Hyun-wook Lee

List of Publications by Citations

106 papers	17,972 citations	51 h-index	127 g-index
127 ext. papers	20,597 ext. citations	15.5 avg, IF	6.85 L-index

#	Paper	IF	Citations
106	A pomegranate-inspired nanoscale design for large-volume-change lithium battery anodes. *Nature Nanotechnology*, **2014**, 9, 187-92	28.7	1804
105	Interconnected hollow carbon nanospheres for stable lithium metal anodes. *Nature Nanotechnology*, **2014**, 9, 618-23	28.7	1304
104	Layered reduced graphene oxide with nanoscale interlayer gaps as a stable host for lithium metal anodes. *Nature Nanotechnology*, **2016**, 11, 626-32	28.7	1261
103	A phosphorene-graphene hybrid material as a high-capacity anode for sodium-ion batteries. *Nature Nanotechnology*, **2015**, 10, 980-5	28.7	1114
102	Selective deposition and stable encapsulation of lithium through heterogeneous seeded growth. *Nature Energy*, **2016**, 1,	62.3	1065
101	Bifunctional non-noble metal oxide nanoparticle electrocatalysts through lithium-induced conversion for overall water splitting. *Nature Communications*, **2015**, 6, 7261	17.4	855
100	Formation of stable phosphorus-carbon bond for enhanced performance in black phosphorus nanoparticle-graphite composite battery anodes. *Nano Letters*, **2014**, 14, 4573-80	11.5	627
99	Ionic conductivity enhancement of polymer electrolytes with ceramic nanowire fillers. *Nano Letters*, **2015**, 15, 2740-5	11.5	589
98	Ultrathin two-dimensional atomic crystals as stable interfacial layer for improvement of lithium metal anode. *Nano Letters*, **2014**, 14, 6016-22	11.5	545
97	Transparent air filter for high-efficiency PM2.5 capture. *Nature Communications*, **2015**, 6, 6205	17.4	525
96	Spinel LiMn2O4 nanorods as lithium ion battery cathodes. *Nano Letters*, **2008**, 8, 3948-52	11.5	518
95	Rapid water disinfection using vertically aligned MoS nanofilms and visible light. *Nature Nanotechnology*, **2016**, 11, 1098-1104	28.7	514
94	Growth of conformal graphene cages on micrometre-sized silicon particles as stable battery anodes. *Nature Energy*, **2016**, 1,	62.3	509
93	Scalable synthesis of silicon-nanolayer-embedded graphite for high-energy lithium-ion batteries. *Nature Energy*, **2016**, 1,	62.3	443
92	Ultrathin spinel LiMn2O4 nanowires as high power cathode materials for Li-ion batteries. *Nano Letters*, **2010**, 10, 3852-6	11.5	405
91	Nonfilling carbon coating of porous silicon micrometer-sized particles for high-performance lithium battery anodes. *ACS Nano*, **2015**, 9, 2540-7	16.7	372
90	Manganese hexacyanomanganate open framework as a high-capacity positive electrode material for sodium-ion batteries. *Nature Communications*, **2014**, 5, 5280	17.4	357

89	Solid-State Lithium-Sulfur Batteries Operated at 37 °C with Composites of Nanostructured LiLaZrO/Carbon Foam and Polymer. *Nano Letters*, **2017**, 17, 2967-2972	11.5	297
88	An electrochemical system for efficiently harvesting low-grade heat energy. *Nature Communications*, **2014**, 5, 3942	17.4	236
87	Artificial Solid Electrolyte Interphase-Protected LixSi Nanoparticles: An Efficient and Stable Prelithiation Reagent for Lithium-Ion Batteries. *Journal of the American Chemical Society*, **2015**, 137, 8372-5	16.4	232
86	High electrochemical selectivity of edge versus terrace sites in two-dimensional layered MoS2 materials. *Nano Letters*, **2014**, 14, 7138-44	11.5	220
85	High-Performance Lithium Metal Negative Electrode with a Soft and Flowable Polymer Coating. *ACS Energy Letters*, **2016**, 1, 1247-1255	20.1	218
