

# Stefan A Freunberger

## List of Publications by Year in descending order

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79  
papers

23,771  
citations

66234

42  
h-index

60497

81  
g-index

101  
all docs

101  
docs citations

101  
times ranked

16370  
citing authors

#	ARTICLE	IF	CITATIONS
1	Li <sup>+</sup> O <sub>2</sub> and Li <sup>+</sup> S batteries with high energy storage. <i>Nature Materials</i> , 2012, 11, 19-29.	13.3	8,166
2	Challenges Facing Lithium Batteries and Electrical Double-Layer Capacitors. <i>Angewandte Chemie - International Edition</i> , 2012, 51, 9994-10024.	7.2	2,407
3	A Reversible and Higher-Rate Li-O <sub>2</sub> Battery. <i>Science</i> , 2012, 337, 563-566.	6.0	1,750
4	Reactions in the Rechargeable Lithium-O <sub>2</sub> Battery with Alkyl Carbonate Electrolytes. <i>Journal of the American Chemical Society</i> , 2011, 133, 8040-8047.	6.6	1,157
5	The Carbon Electrode in Nonaqueous Li-O <sub>2</sub> Cells. <i>Journal of the American Chemical Society</i> , 2013, 135, 494-500.	6.6	1,145
6	The Lithium-Oxygen Battery with Ether-Based Electrolytes. <i>Angewandte Chemie - International Edition</i> , 2011, 50, 8609-8613.	7.2	1,009
7	The role of LiO <sub>2</sub> solubility in O <sub>2</sub> reduction in aprotic solvents and its consequences for Li-O <sub>2</sub> batteries. <i>Nature Chemistry</i> , 2014, 6, 1091-1099.	6.6	942
8	Charging a Li-O <sub>2</sub> battery using a redox mediator. <i>Nature Chemistry</i> , 2013, 5, 489-494.	6.6	795
9	A stable cathode for the aprotic Li-O <sub>2</sub> battery. <i>Nature Materials</i> , 2013, 12, 1050-1056.	13.3	677
10	Lithium-Oxygen Batteries and Related Systems: Potential, Status, and Future. <i>Chemical Reviews</i> , 2020, 120, 6626-6683.	23.0	593
11	Oxygen Reactions in a Non-Aqueous Li <sup>+</sup> Electrolyte. <i>Angewandte Chemie - International Edition</i> , 2011, 50, 6351-6355.	7.2	518
12	Li-O <sub>2</sub> Battery with a Dimethylformamide Electrolyte. <i>Journal of the American Chemical Society</i> , 2012, 134, 7952-7957.	6.6	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, .	19.8	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.	13.3	303
15	Electrochemical Oxidation of Lithium Carbonate Generates Singlet Oxygen. <i>Angewandte Chemie - International Edition</i> , 2018, 57, 5529-5533.	7.2	204
16	Anisotropic, effective diffusivity of porous gas diffusion layer materials for PEFC. <i>Electrochimica Acta</i> , 2008, 54, 551-559.	2.6	184
17	Mechanism and performance of lithium-oxygen batteries – a perspective. <i>Chemical Science</i> , 2017, 8, 6716-6729.	3.7	146
18	Materials challenges in rechargeable lithium-air batteries. <i>MRS Bulletin</i> , 2014, 39, 443-452.	1.7	136

