Stefan A Freunberger

List of Publications by Year
in descending order

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	Threshold potentials for fast kinetics during mediated redox catalysis of insulators in Liâ€“O2 and Liâ€“S batteries. Nature Catalysis, 2022, 5, 193-201.	16.1	51
2	Ambient Condition Alcohol Reforming to Hydrogen with Electricity Output. ACS Sustainable Chemistry and Engineering, 2021, 9, 3104-3111.	3.2	2
3	In situ small-angle X-ray scattering reveals solution phase discharge of Liâ€“O ₂ batteries with weakly solvating electrolytes. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	18
4	Mechanism of mediated alkali peroxide oxidation and triplet versus singlet oxygen formation. Nature Chemistry, 2021, 13, 465-471.	6.6	41
5	Investigation of Electrochemical and Chemical Processes Occurring at Positive Potentials in â€œWater-in-Saltâ€•Electrolytes. Journal of the Electrochemical Society, 2021, 168, 050550.	1.3	12
6	Current status and future perspectives of lithium metal batteries. Journal of Power Sources, 2020, 480, 228803.	4.0	109
7	Persistent and reversible solid iodine electrodeposition in nanoporous carbons. Nature Communications, 2020, 11, 4838.	5.8	52
8	2â€Methoxyhydroquinone from Vanillin for Aqueous Redoxâ€Flow Batteries. Angewandte Chemie, 2020, 132, 23143-23146.	1.6	5
9	2â€Methoxyhydroquinone from Vanillin for Aqueous Redoxâ€Flow Batteries. Angewandte Chemie - International Edition, 2020, 59, 22943-22946.	7.2	42
10	Surface and catalyst driven singlet oxygen formation in Li-O2 cells. Electrochimica Acta, 2020, 362, 137175.	2.6	10
11	Competitive Salt Precipitation/Dissolution During Freeâ€Water Reduction in Waterâ€inâ€Salt Electrolyte. Angewandte Chemie - International Edition, 2020, 59, 15913-15917.	7.2	52
12	Competitive Salt Precipitation/Dissolution During Freeâ€Water Reduction in Waterâ€inâ€Salt Electrolyte. Angewandte Chemie, 2020, 132, 16047-16051.	1.6	23
13	Lithiumâ€“Oxygen Batteries and Related Systems: Potential, Status, and Future. Chemical Reviews, 2020, 120, 6626-6683.	23.0	593
14	Interphase identity crisis. Nature Chemistry, 2019, 11, 761-763.	6.6	6
15	Mutual Conservation of Redox Mediator and Singlet Oxygen Quencher in Lithiumâ€“Oxygen Batteries. ACS Catalysis, 2019, 9, 9914-9922.	5.5	33
16	Singlet oxygen from cation driven superoxide disproportionation and consequences for aprotic metalâ€“O₂ batteries. Energy and Environmental Science, 2019, 12, 2559-2568.	15.6	122
17	DABCOnium: Ein effizienter und Hochspannungsâ€stabiler Singulettâ€Sauerstoffâ€LÃ¶scher fÃ¼r Metallâ€O 2 â€Zellen. Angewandte Chemie, 2019, 131, 6605-6609.	1.6	10
18	Thousands of cycles. Nature Materials, 2019, 18, 301-302.	13.3	4