84	Dry-air-stable lithium silicide-lithium oxide core-shell nanoparticles as high-capacity prelithiation reagents. *Nature Communications*, **2014**, 5, 5088	17.4	203
83	High-capacity battery cathode prelithiation to offset initial lithium loss. *Nature Energy*, **2016**, 1,	62.3	169
82	Vertical heterostructure of two-dimensional MoS_2 and WSe_2 with vertically aligned layers. *Nano Letters*, **2015**, 15, 1031-5	11.5	168
81	Extending the Life of Lithium-Based Rechargeable Batteries by Reaction of Lithium Dendrites with a Novel Silica Nanoparticle Sandwiched Separator. *Advanced Materials*, **2017**, 29, 1603987	24	164
80	A Stretchable Graphitic Carbon/Si Anode Enabled by Conformal Coating of a Self-Healing Elastic Polymer. *Advanced Materials*, **2016**, 28, 2455-61	24	163
79	Electrochemical performance and ex situ analysis of ZnMn2O4 nanowires as anode materials for lithium rechargeable batteries. *Nano Research*, **2011**, 4, 505-510	10	154
78	Reversible Multivalent (Monovalent, Divalent, Trivalent) Ion Insertion in Open Framework Materials. *Advanced Energy Materials*, **2015**, 5, 1401869	21.8	142
77	Carbothermic reduction synthesis of red phosphorus-filled 3D carbon material as a high-capacity anode for sodium ion batteries. *Energy Storage Materials*, **2016**, 4, 130-136	19.4	139
76	Diffusion behavior of sodium ions in Na0.44MnO2 in aqueous and non-aqueous electrolytes. *Journal of Power Sources*, **2013**, 244, 758-763	8.9	130
75	Mechanical rolling formation of interpenetrated lithium metal/lithium tin alloy foil for ultrahigh-rate battery anode. *Nature Communications*, **2020**, 11, 829	17.4	125
74	Lithium Silicide Surface Enrichment: A Solution to Lithium Metal Battery. *Advanced Materials*, **2018**, 30, e1801745	24	119
73	Manganese–cobalt hexacyanoferrate cathodes for sodium-ion batteries. *Journal of Materials Chemistry A*, **2016**, 4, 4211-4223	13	117
72	In Situ Observation and Electrochemical Study of Encapsulated Sulfur Nanoparticles by MoS Flakes. *Journal of the American Chemical Society*, **2017**, 139, 10133-10141	16.4	106

71	Metallurgically lithiated SiOx anode with high capacity and ambient air compatibility. *Proceedings of the National Academy of Sciences of the United States of America*, **2016**, 113, 7408-13	11.5	103
70	Suppressing Polysulfide Dissolution via Cohesive Forces by Interwoven Carbon Nanofibers for High-Areal-Capacity Lithium-Sulfur Batteries. *Nano Letters*, **2018**, 18, 475-481	11.5	102
69	Kinetics and fracture resistance of lithiated silicon nanostructure pairs controlled by their mechanical interaction. *Nature Communications*, **2015**, 6, 7533	17.4	91
68	Synthesis and Size Control of Tetragonal Barium Titanate Nanopowders by Facile Solvothermal Method. *Journal of the American Ceramic Society*, **2012**, 95, 2429-2434	3.8	89
67	Nanocrevasse-Rich Carbon Fibers for Stable Lithium and Sodium Metal Anodes. *Nano Letters*, **2019**, 19, 1504-1511	11.5	88
66	Fluoroethylene Carbonate-Based Electrolyte with 1 M Sodium Bis(fluorosulfonyl)imide Enables High-Performance Sodium Metal Electrodes. *ACS Applied Materials & Interfaces*, **2018**, 10, 15270-15280	9.5	85
65	Enhanced Intrinsic Catalytic Activity of □MnO2 by Electrochemical Tuning and Oxygen Vacancy Generation. *Angewandte Chemie - International Edition*, **2016**, 55, 8599-604	16.4	82
64	Composites of a Prussian Blue Analogue and Gelatin-Derived Nitrogen-Doped Carbon-Supported Porous Spinel Oxides as Electrocatalysts for a Zn□Air Battery. *Advanced Energy Materials*, **2016**, 6, 1601052	21.8	77
