

Stefan A Freunberger

List of Publications by Year in descending order

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79
papers

23,771
citations

66343

42
h-index

60623

81
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101
all docs

101
docs citations

101
times ranked

16370
citing authors

#	ARTICLE	IF	CITATIONS
1	Li ⁺ /O ₂ and Li ⁺ /S batteries with high energy storage. <i>Nature Materials</i> , 2012, 11, 19-29.	27.5	8,166
2	Challenges Facing Lithium Batteries and Electrical Double-Layer Capacitors. <i>Angewandte Chemie - International Edition</i> , 2012, 51, 9994-10024.	13.8	2,407
3	A Reversible and Higher-Rate Li-O ₂ Battery. <i>Science</i> , 2012, 337, 563-566.	12.6	1,750
4	Reactions in the Rechargeable Lithium-O ₂ Battery with Alkyl Carbonate Electrolytes. <i>Journal of the American Chemical Society</i> , 2011, 133, 8040-8047.	13.7	1,157
5	The Carbon Electrode in Nonaqueous Li-O ₂ Cells. <i>Journal of the American Chemical Society</i> , 2013, 135, 494-500.	13.7	1,145
6	The Lithium-Oxygen Battery with Ether-Based Electrolytes. <i>Angewandte Chemie - International Edition</i> , 2011, 50, 8609-8613.	13.8	1,009
7	The role of LiO ₂ solubility in O ₂ reduction in aprotic solvents and its consequences for Li-O ₂ batteries. <i>Nature Chemistry</i> , 2014, 6, 1091-1099.	13.6	942
8	Charging a Li-O ₂ battery using a redox mediator. <i>Nature Chemistry</i> , 2013, 5, 489-494.	13.6	795
9	A stable cathode for the aprotic Li-O ₂ battery. <i>Nature Materials</i> , 2013, 12, 1050-1056.	27.5	677
10	Lithium-Oxygen Batteries and Related Systems: Potential, Status, and Future. <i>Chemical Reviews</i> , 2020, 120, 6626-6683.	47.7	593
11	Oxygen Reactions in a Non-Aqueous Li ⁺ Electrolyte. <i>Angewandte Chemie - International Edition</i> , 2011, 50, 6351-6355.	13.8	518
12	Li-O ₂ Battery with a Dimethylformamide Electrolyte. <i>Journal of the American Chemical Society</i> , 2012, 134, 7952-7957.	13.7	348
13	Singlet oxygen generation as a major cause for parasitic reactions during cycling of aprotic lithium-oxygen batteries. <i>Nature Energy</i> , 2017, 2, .	39.5	328
14	Biredox ionic liquids with solid-like redox density in the liquid state for high-energy supercapacitors. <i>Nature Materials</i> , 2017, 16, 446-453.	27.5	303
15	Electrochemical Oxidation of Lithium Carbonate Generates Singlet Oxygen. <i>Angewandte Chemie - International Edition</i> , 2018, 57, 5529-5533.	13.8	204
16	Anisotropic, effective diffusivity of porous gas diffusion layer materials for PEFC. <i>Electrochimica Acta</i> , 2008, 54, 551-559.	5.2	184
17	Mechanism and performance of lithium-oxygen batteries – a perspective. <i>Chemical Science</i> , 2017, 8, 6716-6729.	7.4	146
18	Materials challenges in rechargeable lithium-air batteries. <i>MRS Bulletin</i> , 2014, 39, 443-452.	3.5	136