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19	Deactivation of redox mediators in lithium-oxygen batteries by singlet oxygen. Nature Communications, 2019, 10, 1380.	5.8	72
20	DABCOnium: An Efficient and Highâ€Voltage Stable Singlet Oxygen Quencher for Metalâ€“O₂ Cells. Angewandte Chemie - International Edition, 2019, 58, 6535-6539.	7.2	72
21	Li-O2 Cell-Scale Energy Densities. Joule, 2019, 3, 321-323.	11.7	7
22	Elektrochemische Oxidation von Lithiumcarbonat generiert Singulettâ€Sauerstoff. Angewandte Chemie, 2018, 130, 5627-5631.	1.6	13
23	Quantifying Total Superoxide, Peroxide, and Carbonaceous Compounds in Metalâ€“O₂ Batteries and the Solid Electrolyte Interphase. ACS Energy Letters, 2018, 3, 170-176.	8.8	24
24	Long-Chain Li and Na Alkyl Carbonates as Solid Electrolyte Interphase Components: Structure, Ion Transport, and Mechanical Properties. Chemistry of Materials, 2018, 30, 3338-3345.	3.2	25
25	Electrochemical Oxidation of Lithium Carbonate Generates Singlet Oxygen. Angewandte Chemie - International Edition, 2018, 57, 5529-5533.	7.2	204
26	Biredox ionic liquids: new opportunities toward high performance supercapacitors. Faraday Discussions, 2018, 206, 393-404.	1.6	33
27	Inter-Backbone Charge Transfer as Prerequisite for Long-Range Conductivity in Perylene Bisimide Hydrogels. ACS Nano, 2018, 12, 5800-5806.	7.3	8
28	Polysaccharide Based Supercapacitors. Springer Briefs in Molecular Science, 2017, , .	0.1	5
29	Singlet oxygen generation as a major cause for parasitic reactions during cycling of aprotic lithiumâ€“oxygen batteries. Nature Energy, 2017, 2, .	19.8	328
30	Singlet Oxygen during Cycling of the Aprotic Sodiumâ€“O₂ Battery. Angewandte Chemie - International Edition, 2017, 56, 15728-15732.	7.2	99
31	Singulettâ€Sauerstoff in der aprotischen Natriumâ€O₂â€Batterie. Angewandte Chemie, 2017, 129, 15934-15938.	1.6	14
32	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.	4.0	53
33	Mechanism and performance of lithiumâ€“oxygen batteries â€“ a perspective. Chemical Science, 2017, 8, 6716-6729.	3.7	146
34	InnenrÃ¼cktitelbild: Singulettâ€Sauerstoff in der aprotischen Natriumâ€O₂â€Batterie (Angew.) Tj ETQq0 0 0 rgBT /Overlo	1.6	0
35	True performance metrics in beyond-intercalation batteries. Nature Energy, 2017, 2, .	19.8	73
36	An Electrolyte for Reversible Cycling of Sodium Metal and Intercalation Compounds. ChemSusChem, 2017, 10, 401-408.	3.6	89

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37	Biredox ionic liquids with solid-like redox density in the liquid state for high-energy supercapacitors. Nature Materials, 2017, 16, 446-453.	13.3	303
38	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. Batteries, 2016, 2, 8.	2.1	23
39	Proton conducting hollow graphene oxide cylinder as molecular fuel barrier for tubular H2-air fuel cell. International Journal of Hydrogen Energy, 2016, 41, 22305-22315.	3.8	9
40	Batteries: Charging ahead rationally. Nature Energy, 2016, 1, .	19.8	14
41	Lithium insertion properties of mesoporous nanocrystalline TiO2 and TiO2â€“V2O5 microspheres prepared by non-hydrolytic solâ€“gel. Journal of Sol-Gel Science and Technology, 2016, 79, 270-278.	1.1	9
42	A Moistureâ€•and Oxygenâ€•Impermeable Separator for Aprotic Liâ€O₂ Batteries. Advanced Functional Materials, 2016, 26, 1747-1756.	7.8	122
43	Biredox ionic liquids: electrochemical investigation and impact of ion size on electron transfer. Electrochimica Acta, 2016, 206, 513-523.	2.6	32
44	Evaluating the trade-off between mechanical and electrochemical performance of separators for lithium-ion batteries: Methodology and application. Journal of Power Sources, 2016, 306, 702-710.	4.0	37
45	The role of LiO2 solubility in O2 reduction in aprotic solvents and its consequences for Liâ€“O2 batteries. Nature Chemistry, 2014, 6, 1091-1099.	6.6	942
46	Aprotic Liâ€“O₂ Battery: Influence of Complexing Agents on Oxygen Reduction in an Aprotic Solvent. Journal of Physical Chemistry C, 2014, 118, 3393-3401.	1.5	36
47	Enhancing Photoinduced Electron Transfer Efficiency of Fluorescent pH-Probes with Halogenated Phenols. Analytical Chemistry, 2014, 86, 9293-9300.	3.2	39
48	Short-range Li diffusion vs. long-range ionic conduction in nanocrystalline lithium peroxide Li2O2â€"the discharge product in lithium-air batteries. Energy and Environmental Science, 2014, 7, 2739-2752.	15.6	104
49	Materials challenges in rechargeable lithium-air batteries. MRS Bulletin, 2014, 39, 443-452.	1.7	136
50	Nonaqueous Electrolytes. , 2014, , 23-58.		4
51	A stable cathode for the aprotic Liâ€“O2Âbattery. Nature Materials, 2013, 12, 1050-1056.	13.3	677
52	The Carbon Electrode in Nonaqueous Liâ€“O₂ Cells. Journal of the American Chemical Society, 2013, 135, 494-500.	6.6	1,145
53	Charging a Liâ€“O2 battery using a redox mediator. Nature Chemistry, 2013, 5, 489-494.	6.6	795
54	Liâ€“O₂ Battery with a Dimethylformamide Electrolyte. Journal of the American Chemical Society, 2012, 134, 7952-7957.	6.6	348

