Xin-Bing Cheng

List of Publications by Year in Descending Order

121 papers	23,936 citations	74 h-index	139 g-index
139 ext. papers	28,451 ext. citations	15.2 avg, IF	7.67 L-index

#	Paper	IF	Citations
121	Dual-layer vermiculite nanosheet based hybrid film to suppress dendrite growth in lithium metal batteries. *Journal of Energy Chemistry*, **2022**, 69, 205-205	12	4
120	High sulfur-doped hard carbon anode from polystyrene with enhanced capacity and stability for potassium-ion storage. *Journal of Energy Chemistry*, **2022**, 68, 688-698	12	1
119	Plating current density distribution of lithium metal anodes in pouch cells. *Journal of Energy Chemistry*, **2022**, 69, 70-75	12	3
118	Mechanism understanding for stripping electrochemistry of Li metal anode. *SusMat*, **2021**, 1, 506-536		13
117	A perspective on sustainable energy materials for lithium batteries. *SusMat*, **2021**, 1, 38-50		69
116	A two-dimension laminar composite protective layer for dendrite-free lithium metal anode. *Journal of Energy Chemistry*, **2021**, 56, 391-394	12	16
115	Formation mechanism of the solid electrolyte interphase in different ester electrolytes. *Journal of Materials Chemistry A*, **2021**, 9, 19664-19668	13	21
114	Critical Current Density in Solid-State Lithium Metal Batteries: Mechanism, Influences, and Strategies. *Advanced Functional Materials*, **2021**, 31, 2009925	15.6	74
113	Innenr□ktitelbild: A Diffusion--Reaction Competition Mechanism to Tailor Lithium Deposition for Lithium-Metal Batteries (Angew. Chem. 20/2020). *Angewandte Chemie*, **2020**, 132, 8041-8041	3.6	
112	Interfacial redox behaviors of sulfide electrolytes in fast-charging all-solid-state lithium metal batteries. *Energy Storage Materials*, **2020**, 31, 267-273	19.4	24
111	Solid Electrolyte Interphase: The Failure of Solid Electrolyte Interphase on Li Metal Anode: Structural Uniformity or Mechanical Strength? (Adv. Energy Mater. 10/2020). *Advanced Energy Materials*, **2020**, 10, 2070045	21.8	0
110	A Diffusion--Reaction Competition Mechanism to Tailor Lithium Deposition for Lithium-Metal Batteries. *Angewandte Chemie - International Edition*, **2020**, 59, 7743-7747	16.4	91
109	Slurry-Coated Sulfur/Sulfide Cathode with Li Metal Anode for All-Solid-State Lithium-Sulfur Pouch Cells. *Batteries and Supercaps*, **2020**, 3, 596-603	5.6	26
108	A Diffusion--Reaction Competition Mechanism to Tailor Lithium Deposition for Lithium-Metal Batteries. *Angewandte Chemie*, **2020**, 132, 7817-7821	3.6	25
107	Controlling Dendrite Growth in Solid-State Electrolytes. *ACS Energy Letters*, **2020**, 5, 833-843	20.1	165
106	Three-Dimensional Superlithiophilic Interphase for Dendrite-Free Lithium Metal Anodes. *ACS Applied Materials & Interfaces*, **2020**, 12, 5767-5774	9.5	20
105	Rational design of two-dimensional nanomaterials for lithium□sulfur batteries. *Energy and Environmental Science*, **2020**, 13, 1049-1075	35.4	156

104	Improved interfacial electronic contacts powering high sulfur utilization in all-solid-state lithium–sulfur batteries. *Energy Storage Materials*, **2020**, 25, 436-442	19.4	42
103	The Failure of Solid Electrolyte Interphase on Li Metal Anode: Structural Uniformity or Mechanical Strength?. *Advanced Energy Materials*, **2020**, 10, 1903645	21.8	98
102	Alloy Anodes for Rechargeable Alkali-Metal Batteries: Progress and Challenge **2019**, 1, 217-229		85
