Zhi Wei Seh

List of Publications by Year
in descending order

93 papers	29,551 citations	18482 62 h-index	42399 92 g-index
98 all docs	98 docs citations	98 times ranked	24017 citing authors

#	Article	IF	Citations
1	Combining theory and experiment in electrocatalysis: Insights into materials design. Science, 2017, 355, .	12.6	7,837
2	Designing high-energy lithiumâ€“sulfur batteries. Chemical Society Reviews, 2016, 45, 5605-5634.	38.1	2,008
3	Sulphurâ€“TiO2 yolkâ€“shell nanoarchitecture with internal void space for long-cycle lithiumâ€“sulphur batteries. Nature Communications, 2013, 4, 1331.	12.8	1,884
4	Balancing surface adsorption and diffusion of lithium-polysulfides on nonconductive oxides for lithiumâ€“sulfur battery design. Nature Communications, 2016, 7, 11203.	12.8	1,136
5	Two-Dimensional Molybdenum Carbide (MXene) as an Efficient Electrocatalyst for Hydrogen Evolution. ACS Energy Letters, 2016, 1, 589-594.	17.4	1,100
6	Catalytic oxidation of Li ₂ S on the surface of metal sulfides for Liâˆ’S batteries. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 840-845.	7.1	1,030
7	Understanding the Anchoring Effect of Two-Dimensional Layered Materials for Lithiumâ€“Sulfur Batteries. Nano Letters, 2015, 15, 3780-3786.	9.1	779
8	Janus Auâ€TiO₂ Photocatalysts with Strong Localization of Plasmonic Nearâ€Fields for Efficient Visibleâ€Light Hydrogen Generation. Advanced Materials, 2012, 24, 2310-2314.	21.0	768
9	A Highly Reversible Room-Temperature Sodium Metal Anode. ACS Central Science, 2015, 1, 449-455.	11.3	733
10	Amphiphilic Surface Modification of Hollow Carbon Nanofibers for Improved Cycle Life of Lithium Sulfur Batteries. Nano Letters, 2013, 13, 1265-1270.	9.1	668
11	Understanding the Role of Different Conductive Polymers in Improving the Nanostructured Sulfur Cathode Performance. Nano Letters, 2013, 13, 5534-5540.	9.1	601
12	Two-dimensional layered transition metal disulphides for effective encapsulation of high-capacity lithium sulphide cathodes. Nature Communications, 2014, 5, 5017.	12.8	530
13	Understanding heterogeneous electrocatalytic carbon dioxide reduction through operando techniques. Nature Catalysis, 2018, 1, 922-934.	34.4	515
14	Improved lithiumâ€“sulfur batteries with a conductive coating on the separator to prevent the accumulation of inactive S-related species at the cathodeâ€“separator interface. Energy and Environmental Science, 2014, 7, 3381-3390.	30.8	476
15	Stable cycling of lithium sulfide cathodes through strong affinity with a bifunctional binder. Chemical Science, 2013, 4, 3673.	7.4	412
16	Improving lithiumâ€“sulphur batteries through spatial control of sulphur species deposition on a hybrid electrode surface. Nature Communications, 2014, 5, 3943.	12.8	369
17	High-performance hollow sulfur nanostructured battery cathode through a scalable, room temperature, one-step, bottom-up approach. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 7148-7153.	7.1	359
18	Rational Design of Two-Dimensional Transition Metal Carbide/Nitride (MXene) Hybrids and Nanocomposites for Catalytic Energy Storage and Conversion. ACS Nano, 2020, 14, 10834-10864.	14.6	349