63	In Situ Chemical Synthesis of Lithium Fluoride/Metal Nanocomposite for High Capacity Prelithiation of Cathodes. *Nano Letters*, **2016**, 16, 1497-501	11.5	77
62	Design and synthesis of nitrogen and sulfur co-doped porous carbon via two-dimensional interlayer confinement for a high-performance anode material for lithium-ion batteries. *Journal of Materials Chemistry A*, **2016**, 4, 5802-5809	13	75
61	Linking void and interphase evolution to electrochemistry in solid-state batteries using operando X-ray tomography. *Nature Materials*, **2021**, 20, 503-510	27	75
60	Practical considerations of Si-based anodes for lithium-ion battery applications. *Nano Research*, **2017**, 10, 3970-4002	10	70
59	Promoting Oxygen Reduction Reaction Activity of Fe□N/C Electrocatalysts by Silica-Coating-Mediated Synthesis for Anion-Exchange Membrane Fuel Cells. *Chemistry of Materials*, **2018**, 30, 6684-6701	9.6	69
58	Robust Pitch on Silicon Nanolayer□Embedded Graphite for Suppressing Undesirable Volume Expansion. *Advanced Energy Materials*, **2019**, 9, 1803121	21.8	60
57	Facile synthesis and electrochemical performance of ordered LiNi0.5Mn1.5O4 nanorods as a high power positive electrode for rechargeable Li-ion batteries. *Journal of Power Sources*, **2011**, 196, 10712-10716	8.9	59
56	Lithium Sulfide/Metal Nanocomposite as a High-Capacity Cathode Prelithiation Material. *Advanced Energy Materials*, **2016**, 6, 1600154	21.8	57
55	Effect of the alkali insertion ion on the electrochemical properties of nickel hexacyanoferrate electrodes. *Faraday Discussions*, **2014**, 176, 69-81	3.6	50
54	Ordered Mesoporous Metastable □MoC1□ with Enhanced Water Dissociation Capability for Boosting Alkaline Hydrogen Evolution Activity. *Advanced Functional Materials*, **2019**, 29, 1901217	15.6	48

53	Self‐adaptive Si/reduced graphene oxide scrolls for high‐performance Li‐ion battery anodes. *Carbon*, **2017**, 120, 397-404	10.4	39
52	Understanding the conversion mechanism and performance of monodisperse FeF nanocrystal cathodes. *Nature Materials*, **2020**, 19, 644-654	27	39
51	Electrical Conductivity Gradient Based on Heterofibrous Scaffolds for Stable Lithium-Metal Batteries. *Advanced Functional Materials*, **2020**, 30, 1908868	15.6	34
50	Tailoring Solution-Processable Li Argyrodites LiPMSI (M = Ge, Sn) and Their Microstructural Evolution Revealed by Cryo-TEM for All-Solid-State Batteries. *Nano Letters*, **2020**, 20, 4337-4345	11.5	33
49	Engineering the Electrochemical Temperature Coefficient for Efficient Low-Grade Heat Harvesting. *Advanced Functional Materials*, **2018**, 28, 1803129	15.6	32
48	Interface Engineering of Hematite with Nacre-like Catalytic Multilayers for Solar Water Oxidation. *ACS Nano*, **2019**, 13, 467-475	16.7	31
47	Unveiling the synergistic effect of polysulfide additive and MnO hollow spheres in evolving a stable cyclic performance in Li-S batteries. *Chemical Communications*, **2017**, 53, 8782-8785	5.8	24
46	Vertically aligned carbon nanotubular structure for guiding uniform lithium deposition via capillary pressure as stable metallic lithium anodes. *Energy Storage Materials*, **2020**, 24, 602-609	19.4	23
45	Stress evolution during cycling of alloy-anode solid-state batteries. *Joule*, **2021**, 5, 2450-2465	27.8	23
44	Coordination Polymers for High-Capacity Li-Ion Batteries: Metal-Dependent Solid-State Reversibility. *ACS Applied Materials & Interfaces*, **2018**, 10, 22110-22118	9.5	22
43	Native Void Space for Maximum Volumetric Capacity in Silicon-Based Anodes. *Nano Letters*, **2019**, 19, 8793-8800	11.5	22