101	Regulating the Inner Helmholtz Plane for Stable Solid Electrolyte Interphase on Lithium Metal Anodes. *Journal of the American Chemical Society*, **2019**, 141, 9422-9429	16.4	216
100	Lithium-Metal Anodes: Dual-Phase Single-Ion Pathway Interfaces for Robust Lithium Metal in Working Batteries (Adv. Mater. 19/2019). *Advanced Materials*, **2019**, 31, 1970135	24	1
99	Dendrite-free sandwiched ultrathin lithium metal anode with even lithium plating and stripping behavior. *Nano Research*, **2019**, 12, 2224-2229	10	24
98	Dual-Phase Single-Ion Pathway Interfaces for Robust Lithium Metal in Working Batteries. *Advanced Materials*, **2019**, 31, e1808392	24	162
97	The dendrite growth in 3D structured lithium metal anodes: Electron or ion transfer limitation?. *Energy Storage Materials*, **2019**, 23, 556-565	19.4	75
96	Artificial Interphases for Highly Stable Lithium Metal Anode. *Matter*, **2019**, 1, 317-344	12.7	303
95	Electrochemical Diagram of an Ultrathin Lithium Metal Anode in Pouch Cells. *Advanced Materials*, **2019**, 31, e1902785	24	78
94	Recent advances in understanding dendrite growth on alkali metal anodes. *EnergyChem*, **2019**, 1, 100003	36.9	97
93	A Coaxial-Interweaved Hybrid Lithium Metal Anode for Long-Lifespan Lithium Metal Batteries. *Advanced Energy Materials*, **2019**, 9, 1901932	21.8	44
92	Plating/Stripping Behavior of Actual Lithium Metal Anode. *Advanced Energy Materials*, **2019**, 9, 1902254	21.8	109
91	Favorable Lithium Nucleation on Lithiophilic Framework Porphyrin for Dendrite-Free Lithium Metal Anodes. *Research*, **2019**, 2019, 1-11	7.8	23
90	Favorable Lithium Nucleation on Lithiophilic Framework Porphyrin for Dendrite-Free Lithium Metal Anodes. *Research*, **2019**, 2019, 4608940	7.8	22
89	Lithiophilicity chemistry of heteroatom-doped carbon to guide uniform lithium nucleation in lithium metal anodes. *Science Advances*, **2019**, 5, eaau7728	14.3	266
88	Carbon materials for traffic power battery. *ETransportation*, **2019**, 2, 100033	12.7	28
87	Uniform Lithium Nucleation Guided by Atomically Dispersed Lithiophilic CoNx Sites for Safe Lithium Metal Batteries. *Small Methods*, **2019**, 3, 1800354	12.8	51

86	Recent Advances in Energy Chemistry between Solid-State Electrolyte and Safe Lithium-Metal Anodes. *CheM*, **2019**, 5, 74-96	16.2	383
85	Lithiophilic LiC Layers on Carbon Hosts Enabling Stable Li Metal Anode in Working Batteries. *Advanced Materials*, **2019**, 31, e1807131	24	177
84	Regulating Anions in the Solvation Sheath of Lithium Ions for Stable Lithium Metal Batteries. *ACS Energy Letters*, **2019**, 4, 411-416	20.1	176
83	Spatially uniform deposition of lithium metal in 3D Janus hosts. *Energy Storage Materials*, **2019**, 16, 259-266	19.4	84
82	Highly Stable Lithium Metal Batteries Enabled by Regulating the Solvation of Lithium Ions in Nonaqueous Electrolytes. *Angewandte Chemie - International Edition*, **2018**, 57, 5301-5305	16.4	402
81	Lithium Metal Anodes: Artificial Soft-Rigid Protective Layer for Dendrite-Free Lithium Metal Anode (Adv. Funct. Mater. 8/2018). *Advanced Functional Materials*, **2018**, 28, 1870049	15.6	12
80	Highly Stable Lithium Metal Batteries Enabled by Regulating the Solvation of Lithium Ions in Nonaqueous Electrolytes. *Angewandte Chemie*, **2018**, 130, 5399-5403	3.6	97
79	Coralloid Carbon Fiber-Based Composite Lithium Anode for Robust Lithium Metal Batteries. *Joule*, **2018**, 2, 764-777	27.8	435
