020, 5, 1355-1363.	17.4	37
66	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.	2.9	36
67	Achieving Efficient Magnesiumâ€“Sulfur Battery Chemistry via Polysulfide Mediation. Advanced Energy Materials, 2021, 11, 2101552.	19.5	36
68	Isotopic Labeling Reveals Active Reaction Interfaces for Electrochemical Oxidation of Lithium Peroxide. Angewandte Chemie, 2019, 131, 7036-7040.	2.0	33
69	Electrolyte and Interphase Design for Magnesium Anode: Major Challenges and Perspectives. Small, 2022, 18, e2200009.	10.0	33
70	A Dendriteâ€Free Tin Anode for Highâ€Energy Aqueous Redox Flow Batteries. Advanced Materials, 2021, 33, e2008095.	21.0	31
71	A high-energy potassiumâ€“sulfur battery enabled by facile and effective imidazole-solvated copper catalysts. Journal of Materials Chemistry A, 2019, 7, 20584-20589.	10.3	30
72	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.	5.1	30

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73	Liquid electrolyte design for metalâ€sulfur batteries: Mechanistic understanding and perspective. EcoMat, 2021, 3, e12115.	11.9	29
74	Superoxide Stabilization and a Universal KO₂ Growth Mechanism in Potassiumâ€“Oxygen Batteries. Angewandte Chemie, 2018, 130, 5136-5140.	2.0	28
75	Thermally reduced graphene paper with fast Li ion diffusion for stable Li metal anode. Electrochimica Acta, 2019, 294, 413-422.	5.2	28
76	Dendrite-Free lithium electrode enabled by graphene aerogels with gradient porosity. Energy Storage Materials, 2020, 33, 329-335.	18.0	28
77	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.	16.0	27
78	Fast and Reversible Fourâ€Electron Storage Enabled by Ethyl Viologen for Rechargeable Magnesium Batteries. Advanced Energy Materials, 2019, 9, 1903002.	19.5	26
79	High Energy Density Aqueous Liâ€Ion Flow Capacitor. Advanced Energy Materials, 2017, 7, 1601248.	19.5	24
80	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.	17.4	22
81	High-areal-capacity conversion type iron-based hybrid redox flow batteries. Energy and Environmental Science, 2021, 14, 6329-6337.	30.8	22
82	Redox Flow Batteries: Want More Electrons? Go Organic!. CheM, 2018, 4, 2020-2021.	11.7	19
83	Flexible Solid Flow Electrodes for High-Energy Scalable Energy Storage. Joule, 2019, 3, 1677-1688.	24.0	19
84	Reverse Electrodialysis Chemical Cell for Energy Harvesting from Controlled Acidâ€“Base Neutralization. Environmental Science & Technology, 2019, 53, 4640-4647.	10.0	17
85	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.	18.0	17
86	The Potassiumâ€“Air Battery: Far from a Practical Reality?. Accounts of Materials Research, 2021, 2, 515-525.	11.7	17
87	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.	2.9	16
88	Organic Eutectic Electrolytes for Future Flow Batteries. CheM, 2018, 4, 2732-2734.	11.7	16
89	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
90	Chemically Switchable n-Type and p-Type Conduction in Bismuth Selenide Nanoribbons for Thermoelectric Energy Harvesting. ACS Nano, 2021, 15, 2791-2799.	14.6	14

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91	Solidâ€“Electrolyte Interphase of Molecular Crowding Electrolytes. Chemistry of Materials, 2022, 34, 5176-5183.	6.7	14
92	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.	10.3	13
93	A Low-Crossover and Fast-Kinetics Thiolate Negolyte for Aqueous Redox Flow Batteries. Energy Material Advances, 2022, 2022, .	11.0	12
94	Ionâ€Selective Membraneâ€Free Dual Sulfurâ€Iodine Catholyte for Lowâ€Cost and Highâ€Power Flow Battery Applications. Batteries and Supercaps, 2019, 2, 941-947.	4.7	11
95	Flexible aqueous lithium-ion batteries with ultrahigh areal capacity and long cycle life. Materials Today Energy, 2021, 19, 100570.	4.7	7
96	Diphenyl ditelluride as a low-potential and fast-kinetics anolyte for nonaqueous redox flow battery applications. Energy Storage Materials, 2021, 35, 761-771.	18.0	7
97	Towards practical organic batteries. Nature Materials, 2021, 20, 581-583.	27.5	7
98	Mechanistic Understanding of Oxygen Electrodes in Rechargeable Multivalent Metalâ€Oxygen Batteries. Batteries and Supercaps, 2021, 4, 1588-1598.	4.7	6
99	Advanced aqueous redox flow batteries design: Ready for long-duration energy storage applications?. MRS Energy & Sustainability, 2022, 9, 171-182.	3.0	6
100	Achieving a Stable Nonaqueous Air Cathode under True Ambient Air. ACS Energy Letters, 2020, 5, 3804-3812.	17.4	5
101	Tuning thermal conductivity of bismuth selenide nanoribbons by reversible copper intercalation. International Journal of Heat and Mass Transfer, 2020, 159, 120077.	4.8	4
102	The Kinetics and Product Characteristics of Oxygen Reduction and Evolution in LiO2 Batteries. , 2014, , 121-158.		3
103	(Invited) Electrolyte Design and Solution Mediation Processes in Metal-Oxygen and Metal-Sulfur Batteries. ECS Meeting Abstracts, 2019, , .	0.0	0
104	In Situ Ambient Pressure X-Ray Photoelectron Spectroscopy Studies of Potassium-Oxygen Redox Reactions. ECS Meeting Abstracts, 2019, , .	0.0	0
105	A High-Energy-Density and Long-Life Chalcogenide-Iodide Redox Flow Battery. ECS Meeting Abstracts, 2019, , .	0.0	0
106	(Invited) High-Energy-Density Redox-Flow Batteries: Fundamental Redox Processes and Materials Design Strategies. ECS Meeting Abstracts, 2019, , .	0.0	0
107	(Invited) Electrocatalysts for Lithium-Oxygen and Li-Sulfur Batteries. ECS Meeting Abstracts, 2019, , .	0.0	0
108	Potential-Dependent Oxidation Mechanism of Li2O2 and Its Application in Li-O2 Batteries. ECS Meeting Abstracts, 2019, , .	0.0	0

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109	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
110	(Invited) Electrode-Electrolyte Design for Rechargeable Air-Batteries. ECS Meeting Abstracts, 2020, MA2020-02, 471-471.	0.0	0
111	Molecular Crowding Electrolytes for High-Voltage Aqueous Batteries. ECS Meeting Abstracts, 2020, MA2020-02, 667-667.	0.0	0
112	The Quest for High-Energy and Safe Batteries. Current Opinion in Electrochemistry, 2022, , 101075.	4.8	0