42	A reaction-controlled diffusion model for the lithiation of silicon in lithium-ion batteries. *Extreme Mechanics Letters*, **2015**, 4, 61-75	3.9	21
41	Impact of Textural Properties of Mesoporous Porphyrinic Carbon Electrocatalysts on Oxygen Reduction Reaction Activity. *ChemElectroChem*, **2018**, 5, 1928-1936	4.3	21
40	Graphene oxide nanosheet as a two-dimensional polyelectrolyte: pH-responsive behavior of a multilayered nanomembrane. *Journal of Membrane Science*, **2019**, 585, 191-198	9.6	20
39	A high power density electrode with ultralow carbon via direct growth of particles on graphene sheets. *Journal of Materials Chemistry A*, **2013**, 1, 6183	13	20
38	Perspectives in in situ transmission electron microscopy studies on lithium battery electrodes. *Current Opinion in Chemical Engineering*, **2016**, 12, 37-43	5.4	19
37	Influence of Ammonia on Properties of Nanocrystalline Barium Titanate Particles Prepared by a Hydrothermal Method. *Journal of the American Ceramic Society*, **2012**, 95, 2248-2253	3.8	18
36	Structure-dependent sodium ion storage mechanism of cellulose nanocrystal-based carbon anodes for highly efficient and stable batteries. *Journal of Power Sources*, **2020**, 468, 228371	8.9	16

35	Diffusion controlled multilayer electrocatalysts via graphene oxide nanosheets of varying sizes. *Nanoscale*, **2018**, 10, 16159-16168	7.7	16
34	Tailored Assembly of Molecular Water Oxidation Catalysts on Photoelectrodes for Artificial Photosynthesis. *European Journal of Inorganic Chemistry*, **2019**, 2019, 2040-2057	2.3	15
33	Enhanced Functional Properties of Ti3C2Tx MXenes as Negative Electrodes in Sodium-Ion Batteries by Chemical Tuning. *Small Methods*, **2020**, 4, 2000314	12.8	14
32	A Flexible Glass Fiber Based Freestanding Composite Electrode for High-Performance Lithium Polysulfide Batteries. *Advanced Sustainable Systems*, **2017**, 1, 1700083	5.9	14
31	Stack Pressure Measurements to Probe the Evolution of the Lithium Solid-State Electrolyte Interface. *ACS Energy Letters*, **2021**, 6, 3261-3269	20.1	14
30	Enhanced Mechanical Properties of Polymer Nanocomposites Using Dopamine-Modified Polymers at Nanoparticle Surfaces in Very Low Molecular Weight Polymers. *ACS Macro Letters*, **2018**, 7, 962-967	6.6	13
29	Enhanced Intrinsic Catalytic Activity of MnO2 by Electrochemical Tuning and Oxygen Vacancy Generation. *Angewandte Chemie*, **2016**, 128, 8741-8746	3.6	13
28	Support structure-catalyst electroactivity relation for oxygen reduction reaction on platinum supported by two-dimensional titanium carbide. *Nano Energy*, **2021**, 79, 105363	17.1	11
27	Encapsulation of Lithium Vanadium Phosphate in Reduced Graphene Oxide for a Lithium-ion Battery Cathode with Stable Elevated Temperature Performance. *Electrochimica Acta*, **2017**, 253, 208-217	6.7	10
26	Electrochemo-Mechanical Properties of Red Phosphorus Anodes in Lithium, Sodium, and Potassium Ion Batteries. *Matter*, **2020**, 3, 2012-2028	12.7	10
25	Pyridinic-to-graphitic conformational change of nitrogen in graphitic carbon nitride by lithium coordination during lithium plating. *Energy Storage Materials*, **2020**, 31, 505-514	19.4	9
24	Anomalous Si-based composite anode design by densification and coating strategies for practical applications in Li-ion batteries. *Composites Part B: Engineering*, **2021**, 215, 108799	10	9
23	An electrochromic alarm system for smart contact lenses. *Sensors and Actuators B: Chemical*, **2020**, 322, 128601	8.5	8
22	Na/Al Codoped Layered Cathode with Defects as Bifunctional Electrocatalyst for High-Performance Li-Ion Battery and Oxygen Evolution Reaction. *Small*, **2021**, 17, e2005605	11	7