78	Titelbild: Highly Stable Lithium Metal Batteries Enabled by Regulating the Solvation of Lithium Ions in Nonaqueous Electrolytes (Angew. Chem. 19/2018). *Angewandte Chemie*, **2018**, 130, 5275-5275	3.6	2
77	Dual-Layered Film Protected Lithium Metal Anode to Enable Dendrite-Free Lithium Deposition. *Advanced Materials*, **2018**, 30, e1707629	24	278
76	Perspectives for restraining harsh lithium dendrite growth: Towards robust lithium metal anodes. *Energy Storage Materials*, **2018**, 15, 148-170	19.4	166
75	Ion-Solvent Complexes Promote Gas Evolution from Electrolytes on a Sodium Metal Anode. *Angewandte Chemie*, **2018**, 130, 742-745	3.6	22
74	Artificial Soft-Rigid Protective Layer for Dendrite-Free Lithium Metal Anode. *Advanced Functional Materials*, **2018**, 28, 1705838	15.6	355
73	Innentitelbild: Ion-Solvent Complexes Promote Gas Evolution from Electrolytes on a Sodium Metal Anode (Angew. Chem. 3/2018). *Angewandte Chemie*, **2018**, 130, 606-606	3.6	
72	Sulfurized solid electrolyte interphases with a rapid Li+ diffusion on dendrite-free Li metal anodes. *Energy Storage Materials*, **2018**, 10, 199-205	19.4	165
71	Lithium Nitrate Solvation Chemistry in Carbonate Electrolyte Sustains High-Voltage Lithium Metal Batteries. *Angewandte Chemie*, **2018**, 130, 14251-14255	3.6	87
70	Lithium Nitrate Solvation Chemistry in Carbonate Electrolyte Sustains High-Voltage Lithium Metal Batteries. *Angewandte Chemie - International Edition*, **2018**, 57, 14055-14059	16.4	249
69	Lithium Metal Anodes: Dual-Layered Film Protected Lithium Metal Anode to Enable Dendrite-Free Lithium Deposition (Adv. Mater. 25/2018). *Advanced Materials*, **2018**, 30, 1870181	24	8

68	Advances in Interfaces between Li Metal Anode and Electrolyte. *Advanced Materials Interfaces*, **2018**, 5, 1701097	4.6	144
67	3D TiC/C Core/Shell Nanowire Skeleton for Dendrite-Free and Long-Life Lithium Metal Anode. *Advanced Energy Materials*, **2018**, 8, 1702322	21.8	204
66	Beyond lithium ion batteries: Higher energy density battery systems based on lithium metal anodes. *Energy Storage Materials*, **2018**, 12, 161-175	19.4	284
65	Review□i Metal Anode in Working Lithium-Sulfur Batteries. *Journal of the Electrochemical Society*, **2018**, 165, A6058-A6072	3.9	172
64	An ion redistributor for dendrite-free lithium metal anodes. *Science Advances*, **2018**, 4, eaat3446	14.3	231
63	An Armored Mixed Conductor Interphase on a Dendrite-Free Lithium-Metal Anode. *Advanced Materials*, **2018**, 30, e1804461	24	246
62	R□ktitelbild: Lithium Nitrate Solvation Chemistry in Carbonate Electrolyte Sustains High-Voltage Lithium Metal Batteries (Angew. Chem. 43/2018). *Angewandte Chemie*, **2018**, 130, 14488-14488	3.6	
61	Electronic and Ionic Channels in Working Interfaces of Lithium Metal Anodes. *ACS Energy Letters*, **2018**, 3, 1564-1570	20.1	158
60	Ion-Solvent Complexes Promote Gas Evolution from Electrolytes on a Sodium Metal Anode. *Angewandte Chemie - International Edition*, **2018**, 57, 734-737	16.4	140
59	Towards stable lithium-sulfur batteries: Mechanistic insights into electrolyte decomposition on lithium metal anode. *Energy Storage Materials*, **2017**, 8, 194-201	19.4	133
58	Fluoroethylene Carbonate Additives to Render Uniform Li Deposits in Lithium Metal Batteries. *Advanced Functional Materials*, **2017**, 27, 1605989	15.6	878