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55	A Reversible and Higher-Rate Li-O ₂ Battery. Science, 2012, 337, 563-566.	6.0	1,750
56	Challenges Facing Lithium Batteries and Electrical Doubleâ€Layer Capacitors. Angewandte Chemie - International Edition, 2012, 51, 9994-10024.	7.2	2,407
57	Liâ€“O2 and Liâ€“S batteries with high energy storage. Nature Materials, 2012, 11, 19-29.	13.3	8,166
58	Reactions in the Rechargeable Lithiumâ€“O₂ Battery with Alkyl Carbonate Electrolytes. Journal of the American Chemical Society, 2011, 133, 8040-8047.	6.6	1,157
59	The Lithiumâ€“Oxygen Battery with Etherâ€Based Electrolytes. Angewandte Chemie - International Edition, 2011, 50, 8609-8613.	7.2	1,009
60	Oxygen Reactions in a Nonâ€Aqueous Li⁺ Electrolyte. Angewandte Chemie - International Edition, 2011, 50, 6351-6355.	7.2	518
61	Activated Lithium-Metal-Oxides as Catalytic Electrodes for Liâ€“O2 Cells. Electrochemical and Solid-State Letters, 2011, 14, A64.	2.2	66
62	H[sub 2]O[sub 2] Decomposition Reaction as Selecting Tool for Catalysts in Liâ€“O[sub 2] Cells. Electrochemical and Solid-State Letters, 2010, 13, A180.	2.2	98
63	Measuring the Current Distribution with Sub-Millimeter Resolution in PEFCs. Journal of the Electrochemical Society, 2009, 156, B301.	1.3	42
64	Electrochemical diffusimetry of fuel cell gas diffusion layers. Journal of Electroanalytical Chemistry, 2008, 612, 63-77.	1.9	73
65	Anisotropic, effective diffusivity of porous gas diffusion layer materials for PEFC. Electrochimica Acta, 2008, 54, 551-559.	2.6	184
66	Cell Interaction Phenomena in Polymer Electrolyte Fuel Cell Stacks. Journal of the Electrochemical Society, 2008, 155, B704.	1.3	32
67	Oscillations in Gas Channels. Journal of the Electrochemical Society, 2007, 154, B383.	1.3	126
68	On the Efficiency of an Advanced Automotive Fuel Cell System. Fuel Cells, 2007, 7, 159-164.	1.5	15
69	Consumption and Efficiency of a Passenger Car with a Hydrogen/Oxygen PEFC based Hybrid Electric Drivetrain. Fuel Cells, 2007, 7, 329-335.	1.5	20
70	In-Plane Effects in Large-Scale PEFCs. Journal of the Electrochemical Society, 2006, 153, A909.	1.3	15
71	Homogenization of the current density in polymer electrolyte fuel cells by in-plane cathode catalyst gradients. Electrochimica Acta, 2006, 51, 5383-5393.	2.6	27
72	Expanding current distribution measurement in PEFCs to sub-millimeter resolution. Electrochemistry Communications, 2006, 8, 1435-1438.	2.3	18

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73	Experimental investigation of coupling phenomena in polymer electrolyte fuel cell stacks. Journal of Power Sources, 2006, 161, 1076-1083.	4.0	36
74	Measuring the Current Distribution in PEFCs with Sub-Millimeter Resolution. Journal of the Electrochemical Society, 2006, 153, A2158.	1.3	69
75	In-Plane Effects in Large-Scale PEMFCs. Journal of the Electrochemical Society, 2006, 153, A396.	1.3	51
76	What is Learned Beyond the Scale of Single Cells?. ECS Transactions, 2006, 3, 963-968.	0.3	0
77	Experimental Investigation of the Propagation of Local Current Density Variations to Adjacent Cells in PEFC Stacks. , 2005, , .		0
78	Modular Stack-Internal Air Humidification Concept-Verification in a 1â€‰kW Stack. Fuel Cells, 2004, 4, 214-218.	1.5	12
79	Fuel Cell Modeling and Simulations. Chimia, 2004, 58, 857-868.	0.3	17