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19	Predicting the state of charge and health of batteries using data-driven machine learning. Nature Machine Intelligence, 2020, 2, 161-170.	16.0	338
20	Tuning the Basal Plane Functionalization of Two-Dimensional Metal Carbides (MXenes) To Control Hydrogen Evolution Activity. ACS Applied Energy Materials, 2018, 1, 173-180.	5.1	304
21	Sulfur Cathodes with Hydrogen Reduced Titanium Dioxide Inverse Opal Structure. ACS Nano, 2014, 8, 5249-5256.	14.6	297
22	A Bamboo-Inspired Nanostructure Design for Flexible, Foldable, and Twistable Energy Storage Devices. Nano Letters, 2015, 15, 3899-3906.	9.1	296
23	Facile synthesis of Li2Sâ€“polypyrrole composite structures for high-performance Li2S cathodes. Energy and Environmental Science, 2014, 7, 672.	30.8	277
24	High-capacity battery cathode prelithiation to offset initial lithium loss. Nature Energy, 2016, 1, .	39.5	265
25	Fast conversion and controlled deposition of lithium (poly)sulfides in lithium-sulfur batteries using high-loading cobalt single atoms. Energy Storage Materials, 2020, 30, 250-259.	18.0	264
26	Graphite-Encapsulated Li-Metal Hybrid Anodes for High-Capacity Li Batteries. CheM, 2016, 1, 287-297.	11.7	247
27	Ultrathin two-dimensional materials for photo- and electrocatalytic hydrogen evolution. Materials Today, 2018, 21, 749-770.	14.2	228
28	Theory-guided materials design: two-dimensional MXenes in electro- and photocatalysis. Nanoscale Horizons, 2019, 4, 809-827.	8.0	218
29	Crab Shells as Sustainable Templates from Nature for Nanostructured Battery Electrodes. Nano Letters, 2013, 13, 3385-3390.	9.1	208
30	High-throughput theoretical optimization of the hydrogen evolution reaction on MXenes by transition metal modification. Journal of Materials Chemistry A, 2018, 6, 4271-4278.	10.3	198
31	Theoretical Investigation of 2D Layered Materials as Protective Films for Lithium and Sodium Metal Anodes. Advanced Energy Materials, 2017, 7, 1602528.	19.5	196
32	Crystal Growth of Calcium Carbonate in Hydrogels as a Model of Biomineralization. Advanced Functional Materials, 2012, 22, 2891-2914.	14.9	188
33	2H-MoS₂ on Mo₂CT_{<i>x</i>} MXene Nanohybrid for Efficient and Durable Electrocatalytic Hydrogen Evolution. ACS Nano, 2020, 14, 16140-16155.	14.6	180
34	Self-gating in semiconductor electrocatalysis. Nature Materials, 2019, 18, 1098-1104.	27.5	167
35	Catalytic Polysulfide Conversion and Physiochemical Confinement for Lithiumâ€“Sulfur Batteries. Advanced Energy Materials, 2020, 10, 1904010.	19.5	165
36	On the Role of Sulfur for the Selective Electrochemical Reduction of CO₂ to Formate on CuS_{<i>x</i>} Catalysts. ACS Applied Materials & Interfaces, 2018, 10, 28572-28581.	8.0	157

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37	Engineering stable electrode-separator interfaces with ultrathin conductive polymer layer for high-energy-density Li-S batteries. Energy Storage Materials, 2019, 23, 261-268.	18.0	149
38	Manipulating Redox Kinetics of Sulfur Species Using Mottâ€“Schottky Electrocatalysts for Advanced Lithiumâ€“Sulfur Batteries. Nano Letters, 2021, 21, 6656-6663.	9.1	145
39	Machine Learning: An Advanced Platform for Materials Development and State Prediction in Lithiumâ€Ion Batteries. Advanced Materials, 2022, 34, e2101474.	21.0	140
40	Anisotropic Growth of Titania onto Various Gold Nanostructures: Synthesis, Theoretical Understanding, and Optimization for Catalysis. Angewandte Chemie - International Edition, 2011, 50, 10140-10143.	13.8	139
41	Establishing new scaling relations on two-dimensional MXenes for CO₂ electroreduction. Journal of Materials Chemistry A, 2018, 6, 21885-21890.	10.3	138
42	Metalâ€“organic framework-derived hierarchical MoS₂/CoS₂ nanotube arrays as pH-universal electrocatalysts for efficient hydrogen evolution. Journal of Materials Chemistry A, 2019, 7, 13339-13346.	10.3	133
43	A Replacement Reaction Enabled Interdigitated Metal/Solid Electrolyte Architecture for Battery Cycling at 20 mA cm^{â€“2} and 20 mAh cm^{â€“2}. Journal of the American Chemical Society, 2021, 143, 3143-3152.	13.7	132
44	Enhanced Chemical Immobilization and Catalytic Conversion of Polysulfide Intermediates Using Metallic Mo Nanoclusters for High-Performance Liâ€“S Batteries. ACS Nano, 2020, 14, 1148-1157.	14.6	125
45	Two-Dimensional Titanium and Molybdenum Carbide MXenes as Electrocatalysts for CO2 Reduction. IScience, 2020, 23, 101181.	4.1	123
46	A Sulfur Cathode with Pomegranateâ€Like Cluster Structure. Advanced Energy Materials, 2015, 5, 1500211.	19.5	122
47	Roomâ€Temperature Sodiumâ€“Sulfur Batteries and Beyond: Realizing Practical High Energy Systems through Anode, Cathode, and Electrolyte Engineering. Advanced Energy Materials, 2021, 11, 2003493.	19.5	114
48	In Situ Chemical Synthesis of Lithium Fluoride/Metal Nanocomposite for High Capacity Prelithiation of Cathodes. Nano Letters, 2016, 16, 1497-1501.	9.1	112
49	Promises and Challenges of the Practical Implementation of Prelithiation in Lithiumâ€Ion Batteries. Advanced Energy Materials, 2021, 11, 2101565.	19.5	112
50	High-capacity Li2Sâ€“graphene oxide composite cathodes with stable cycling performance. Chemical Science, 2014, 5, 1396.	7.4	109
51	Synthesis and multiple reuse of eccentric Au@TiO2 nanostructures as catalysts. Chemical Communications, 2011, 47, 6689.	4.1	105
52	Effects of Applied Potential and Water Intercalation on the Surface Chemistry of Ti₂C and Mo₂C MXenes. Journal of Physical Chemistry C, 2016, 120, 28432-28440.	3.1	104
53	Highly Nitridated Grapheneâ€“Li₂S Cathodes with Stable Modulated Cycles. Advanced Energy Materials, 2015, 5, 1501369.	19.5	97
54	Catalytic Effect on CO₂ Electroreduction by Hydroxyl-Terminated Two-Dimensional MXenes. ACS Applied Materials & Interfaces, 2019, 11, 36571-36579.	8.0	94