57	Advanced Micro/Nanostructures for Lithium Metal Anodes. *Advanced Science*, **2017**, 4, 1600445	13.6	338
56	Implantable Solid Electrolyte Interphase in Lithium-Metal Batteries. *CheM*, **2017**, 2, 258-270	16.2	411
55	Innentitelbild: Lithiophilic Sites in Doped Graphene Guide Uniform Lithium Nucleation for Dendrite-Free Lithium Metal Anodes (Angew. Chem. 27/2017). *Angewandte Chemie*, **2017**, 129, 7790-7790	3.6	2
54	Review on High-Loading and High-Energy Lithium□Sulfur Batteries. *Advanced Energy Materials*, **2017**, 7, 1700260	21.8	1010
53	Lithiophilic Sites in Doped Graphene Guide Uniform Lithium Nucleation for Dendrite-Free Lithium Metal Anodes. *Angewandte Chemie - International Edition*, **2017**, 56, 7764-7768	16.4	760
52	Lithiophilic Sites in Doped Graphene Guide Uniform Lithium Nucleation for Dendrite-Free Lithium Metal Anodes. *Angewandte Chemie*, **2017**, 129, 7872-7876	3.6	127
51	Healing High-Loading Sulfur Electrodes with Unprecedented Long Cycling Life: Spatial Heterogeneity Control. *Journal of the American Chemical Society*, **2017**, 139, 8458-8466	16.4	163

50	Scaled-up fabrication of porous-graphene-modified separators for high-capacity lithium–sulfur batteries. *Energy Storage Materials*, **2017**, 7, 56-63	19.4	131
49	An anion-immobilized composite electrolyte for dendrite-free lithium metal anodes. *Proceedings of the National Academy of Sciences of the United States of America*, **2017**, 114, 11069-11074	11.5	515
48	R□cktitelbild: Columnar Lithium Metal Anodes (Angew. Chem. 45/2017). *Angewandte Chemie*, **2017**, 129, 14508-14508	3.6	
47	Columnar Lithium Metal Anodes. *Angewandte Chemie - International Edition*, **2017**, 56, 14207-14211	16.4	146
46	Nanodiamonds suppress the growth of lithium dendrites. *Nature Communications*, **2017**, 8, 336	17.4	257
45	Columnar Lithium Metal Anodes. *Angewandte Chemie*, **2017**, 129, 14395-14399	3.6	38
44	Toward Safe Lithium Metal Anode in Rechargeable Batteries: A Review. *Chemical Reviews*, **2017**, 117, 10403-10473	68.1	2918
43	The gap between long lifespan Li-S coin and pouch cells: The importance of lithium metal anode protection. *Energy Storage Materials*, **2017**, 6, 18-25	19.4	240
42	Lithium-Sulfur Batteries: Review on High-Loading and High-Energy Lithium–Sulfur Batteries (Adv. Energy Mater. 24/2017). *Advanced Energy Materials*, **2017**, 7, 1770141	21.8	32
41	Nanostructured energy materials for electrochemical energy conversion and storage: A review. *Journal of Energy Chemistry*, **2016**, 25, 967-984	12	316
40	A Cooperative Interface for Highly Efficient Lithium-Sulfur Batteries. *Advanced Materials*, **2016**, 28, 9551-9558	24	431
39	Lithium metal protection through in-situ formed solid electrolyte interphase in lithium-sulfur batteries: The role of polysulfides on lithium anode. *Journal of Power Sources*, **2016**, 327, 212-220	8.9	201
38	A Review of Solid Electrolyte Interphases on Lithium Metal Anode. *Advanced Science*, **2016**, 3, 1500213	13.6	962
37	3D Carbonaceous Current Collectors: The Origin of Enhanced Cycling Stability for High-Sulfur-Loading Lithium–Sulfur Batteries. *Advanced Functional Materials*, **2016**, 26, 6351-6358	15.6	191
36	Lithium-Sulfur Batteries: A Cooperative Interface for Highly Efficient Lithium–Sulfur Batteries (Adv. Mater. 43/2016). *Advanced Materials*, **2016**, 28, 9550-9550	24	2