21	Side-View Operando Optical Microscopy Analysis of a Graphite Anode to Study Its Kinetic Hysteresis. *ChemSusChem*, **2020**, 13, 1480-1484	8.3	6
20	Role of Areal Capacity in Determining Short Circuiting of Sulfide-Based Solid-State Batteries.. *ACS Applied Materials & Interfaces*, **2022**, 14, 4051-4060	9.5	6
19	Chemical Stability and Degradation Mechanism of Solid Electrolytes/Aqueous Media at a Steady State for Long-Lasting Sodium Batteries. *Chemistry of Materials*, **2021**, 33, 126-135	9.6	6
18	Synthesis of porous CuCo2O4 nanorods/reduced graphene oxide composites via a facile microwave hydrothermal method for high-performance hybrid supercapacitor applications. *Electrochimica Acta* , **2021**, 390, 138865	6.7	6

17	Efficient Low-Grade Heat Harvesting Enabled by Tuning the Hydration Entropy in an Electrochemical System. *Advanced Materials*, **2021**, 33, e2004717	24	5
16	Universal Solution Synthesis of Sulfide Solid Electrolytes Using Alkahest for All-Solid-State Batteries.. *Advanced Materials*, **2022**, e2200083	24	5
15	Mitigating JahnTeller Effects by Fast Electrode Kinetics Inducing Charge Redistribution. *Advanced Functional Materials*,2111901	15.6	4
14	Synthesis of One-dimensional Spinel LiMn2O4Nanostructures as a Positive Electrode in Lithium Ion Battery. *Journal of the Korean Ceramic Society*, **2011**, 48, 379-383	2.2	4
13	Realizing High-Performance Li-Polysulfide Full Cells by using a Lithium Bis(trifluoromethanesulfonyl)imide Salt Electrolyte for Stable Cyclability. *ChemSusChem*, **2018**, 11, 3402-3409	8.3	3
12	Strong interfacial energetics between catalysts and current collectors in aqueous sodium-air batteries. *Journal of Materials Chemistry A*,	13	3
11	The Role of Polymer and Inorganic Coatings to Enhance Interparticle Connections Diagnosed by Techniques. *Nano Letters*, **2021**, 21, 1530-1537	11.5	3
10	Highly robust silicon bimorph plate anode and its mechanical analysis upon electrochemical lithiation. *Energy Storage Materials*, **2019**, 23, 292-298	19.4	2
9	Selective Ion Sweeping on Prussian Blue Analogue Nanoparticles and Activated Carbon for Electrochemical Kinetic Energy Harvesting. *Nano Letters*, **2020**, 20, 1800-1807	11.5	2
8	The Chemical Stability of Nasicon As a Solid Electrolyte for Seawater Batteries. *ECS Meeting Abstracts*, **2019**,	0	2
7	Unveiling interfacial dynamics and structural degradation of solid electrolytes in a seawater battery system. *Journal of Materials Chemistry A*, **2020**, 8, 21804-21811	13	2
6	Understanding the Role of a Water-Soluble Catechol-Functionalized Binder for Silicon Anodes by Diverse In Situ Analyses831-839		2
5	Nitrogen Plasma-Assisted Functionalization of Silicon/Graphite Anodes to Enable Fast Kinetics.. *ACS Applied Materials & Interfaces*, **2022**,	9.5	1
4	In situ visualization of zinc plating in gel polymer electrolyte. *Electrochimica Acta*, **2021**, 391, 138877	6.7	1
3	Mitigating JahnTeller Effects by Fast Electrode Kinetics Inducing Charge Redistribution (Adv. Funct. Mater. 19/2022). *Advanced Functional Materials*, **2022**, 32, 2270112	15.6	1
2	Back Cover: Enhanced Functional Properties of Ti3C2Tx MXenes as Negative Electrodes in Sodium-Ion Batteries by Chemical Tuning (Small Methods 9/2020). *Small Methods*, **2020**, 4, 2070037	12.8	
1	Low-Grade Heat Harvesting: Efficient Low-Grade Heat Harvesting Enabled by Tuning the Hydration Entropy in an Electrochemical System (Adv. Mater. 13/2021). *Advanced Materials*, **2021**, 33, 2170096	24	