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19	Oscillations in Gas Channels. Journal of the Electrochemical Society, 2007, 154, B383.	2.9	126
20	A Moisture- and Oxygen-Impermeable Separator for Aprotic Li-O ₂ Batteries. Advanced Functional Materials, 2016, 26, 1747-1756.	14.9	122
21	Singlet oxygen from cation driven superoxide disproportionation and consequences for aprotic metal-O ₂ batteries. Energy and Environmental Science, 2019, 12, 2559-2568.	30.8	122
22	Current status and future perspectives of lithium metal batteries. Journal of Power Sources, 2020, 480, 228803.	7.8	109
23	Short-range Li diffusion vs. long-range ionic conduction in nanocrystalline lithium peroxide Li ₂ O ₂ the discharge product in lithium-air batteries. Energy and Environmental Science, 2014, 7, 2739-2752.	30.8	104
24	Singlet Oxygen during Cycling of the Aprotic Sodium-O ₂ Battery. Angewandte Chemie - International Edition, 2017, 56, 15728-15732.	13.8	99
25	H ₂ O Decomposition Reaction as Selecting Tool for Catalysts in Li-O ₂ Cells. Electrochemical and Solid-State Letters, 2010, 13, A180.	2.2	98
26	An Electrolyte for Reversible Cycling of Sodium Metal and Intercalation Compounds. ChemSusChem, 2017, 10, 401-408.	6.8	89
27	Electrochemical diffusimetry of fuel cell gas diffusion layers. Journal of Electroanalytical Chemistry, 2008, 612, 63-77.	3.8	73
28	True performance metrics in beyond-intercalation batteries. Nature Energy, 2017, 2, .	39.5	73
29	Deactivation of redox mediators in lithium-oxygen batteries by singlet oxygen. Nature Communications, 2019, 10, 1380.	12.8	72
30	DABCONium: An Efficient and High-Voltage Stable Singlet Oxygen Quencher for Metal-O ₂ Cells. Angewandte Chemie - International Edition, 2019, 58, 6535-6539.	13.8	72
31	Measuring the Current Distribution in PEMFCs with Sub-Millimeter Resolution. Journal of the Electrochemical Society, 2006, 153, A2158.	2.9	69
32	Activated Lithium-Metal-Oxides as Catalytic Electrodes for Li-O ₂ Cells. Electrochemical and Solid-State Letters, 2011, 14, A64.	2.2	66
33	Electron-Deficient Near-Infrared Pt(II) and Pd(II) Benzoporphyrins with Dual Phosphorescence and Unusually Efficient Thermally Activated Delayed Fluorescence: First Demonstration of Simultaneous Oxygen and Temperature Sensing with a Single Emitter. ACS Applied Materials & Interfaces, 2017, 9, 38008-38023.	8.0	53
34	Persistent and reversible solid iodine electrodeposition in nanoporous carbons. Nature Communications, 2020, 11, 4838.	12.8	52
35	Competitive Salt Precipitation/Dissolution During Free-Water Reduction in Water-in-Salt Electrolyte. Angewandte Chemie - International Edition, 2020, 59, 15913-15917.	13.8	52
36	In-Plane Effects in Large-Scale PEMFCs. Journal of the Electrochemical Society, 2006, 153, A396.	2.9	51

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37	Threshold potentials for fast kinetics during mediated redox catalysis of insulators in Li ⁺ O ₂ and Li ⁺ S batteries. <i>Nature Catalysis</i> , 2022, 5, 193-201.	34.4	51
38	Measuring the Current Distribution with Sub-Millimeter Resolution in PEFCs. <i>Journal of the Electrochemical Society</i> , 2009, 156, B301.	2.9	42
39	2-Methoxyhydroquinone from Vanillin for Aqueous Redox-Flow Batteries. <i>Angewandte Chemie - International Edition</i> , 2020, 59, 22943-22946.	13.8	42
40	Mechanism of mediated alkali peroxide oxidation and triplet versus singlet oxygen formation. <i>Nature Chemistry</i> , 2021, 13, 465-471.	13.6	41
41	Enhancing Photoinduced Electron Transfer Efficiency of Fluorescent pH-Probes with Halogenated Phenols. <i>Analytical Chemistry</i> , 2014, 86, 9293-9300.	6.5	39
42	Evaluating the trade-off between mechanical and electrochemical performance of separators for lithium-ion batteries: Methodology and application. <i>Journal of Power Sources</i> , 2016, 306, 702-710.	7.8	37
43	Experimental investigation of coupling phenomena in polymer electrolyte fuel cell stacks. <i>Journal of Power Sources</i> , 2006, 161, 1076-1083.	7.8	36
44	Aprotic Li ⁺ O ₂ Battery: Influence of Complexing Agents on Oxygen Reduction in an Aprotic Solvent. <i>Journal of Physical Chemistry C</i> , 2014, 118, 3393-3401.	3.1	36
45	Biredox ionic liquids: new opportunities toward high performance supercapacitors. <i>Faraday Discussions</i> , 2018, 206, 393-404.	3.2	33
46	Mutual Conservation of Redox Mediator and Singlet Oxygen Quencher in Lithium-Oxygen Batteries. <i>ACS Catalysis</i> , 2019, 9, 9914-9922.	11.2	33
47	Cell Interaction Phenomena in Polymer Electrolyte Fuel Cell Stacks. <i>Journal of the Electrochemical Society</i> , 2008, 155, B704.	2.9	32
48	Biredox ionic liquids: electrochemical investigation and impact of ion size on electron transfer. <i>Electrochimica Acta</i> , 2016, 206, 513-523.	5.2	32
49	Homogenization of the current density in polymer electrolyte fuel cells by in-plane cathode catalyst gradients. <i>Electrochimica Acta</i> , 2006, 51, 5383-5393.	5.2	27
50	Long-Chain Li and Na Alkyl Carbonates as Solid Electrolyte Interphase Components: Structure, Ion Transport, and Mechanical Properties. <i>Chemistry of Materials</i> , 2018, 30, 3338-3345.	6.7	25
51	Quantifying Total Superoxide, Peroxide, and Carbonaceous Compounds in Metal-O ₂ Batteries and the Solid Electrolyte Interphase. <i>ACS Energy Letters</i> , 2018, 3, 170-176.	17.4	24
52	Method for Determination of the Internal Short Resistance and Heat Evolution at Different Mechanical Loads of a Lithium Ion Battery Cell Based on Dummy Pouch Cells. <i>Batteries</i> , 2016, 2, 8.	4.5	23
53	Competitive Salt Precipitation/Dissolution During Free-Water Reduction in Water-in-Salt Electrolyte. <i>Angewandte Chemie</i> , 2020, 132, 16047-16051.	2.0	23
54	Consumption and Efficiency of a Passenger Car with a Hydrogen/Oxygen PEFC based Hybrid Electric Drivetrain. <i>Fuel Cells</i> , 2007, 7, 329-335.	2.4	20