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55	Conformal Prelithiation Nanoshell on LiCoO₂ Enabling High-Energy Lithium-Ion Batteries. Nano Letters, 2020, 20, 4558-4565.	9.1	92
56	An artificial metal-alloy interphase for high-rate and long-life sodiumâ€“sulfur batteries. Energy Storage Materials, 2020, 29, 1-8.	18.0	91
57	Lithium Sulfide/Metal Nanocomposite as a Highâ€Capacity Cathode Prelithiation Material. Advanced Energy Materials, 2016, 6, 1600154.	19.5	87
58	In-operando optical imaging of temporal and spatial distribution of polysulfides in lithium-sulfur batteries. Nano Energy, 2015, 11, 579-586.	16.0	84
59	Stable interphase chemistry of textured Zn anode for rechargeable aqueous batteries. Science Bulletin, 2022, 67, 716-724.	9.0	80
60	Atomistic modeling of electrocatalysis: Are we there yet?. Wiley Interdisciplinary Reviews: Computational Molecular Science, 2021, 11, e1499.	14.6	79
61	Metal/LiF/Li₂O Nanocomposite for Battery Cathode Prelithiation: Trade-off between Capacity and Stability. Nano Letters, 2020, 20, 546-552.	9.1	72
62	A Saltâ€•inâ€Metal Anode: Stabilizing the Solid Electrolyte Interphase to Enable Prolonged Battery Cycling. Advanced Functional Materials, 2021, 31, 2010602.	14.9	69
63	Defectâ€Enhanced CO₂ Reduction Catalytic Performance in Oâ€Terminated MXenes. ChemSusChem, 2020, 13, 5690-5698.	6.8	59
64	Material design strategies to improve the performance of rechargeable magnesiumâ€“sulfur batteries. Materials Horizons, 2021, 8, 830-853.	12.2	55
65	Designing Nanostructured Metal Chalcogenides as Cathode Materials for Rechargeable Magnesium Batteries. Small, 2021, 17, e2007683.	10.0	52
66	Theory-guided experimental design in battery materials research. Science Advances, 2022, 8, eabm2422.	10.3	52
67	Using a Chloride-Free Magnesium Battery Electrolyte to Form a Robust Anodeâ€“Electrolyte Nanointerface. Nano Letters, 2021, 21, 8220-8228.	9.1	51
68	Surface-engineered cobalt oxide nanowires as multifunctional electrocatalysts for efficient Zn-Air batteries-driven overall water splitting. Energy Storage Materials, 2019, 23, 1-7.	18.0	48
69	A High-Performance Magnesium Triflate-based Electrolyte for Rechargeable Magnesium Batteries. Cell Reports Physical Science, 2020, 1, 100265.	5.6	48
70	Tailoring binderâ€“cathode interactions for long-life room-temperature sodiumâ€“sulfur batteries. Journal of Materials Chemistry A, 2020, 8, 22983-22997.	10.3	47
71	A Biphasic Interphase Design Enabling High Performance in Room Temperature Sodium-Sulfur Batteries. Cell Reports Physical Science, 2020, 1, 100044.	5.6	47
72	Tailoring Porosity in Copper-Based Multinary Sulfide Nanostructures for Energy, Biomedical, Catalytic, and Sensing Applications. ACS Applied Nano Materials, 2018, 1, 3042-3062.	5.0	40