35	Rational Integration of Polypropylene/Graphene Oxide/Nafion as Ternary-Layered Separator to Retard the Shuttle of Polysulfides for Lithium-Sulfur Batteries. *Small*, **2016**, 12, 381-9	11	267
34	Conductive Nanostructured Scaffolds Render Low Local Current Density to Inhibit Lithium Dendrite Growth. *Advanced Materials*, **2016**, 28, 2155-62	24	498
33	Lithium Anodes: Conductive Nanostructured Scaffolds Render Low Local Current Density to Inhibit Lithium Dendrite Growth (Adv. Mater. 11/2016). *Advanced Materials*, **2016**, 28, 2090-2090	24	1

32	Li2S5-based ternary-salt electrolyte for robust lithium metal anode. *Energy Storage Materials*, **2016**, 3, 77-84	19.4	215
31	Powering Lithium-Sulfur Battery Performance by Propelling Polysulfide Redox at Sulfiphilic Hosts. *Nano Letters*, **2016**, 16, 519-27	11.5	1055
30	Dendrite-Free Lithium Deposition Induced by Uniformly Distributed Lithium Ions for Efficient Lithium Metal Batteries. *Advanced Materials*, **2016**, 28, 2888-95	24	699
29	Construction of a cathode using amorphous FePO 4 nanoparticles for a high-power/energy-density lithium-ion battery with long-term stability. *Journal of Power Sources*, **2016**, 324, 52-60	8.9	24
28	Janus Separator of Polypropylene-Supported Cellular Graphene Framework for Sulfur Cathodes with High Utilization in Lithium-Sulfur Batteries. *Advanced Science*, **2016**, 3, 1500268	13.6	251
27	Nitrogen-doped herringbone carbon nanofibers with large lattice spacings and abundant edges: Catalytic growth and their applications in lithium ion batteries and oxygen reduction reactions. *Catalysis Today*, **2015**, 249, 244-251	5.3	39
26	Synthesis of three-dimensional rare-earth ions doped CNTs-GO-Fe3O4 hybrid structures using one-pot hydrothermal method. *Journal of Alloys and Compounds*, **2015**, 649, 82-88	5.7	15
25	CNTs in situ attached to □Fe2O3 submicron spheres for enhancing lithium storage capacity. *ACS Applied Materials & Interfaces*, **2015**, 7, 340-50	9.5	24
24	Ultrafine ferroferric oxide nanoparticles embedded into mesoporous carbon nanotubes for lithium ion batteries. *Scientific Reports*, **2015**, 5, 17553	4.9	32
23	Towards Stable Lithium-Sulfur Batteries with a Low Self-Discharge Rate: Ion Diffusion Modulation and Anode Protection. *ChemSusChem*, **2015**, 8, 2892-901	8.3	59
22	3D Mesoporous Graphene: CVD Self-Assembly on Porous Oxide Templates and Applications in High-Stable Li-S Batteries. *Small*, **2015**, 11, 5243-52	11	110
21	Dendrite-free lithium metal anodes: stable solid electrolyte interphases for high-efficiency batteries. *Journal of Materials Chemistry A*, **2015**, 3, 7207-7209	13	132
20	Dual-Phase Lithium Metal Anode Containing a Polysulfide-Induced Solid Electrolyte Interphase and Nanostructured Graphene Framework for Lithium-Sulfur Batteries. *ACS Nano*, **2015**, 9, 6373-82	16.7	261
19	Cathode materials based on carbon nanotubes for high-energy-density lithium□sulfur batteries. *Carbon*, **2014**, 75, 161-168	10.4	72
18	Nanoarchitectured Graphene/CNT@Porous Carbon with Extraordinary Electrical Conductivity and Interconnected Micro/Mesopores for Lithium-Sulfur Batteries. *Advanced Functional Materials*, **2014**, 24, 2772-2781	15.6	452
17	Carbon: Nanoarchitectured Graphene/CNT@Porous Carbon with Extraordinary Electrical Conductivity and Interconnected Micro/Mesopores for Lithium-Sulfur Batteries (Adv. Funct. Mater. 19/2014). *Advanced Functional Materials*, **2014**, 24, 2920-2920	15.6	3