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55	Expanding current distribution measurement in PEFCs to sub-millimeter resolution. <i>Electrochemistry Communications</i> , 2006, 8, 1435-1438.	4.7	18
56	In situ small-angle X-ray scattering reveals solution phase discharge of Li ⁺ O ₂ batteries with weakly solvating electrolytes. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2021, 118, .	7.1	18
57	Fuel Cell Modeling and Simulations. <i>Chimia</i> , 2004, 58, 857-868.	0.6	17
58	In-Plane Effects in Large-Scale PEFCs. <i>Journal of the Electrochemical Society</i> , 2006, 153, A909.	2.9	15
59	On the Efficiency of an Advanced Automotive Fuel Cell System. <i>Fuel Cells</i> , 2007, 7, 159-164.	2.4	15
60	Batteries: Charging ahead rationally. <i>Nature Energy</i> , 2016, 1, .	39.5	14
61	Singulett ¹ Sauerstoff in der aprotischen Natrium ² Batterie. <i>Angewandte Chemie</i> , 2017, 129, 15934-15938.	2.0	14
62	Elektrochemische Oxidation von Lithiumcarbonat generiert Singulett ¹ Sauerstoff. <i>Angewandte Chemie</i> , 2018, 130, 5627-5631.	2.0	13
63	Modular Stack-Internal Air Humidification Concept-Verification in a 1 MW Stack. <i>Fuel Cells</i> , 2004, 4, 214-218.	2.4	12
64	Investigation of Electrochemical and Chemical Processes Occurring at Positive Potentials in Water-in-Salt Electrolytes. <i>Journal of the Electrochemical Society</i> , 2021, 168, 050550.	2.9	12
65	DABCONium: Ein effizienter und Hochspannungsstabiler Singulett ¹ Sauerstoff-LÄrscher für Metall ² Zellen. <i>Angewandte Chemie</i> , 2019, 131, 6605-6609.	2.0	10
66	Surface and catalyst driven singlet oxygen formation in Li-O ₂ cells. <i>Electrochimica Acta</i> , 2020, 362, 137175.	5.2	10
67	Proton conducting hollow graphene oxide cylinder as molecular fuel barrier for tubular H ₂ -air fuel cell. <i>International Journal of Hydrogen Energy</i> , 2016, 41, 22305-22315.	7.1	9
68	Lithium insertion properties of mesoporous nanocrystalline TiO ₂ and TiO ₂ ·V ₂ O ₅ microspheres prepared by non-hydrolytic sol-gel. <i>Journal of Sol-Gel Science and Technology</i> , 2016, 79, 270-278.	2.4	9
69	Inter-Backbone Charge Transfer as Prerequisite for Long-Range Conductivity in Perylene Bisimide Hydrogels. <i>ACS Nano</i> , 2018, 12, 5800-5806.	14.6	8
70	Li-O ₂ Cell-Scale Energy Densities. <i>Joule</i> , 2019, 3, 321-323.	24.0	7
71	Interphase identity crisis. <i>Nature Chemistry</i> , 2019, 11, 761-763.	13.6	6
72	Polysaccharide Based Supercapacitors. <i>Springer Briefs in Molecular Science</i> , 2017, , .	0.1	5

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73	2-Methoxyhydroquinone from Vanillin for Aqueous Redox-Flow Batteries. <i>Angewandte Chemie</i> , 2020, 132, 23143-23146.	2.0	5
74	Thousands of cycles. <i>Nature Materials</i> , 2019, 18, 301-302.	27.5	4
75	Nonaqueous Electrolytes. , 2014, , 23-58.		4
76	Ambient Condition Alcohol Reforming to Hydrogen with Electricity Output. <i>ACS Sustainable Chemistry and Engineering</i> , 2021, 9, 3104-3111.	6.7	2
77	What is Learned Beyond the Scale of Single Cells?. <i>ECS Transactions</i> , 2006, 3, 963-968.	0.5	0
78	Innenr¼cktitelbild: Singulettâ€Sauerstoff in der aprotischen Natriumâ€O₂-Batterie (Angew.) Tj ETQg0 0 0 rgBT /Overlo	2.0	0
79	Experimental Investigation of the Propagation of Local Current Density Variations to Adjacent Cells in PEFC Stacks. , 2005, , .		0