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73	Rechargeable magnesium batteries enabled by conventional electrolytes with multifunctional organic chloride additives. Energy Storage Materials, 2022, 45, 1120-1132.	18.0	40
74	Understanding electrified interfaces. Nature Reviews Materials, 2021, 6, 289-291.	48.7	38
75	Tunable Nitrogen-Doping of Sulfur Host Nanostructures for Stable and Shuttle-Free Room-Temperature Sodiumâ€“Sulfur Batteries. Nano Letters, 2021, 21, 5401-5408.	9.1	36
76	Understanding the Cathodeâ€“Electrolyte Interphase in Lithiumâ€Ion Batteries. Energy Technology, 2022, 10, .	3.8	34
77	Titaniaâ€Coated Metal Nanostructures. Chemistry - an Asian Journal, 2012, 7, 2174-2184.	3.3	29
78	Enhanced processability and electrochemical cyclability of metallic sodium at elevated temperature using sodium alloy composite. Energy Storage Materials, 2021, 35, 310-316.	18.0	26
79	Implications of Na-ion solvation on Na anodeâ€“electrolyte interphase. Trends in Chemistry, 2022, 4, 48-59.	8.5	26
80	MXenes and their derivatives as nitrogen reduction reaction catalysts: recent progress and perspectives. Materials Today Energy, 2021, 22, 100864.	4.7	24
81	Addressing the Low Solubility of a Solid Electrolyte Interphase Stabilizer in an Electrolyte by Composite Battery Anode Design. ACS Applied Materials & Interfaces, 2021, 13, 13354-13361.	8.0	23
82	Insights on â€œnitrate saltâ€ in lithium anode for stabilized solid electrolyte interphase. , 2022, 4, 12-20.		22
83	Ultrafine Sodium Sulfide Clusters Confined in Carbon Nano-polyhedrons as High-Efficiency Presodiation Reagents for Sodium-Ion Batteries. ACS Applied Materials & Interfaces, 2021, 13, 27057-27065.	8.0	17
84	Towards autonomous high-throughput multiscale modelling of battery interfaces. Energy and Environmental Science, 2022, 15, 579-594.	30.8	17
85	Guiding Uniform Sodium Deposition through Host Modification for Sodium Metal Batteries. Batteries and Supercaps, 2022, 5, .	4.7	16
86	Autonomous high-throughput computations in catalysis. Chem Catalysis, 2022, 2, 940-956.	6.1	14
87	Comparative Study of Conventional Electrolytes for Rechargeable Magnesium Batteries. Batteries and Supercaps, 2022, 5, .	4.7	11
88	Sulfurized Cyclopentadienyl Nanocomposites for Shuttle-Free Room-Temperature Sodiumâ€“Sulfur Batteries. Nano Letters, 2021, 21, 10538-10546.	9.1	11
89	Quasiâ€solidâ€state conversion cathode materials for roomâ€temperature sodiumâ€“sulfur batteries. , 2022, 1, .		10
90	Strain-controlled single Cr-embedded nitrogen-doped graphene achieves efficient nitrogen reduction. Materials Advances, 2021, 2, 5704-5711.	5.4	9

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91	Toward Automated Computational Discovery of Battery Materials. Advanced Materials Technologies, 2023, 8, .	5.8	5
92	Hydrogels: Crystal Growth of Calcium Carbonate in Hydrogels as a Model of Biomineralization (Adv.) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 5	14.9	2
93	Lithium Batteries: Highly Nitridated Graphene-Li2S Cathodes with Stable Modulated Cycles (Adv.) Tj ETQq1 1 0.784314 rgBT /Overlock 1	19.5	0