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19	Oscillations in Gas Channels. <i>Journal of the Electrochemical Society</i> , 2007, 154, B383.	1.3	126
20	A Moisture- and Oxygen-Impermeable Separator for Aprotic Li <sub>2</sub> O Batteries. <i>Advanced Functional Materials</i> , 2016, 26, 1747-1756.	7.8	122
21	Singlet oxygen from cation driven superoxide disproportionation and consequences for aprotic metal-O <sub>2</sub> batteries. <i>Energy and Environmental Science</i> , 2019, 12, 2559-2568.	15.6	122
22	Current status and future perspectives of lithium metal batteries. <i>Journal of Power Sources</i> , 2020, 480, 228803.	4.0	109
23	Short-range Li diffusion vs. long-range ionic conduction in nanocrystalline lithium peroxide Li <sub>2</sub> O <sub>2</sub> the discharge product in lithium-air batteries. <i>Energy and Environmental Science</i> , 2014, 7, 2739-2752.	15.6	104
24	Singlet Oxygen during Cycling of the Aprotic Sodium-O <sub>2</sub> Battery. <i>Angewandte Chemie - International Edition</i> , 2017, 56, 15728-15732.	7.2	99
25	H <sub>2</sub> O <sub>2</sub> Decomposition Reaction as Selecting Tool for Catalysts in Li-O <sub>2</sub> Cells. <i>Electrochemical and Solid-State Letters</i> , 2010, 13, A180.	2.2	98
26	An Electrolyte for Reversible Cycling of Sodium Metal and Intercalation Compounds. <i>ChemSusChem</i> , 2017, 10, 401-408.	3.6	89
27	Electrochemical diffusimetry of fuel cell gas diffusion layers. <i>Journal of Electroanalytical Chemistry</i> , 2008, 612, 63-77.	1.9	73
28	True performance metrics in beyond-intercalation batteries. <i>Nature Energy</i> , 2017, 2, .	19.8	73
29	Deactivation of redox mediators in lithium-oxygen batteries by singlet oxygen. <i>Nature Communications</i> , 2019, 10, 1380.	5.8	72
30	DABCONium: An Efficient and High-Voltage Stable Singlet Oxygen Quencher for Metal-O <sub>2</sub> Cells. <i>Angewandte Chemie - International Edition</i> , 2019, 58, 6535-6539.	7.2	72
31	Measuring the Current Distribution in PEMFCs with Sub-Millimeter Resolution. <i>Journal of the Electrochemical Society</i> , 2006, 153, A2158.	1.3	69
32	Activated Lithium-Metal-Oxides as Catalytic Electrodes for Li-O <sub>2</sub> Cells. <i>Electrochemical and Solid-State Letters</i> , 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. <i>ACS Applied Materials &amp; Interfaces</i> , 2017, 9, 38008-38023.	4.0	53
34	Persistent and reversible solid iodine electrodeposition in nanoporous carbons. <i>Nature Communications</i> , 2020, 11, 4838.	5.8	52
35	Competitive Salt Precipitation/Dissolution During Free-Water Reduction in Water-in-Salt Electrolyte. <i>Angewandte Chemie - International Edition</i> , 2020, 59, 15913-15917.	7.2	52
36	In-Plane Effects in Large-Scale PEMFCs. <i>Journal of the Electrochemical Society</i> , 2006, 153, A396.	1.3	51

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37	Threshold potentials for fast kinetics during mediated redox catalysis of insulators in Li <sup>+</sup> O <sub>2</sub> and Li <sup>+</sup> S batteries. <i>Nature Catalysis</i> , 2022, 5, 193-201.	16.1	51
38	Measuring the Current Distribution with Sub-Millimeter Resolution in PEFCs. <i>Journal of the Electrochemical Society</i> , 2009, 156, B301.	1.3	42
39	2-Methoxyhydroquinone from Vanillin for Aqueous Redox-Flow Batteries. <i>Angewandte Chemie - International Edition</i> , 2020, 59, 22943-22946.	7.2	42
40	Mechanism of mediated alkali peroxide oxidation and triplet versus singlet oxygen formation. <i>Nature Chemistry</i> , 2021, 13, 465-471.	6.6	41
41	Enhancing Photoinduced Electron Transfer Efficiency of Fluorescent pH-Probes with Halogenated Phenols. <i>Analytical Chemistry</i> , 2014, 86, 9293-9300.	3.2	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.	4.0	37
43	Experimental investigation of coupling phenomena in polymer electrolyte fuel cell stacks. <i>Journal of Power Sources</i> , 2006, 161, 1076-1083.	4.0	36
44	Aprotic Li <sup>+</sup> O <sub>2</sub> Battery: Influence of Complexing Agents on Oxygen Reduction in an Aprotic Solvent. <i>Journal of Physical Chemistry C</i> , 2014, 118, 3393-3401.	1.5	36
45	Biredox ionic liquids: new opportunities toward high performance supercapacitors. <i>Faraday Discussions</i> , 2018, 206, 393-404.	1.6	33
46	Mutual Conservation of Redox Mediator and Singlet Oxygen Quencher in Lithium-Oxygen Batteries. <i>ACS Catalysis</i> , 2019, 9, 9914-9922.	5.5	33
47	Cell Interaction Phenomena in Polymer Electrolyte Fuel Cell Stacks. <i>Journal of the Electrochemical Society</i> , 2008, 155, B704.	1.3	32
48	Biredox ionic liquids: electrochemical investigation and impact of ion size on electron transfer. <i>Electrochimica Acta</i> , 2016, 206, 513-523.	2.6	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.	2.6	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.	3.2	25
51	Quantifying Total Superoxide, Peroxide, and Carbonaceous Compounds in Metal-O <sub>2</sub> Batteries and the Solid Electrolyte Interphase. <i>ACS Energy Letters</i> , 2018, 3, 170-176.	8.8	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.	2.1	23
53	Competitive Salt Precipitation/Dissolution During Free-Water Reduction in Water-in-Salt Electrolyte. <i>Angewandte Chemie</i> , 2020, 132, 16047-16051.	1.6	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.	1.5	20

