Lei Cheng

List of Publications by Year
in descending order

52 papers	3,066 citations	257450 24 h-index	175258 52 g-index
53 all docs	53 docs citations	53 times ranked	3867 citing authors

#	Article	IF	Citations
1	Solvation Structure and Dynamics of Mg(TFSI)₂ Aqueous Electrolyte. Energy and Environmental Materials, 2022, 5, 295-304.	12.8	19
2	Insight into the nanostructure of â€œwater in saltâ€•solutions: A SAXS/WAXS study on imide-based lithium salts aqueous solutions. Energy Storage Materials, 2022, 45, 696-703.	18.0	19
3	Effects of Salt Aggregation in Perfluoroether Electrolytes. Journal of the Electrochemical Society, 2022, 169, 020506.	2.9	2
4	Design of a Scavenging Pyrrole Additive for High Voltage Lithium-Ion Batteries. Journal of the Electrochemical Society, 2022, 169, 040507.	2.9	3
5	Understanding fluorine-free electrolytes via small-angle X-ray scattering. Journal of Energy Chemistry, 2022, 70, 340-346.	12.9	10
6	Beyond Local Solvation Structure: Nanometric Aggregates in Battery Electrolytes and Their Effect on Electrolyte Properties. ACS Energy Letters, 2022, 7, 461-470.	17.4	75
7	Selective Hydration of Rutile TiO₂ as a Strategy for Site-Selective Atomic Layer Deposition. ACS Applied Materials & Interfaces, 2022, 14, 21585-21595.	8.0	10
8	Techno-economic analysis of non-aqueous hybrid redox flow batteries. Journal of Power Sources, 2022, 536, 231493.	7.8	3
9	Fluorination Enables Simultaneous Improvements of a Dialkoxybenzene-Based Redoxmer for Nonaqueous Redox Flow Batteries. ACS Applied Materials & Interfaces, 2022, 14, 28834-28841.	8.0	2
10	Toward Bottom-Up Understanding of Transport in Concentrated Battery Electrolytes. ACS Central Science, 2022, 8, 880-890.	11.3	14
11	A high-energy and long-cycling lithiumâ€“sulfur pouch cell via a macroporous catalytic cathode with double-end binding sites. Nature Nanotechnology, 2021, 16, 166-173.	31.5	392
12	Unveiling decaying mechanism through quantitative structure-activity relationship in electrolytes for lithium-ion batteries. Nano Energy, 2021, 83, 105843.	16.0	23
13	Crowded electrolytes containing redoxmers in different states of charge: Solution structure, properties, and fundamental limits on energy density. Journal of Molecular Liquids, 2021, 334, 116533.	4.9	18
14	Principle in developing novel fluorinated sulfone electrolyte for high voltage lithium-ion batteries. Energy and Environmental Science, 2021, 14, 3029-3034.	30.8	44
15	Stress- and Interface-Compatible Red Phosphorus Anode for High-Energy and Durable Sodium-Ion Batteries. ACS Energy Letters, 2021, 6, 547-556.	17.4	33
16	TEMPO allegro: liquid catholyte redoxmers for nonaqueous redox flow batteries. Journal of Materials Chemistry A, 2021, 9, 16769-16775.	10.3	15
17	Microscopic Understanding of the Ionic Networks of â€œWater-in-Saltâ€•Electrolytes. Energy Material Advances, 2021, 2021, .	11.0	20
18	Enabling Magnesium Anodes by Tuning the Electrode/Electrolyte Interfacial Structure. ACS Applied Materials & Interfaces, 2021, 13, 52461-52468.	8.0	13