16	Nitrogen-doped aligned carbon nanotube/graphene sandwiches: facile catalytic growth on bifunctional natural catalysts and their applications as scaffolds for high-rate lithium-sulfur batteries. *Advanced Materials*, **2014**, 26, 6100-5	24	492
15	Polysulfide shuttle control: Towards a lithium-sulfur battery with superior capacity performance up to 1000 cycles by matching the sulfur/electrolyte loading. *Journal of Power Sources*, **2014**, 253, 263-268	8.9	113

14	Aligned carbon nanotube/sulfur composite cathodes with high sulfur content for lithium–sulfur batteries. *Nano Energy*, **2014**, 4, 65-72	17.1	328
13	Lithium-Sulfur Batteries: Hierarchical Vine-Tree-Like Carbon Nanotube Architectures: In-Situ CVD Self-Assembly and Their Use as Robust Scaffolds for Lithium-Sulfur Batteries (Adv. Mater. 41/2014). *Advanced Materials*, **2014**, 26, 6986-6986	24	3
12	Flexible all-carbon interlinked nanoarchitectures as cathode scaffolds for high-rate lithium–sulfur batteries. *Journal of Materials Chemistry A*, **2014**, 2, 10869-10875	13	78
11	Lithium-Sulfur Batteries: Dendrite-Free Nanostructured Anode: Entrapment of Lithium in a 3D Fibrous Matrix for Ultra-Stable Lithium–Sulfur Batteries (Small 21/2014). *Small*, **2014**, 10, 4222-4222	11	53
10	Dendrite-free nanostructured anode: entrapment of lithium in a 3D fibrous matrix for ultra-stable lithium-sulfur batteries. *Small*, **2014**, 10, 4257-63	11	130
9	Hierarchical Free-Standing Carbon-Nanotube Paper Electrodes with Ultrahigh Sulfur-Loading for Lithium–Sulfur Batteries. *Advanced Functional Materials*, **2014**, 24, 6105-6112	15.6	432
8	Strongly Coupled Interfaces between a Heterogeneous Carbon Host and a Sulfur-Containing Guest for Highly Stable Lithium-Sulfur Batteries: Mechanistic Insight into Capacity Degradation. *Advanced Materials Interfaces*, **2014**, 1, 1400227	4.6	311
7	Lithium-Sulfur Batteries: Nitrogen-Doped Aligned Carbon Nanotube/Graphene Sandwiches: Facile Catalytic Growth on Bifunctional Natural Catalysts and Their Applications as Scaffolds for High-Rate Lithium-Sulfur Batteries (Adv. Mater. 35/2014). *Advanced Materials*, **2014**, 26, 6199-6199	24	3
6	Three-dimensional aluminum foam/carbon nanotube scaffolds as long- and short-range electron pathways with improved sulfur loading for high energy density lithium–sulfur batteries. *Journal of Power Sources*, **2014**, 261, 264-270	8.9	79
5	Hierarchical vine-tree-like carbon nanotube architectures: In-situ CVD self-assembly and their use as robust scaffolds for lithium-sulfur batteries. *Advanced Materials*, **2014**, 26, 7051-8	24	97
4	Catalytic self-limited assembly at hard templates: a mesoscale approach to graphene nanoshells for lithium-sulfur batteries. *ACS Nano*, **2014**, 8, 11280-9	16.7	156
3	Electrodes: Hierarchical Free-Standing Carbon-Nanotube Paper Electrodes with Ultrahigh Sulfur-Loading for Lithium–Sulfur Batteries (Adv. Funct. Mater. 39/2014). *Advanced Functional Materials*, **2014**, 24, 6244-6244	15.6	8
2	Robust growth of herringbone carbon nanofibers on layered double hydroxide derived catalysts and their applications as anodes for Li-ion batteries. *Carbon*, **2013**, 62, 393-404	10.4	42
1	Unlocking the Failure Mechanism of Solid State Lithium Metal Batteries. *Advanced Energy Materials*,2100748	27.8	26