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55	Expanding current distribution measurement in PEFCs to sub-millimeter resolution. <i>Electrochemistry Communications</i> , 2006, 8, 1435-1438.	2.3	18
56	In situ small-angle X-ray scattering reveals solution phase discharge of Li <sup>+</sup> O <sub>2</sub> batteries with weakly solvating electrolytes. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2021, 118, .	3.3	18
57	Fuel Cell Modeling and Simulations. <i>Chimia</i> , 2004, 58, 857-868.	0.3	17
58	In-Plane Effects in Large-Scale PEFCs. <i>Journal of the Electrochemical Society</i> , 2006, 153, A909.	1.3	15
59	On the Efficiency of an Advanced Automotive Fuel Cell System. <i>Fuel Cells</i> , 2007, 7, 159-164.	1.5	15
60	Batteries: Charging ahead rationally. <i>Nature Energy</i> , 2016, 1, .	19.8	14
61	Singulett <sup>1</sup> Sauerstoff in der aprotischen Natrium <sup>2</sup> Batterie. <i>Angewandte Chemie</i> , 2017, 129, 15934-15938.	1.6	14
62	Elektrochemische Oxidation von Lithiumcarbonat generiert Singulett <sup>1</sup> Sauerstoff. <i>Angewandte Chemie</i> , 2018, 130, 5627-5631.	1.6	13
63	Modular Stack-Internal Air Humidification Concept-Verification in a 1 MW Stack. <i>Fuel Cells</i> , 2004, 4, 214-218.	1.5	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.	1.3	12
65	DABCONium: Ein effizienter und Hochspannungsstabiler Singulett <sup>1</sup> Sauerstoff-LÄrscher fÄ¼r Metall <sup>2</sup> Zellen. <i>Angewandte Chemie</i> , 2019, 131, 6605-6609.	1.6	10
66	Surface and catalyst driven singlet oxygen formation in Li-O <sub>2</sub> cells. <i>Electrochimica Acta</i> , 2020, 362, 137175.	2.6	10
67	Proton conducting hollow graphene oxide cylinder as molecular fuel barrier for tubular H <sub>2</sub> -air fuel cell. <i>International Journal of Hydrogen Energy</i> , 2016, 41, 22305-22315.	3.8	9
68	Lithium insertion properties of mesoporous nanocrystalline TiO <sub>2</sub> and TiO <sub>2</sub> •V <sub>2</sub> O <sub>5</sub> microspheres prepared by non-hydrolytic sol-gel. <i>Journal of Sol-Gel Science and Technology</i> , 2016, 79, 270-278.	1.1	9
69	Inter-Backbone Charge Transfer as Prerequisite for Long-Range Conductivity in Perylene Bisimide Hydrogels. <i>ACS Nano</i> , 2018, 12, 5800-5806.	7.3	8
70	Li-O <sub>2</sub> Cell-Scale Energy Densities. <i>Joule</i> , 2019, 3, 321-323.	11.7	7
71	Interphase identity crisis. <i>Nature Chemistry</i> , 2019, 11, 761-763.	6.6	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.	1.6	5
74	Thousands of cycles. <i>Nature Materials</i> , 2019, 18, 301-302.	13.3	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.	3.2	2
77	What is Learned Beyond the Scale of Single Cells?. <i>ECS Transactions</i> , 2006, 3, 963-968.	0.3	0
78	Innenr¼cktitelbild: Singulettâ€Sauerstoff in der aprotischen Natriumâ€O<sub>2</sub>-Batterie (Angew.) Tj ETQg0 0 0 rgBT /Overlo	1.8	0
79	Experimental Investigation of the Propagation of Local Current Density Variations to Adjacent Cells in PEFC Stacks. , 2005, , .		0