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19	Competitive Pi-Stacking and H-Bond Piling Increase Solubility of Heterocyclic Redoxmers. Journal of Physical Chemistry B, 2020, 124, 10409-10418.	2.6	10
20	Fluorescence-Enabled Self-Reporting for Redox Flow Batteries. ACS Energy Letters, 2020, 5, 3062-3068.	17.4	9
21	Influence of Ether Solvent and Anion Coordination on Electrochemical Behavior in Calcium Battery Electrolytes. ACS Applied Energy Materials, 2020, 3, 8437-8447.	5.1	37
22	Self-Assembled Solute Networks in Crowded Electrolyte Solutions and Nanoconfinement of Charged Redoxmer Molecules. Journal of Physical Chemistry B, 2020, 124, 10226-10236.	2.6	18
23	Viscous flow properties and hydrodynamic diameter of phenothiazine-based redox-active molecules in different supporting salt environments. Physics of Fluids, 2020, 32, .	4.0	17
24	Molecular Design of a Highly Stable Single-Ion Conducting Polymer Gel Electrolyte. ACS Applied Materials & Interfaces, 2020, 12, 29162-29172.	8.0	38
25	Origin of Unusual Acidity and Li⁺ Diffusivity in a Series of Water-in-Salt Electrolytes. Journal of Physical Chemistry B, 2020, 124, 5284-5291.	2.6	26
26	Mechanistic Insights in Quinone-Based Zinc Batteries with Nonaqueous Electrolytes. Journal of the Electrochemical Society, 2020, 167, 100536.	2.9	7
27	Energy storage emerging: A perspective from the Joint Center for Energy Storage Research. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 12550-12557.	7.1	218
28	Realistic Ion Dynamics through Charge Renormalization in Nonaqueous Electrolytes. Journal of Physical Chemistry B, 2020, 124, 3214-3220.	2.6	15
29	Asymmetric Composition of Ionic Aggregates and the Origin of High Correlated Transference Number in Water-in-Salt Electrolytes. Journal of Physical Chemistry Letters, 2020, 11, 1276-1281.	4.6	57
30	Unexpected electrochemical behavior of an anolyte redoxmer in flow battery electrolytes: solvating cations help to fight against the thermodynamicâ€“kinetic dilemma. Journal of Materials Chemistry A, 2020, 8, 13470-13479.	10.3	17
31	Revisiting the Role of Conductivity and Polarity of Host Materials for Longâ€Life Lithiumâ€“Sulfur Battery. Advanced Energy Materials, 2020, 10, 1903934.	19.5	52
32	A First-Principles Investigation of Gas-Phase Ring-Opening Reaction of Furan over HZSM-5 and Ga-Substituted ZSM-5. Industrial & Engineering Chemistry Research, 2019, 58, 15127-15133.	3.7	6
33	Solvating power series of electrolyte solvents for lithium batteries. Energy and Environmental Science, 2019, 12, 1249-1254.	30.8	138
34	Communicationâ€"Microscopic View of the Ethylene Carbonate Based Lithium-Ion Battery Electrolyte by X-ray Scattering. Journal of the Electrochemical Society, 2019, 166, A47-A49.	2.9	21
35	New Class of Electrocatalysts Based on 2D Transition Metal Dichalcogenides in Ionic Liquid. Advanced Materials, 2019, 31, e1804453.	21.0	43
36	Directing the Lithiumâ€“Sulfur Reaction Pathway via Sparingly Solvating Electrolytes for High Energy Density Batteries. ACS Central Science, 2017, 3, 605-613.	11.3	164

#	Article	IF	Citations
37	Effects of Functional Groups in Redox-Active Organic Molecules: A High-Throughput Screening Approach. Journal of Physical Chemistry C, 2017, 121, 237-245.	3.1	63
38	Computational Studies of Solubilities of LiO₂and Li₂O₂in Aprotic Solvents. Journal of the Electrochemical Society, 2017, 164, E3696-E3701.	2.9	26
39	Insight into the Capacity Fading Mechanism of Amorphous Se₂S₅ Confined in Micro/Mesoporous Carbon Matrix in Ether-Based Electrolytes. Nano Letters, 2016, 16, 2663-2673.	9.1	83
40	Effect of Hydrofluoroether Cosolvent Addition on Li Solvation in Acetonitrile-Based Solvate Electrolytes and Its Influence on S Reduction in a Liâ€“S Battery. ACS Applied Materials & Interfaces, 2016, 8, 34360-34371.	8.0	58
41	Sparingly Solvating Electrolytes for High Energy Density Lithiumâ€“Sulfur Batteries. ACS Energy Letters, 2016, 1, 503-509.	17.4	190
42	The lightest organic radical cation for charge storage in redox flow batteries. Scientific Reports, 2016, 6, 32102.	3.3	59
43	Accelerating Electrolyte Discovery for Energy Storage with High-Throughput Screening. Journal of Physical Chemistry Letters, 2015, 6, 283-291.	4.6	276
44	An organophosphine oxide redox shuttle additive that delivers long-term overcharge protection for 4 V lithium-ion batteries. Journal of Materials Chemistry A, 2015, 3, 10710-10714.	10.3	24
45	1,4-Bis(trimethylsilyl)-2,5-dimethoxybenzene: a novel redox shuttle additive for overcharge protection in lithium-ion batteries that doubles as a mechanistic chemical probe. Journal of Materials Chemistry A, 2015, 3, 7332-7337.	10.3	33
46	The unexpected discovery of the Mg(HMDS)₂/MgCl₂ complex as a magnesium electrolyte for rechargeable magnesium batteries. Journal of Materials Chemistry A, 2015, 3, 6082-6087.	10.3	137
47	Elucidating the structure of the magnesium aluminum chloride complex electrolyte for magnesium-ion batteries. Energy and Environmental Science, 2015, 8, 3718-3730.	30.8	131
48	Liquid Catholyte Molecules for Nonaqueous Redox Flow Batteries. Advanced Energy Materials, 2015, 5, 1401782.	19.5	143
49	Effect of the size-selective silver clusters on lithium peroxide morphology in lithiumâ€“oxygen batteries. Nature Communications, 2014, 5, 4895.	12.8	186
50	Computational Studies of Structure and Catalytic Activity of Vanadia for Propane Oxidative Dehydrogenation. ACS Symposium Series, 2013, , 71-82.	0.5	2
51	Adsorption and Diffusion of Fructose in Zeolite HZSM-5: Selection of Models and Methods for Computational Studies. Journal of Physical Chemistry C, 2011, 115, 21785-21790.	3.1	30
52	Selective Hydroxylation of In₂O₃ as A Route to Site-Selective Atomic Layer Deposition. Journal of Physical Chemistry C, 0, , .	3.1	6