Hee-Dae Lim

List of Publications by Citations

80 papers	4,467 citations	34 h-index	66 g-index
89 ext. papers	5,183 ext. citations	14.3 avg, IF	5.53 L-index

#	Paper	IF	Citations
80	Superior rechargeability and efficiency of lithium-oxygen batteries: hierarchical air electrode architecture combined with a soluble catalyst. *Angewandte Chemie - International Edition*, **2014**, 53, 3926-31	16.4	360
79	Enhanced power and rechargeability of a Li-O2 battery based on a hierarchical-fibril CNT electrode. *Advanced Materials*, **2013**, 25, 1348-52	24	282
78	Rational design of redox mediators for advanced Li□O2 batteries. *Nature Energy*, **2016**, 1,	62.3	263
77	Toward a lithium-"air" battery: the effect of CO2 on the chemistry of a lithium-oxygen cell. *Journal of the American Chemical Society*, **2013**, 135, 9733-42	16.4	262
76	Recent Progress in Organic Electrodes for Li and Na Rechargeable Batteries. *Advanced Materials*, **2018**, 30, e1704682	24	246
75	Reaction chemistry in rechargeable Li-O batteries. *Chemical Society Reviews*, **2017**, 46, 2873-2888	58.5	234
74	Critical Role of Oxygen Evolved from Layered Li□Excess Metal Oxides in Lithium Rechargeable Batteries. *Chemistry of Materials*, **2012**, 24, 2692-2697	9.6	213
73	Organic nanohybrids for fast and sustainable energy storage. *Advanced Materials*, **2014**, 26, 2558-65	24	174
72	Understanding the Electrochemical Mechanism of the New Iron-Based Mixed-Phosphate Na4Fe3(PO4)2(P2O7) in a Na Rechargeable Battery. *Chemistry of Materials*, **2013**, 25, 3614-3622	9.6	174
71	Graphene for advanced Li/S and Li/air batteries. *Journal of Materials Chemistry A*, **2014**, 2, 33-47	13	154
70	A new catalyst-embedded hierarchical air electrode for high-performance Li□O2 batteries. *Energy and Environmental Science*, **2013**, 6, 3570	35.4	134
69	Anomalous Jahn□Teller behavior in a manganese-based mixed-phosphate cathode for sodium ion batteries. *Energy and Environmental Science*, **2015**, 8, 3325-3335	35.4	114
68	Dissolution and ionization of sodium superoxide in sodium-oxygen batteries. *Nature Communications*, **2016**, 7, 10670	17.4	114
67	Dendrite Suppression Membranes for Rechargeable Zinc Batteries. *ACS Applied Materials & Interfaces*, **2018**, 10, 38928-38935	9.5	111
66	Sodium-oxygen batteries with alkyl-carbonate and ether based electrolytes. *Physical Chemistry Chemical Physics*, **2013**, 15, 3623-9	3.6	110
65	The potential for long-term operation of a lithium-oxygen battery using a non-carbonate-based electrolyte. *Chemical Communications*, **2012**, 48, 8374-6	5.8	96
64	First-Principles Study of the Reaction Mechanism in Sodium□Oxygen Batteries. *Chemistry of Materials*, **2014**, 26, 1048-1055	9.6	82

63	Superior Rechargeability and Efficiency of Lithium–Oxygen Batteries: Hierarchical Air Electrode Architecture Combined with a Soluble Catalyst. *Angewandte Chemie*, **2014**, 126, 4007-4012	3.6	80
62	Scalable functionalized graphene nano-platelets as tunable cathodes for high-performance lithium rechargeable batteries. *Scientific Reports*, **2013**, 3, 1506	4.9	79
61	A review of challenges and issues concerning interfaces for all-solid-state batteries. *Energy Storage Materials*, **2020**, 25, 224-250	19.4	74
60	Exploiting Lithium–Ether Co-Intercalation in Graphite for High-Power Lithium-Ion Batteries. *Advanced Energy Materials*, **2017**, 7, 1700418	21.8	73
59	Hierarchical Porous Carbonized Co3O4 Inverse Opals via Combined Block Copolymer and Colloid Templating as Bifunctional Electrocatalysts in Li–O2 Battery. *Advanced Energy Materials*, **2017**, 7, 1700391	21.8	61
58	Novel transition-metal-free cathode for high energy and power sodium rechargeable batteries. *Nano Energy*, **2014**, 4, 97-104	17.1	57
57	Theoretical Evidence for Low Charging Overpotentials of Superoxide Discharge Products in Metal–Oxygen Batteries. *Chemistry of Materials*, **2015**, 27, 8406-8413	9.6	51
56	Enhanced Stability of Coated Carbon Electrode for Li-O2 Batteries and Its Limitations. *Advanced Energy Materials*, **2018**, 8, 1702661	21.8	49
55	Analysis of Rate-Limiting Factors in Thick Electrodes for Electric Vehicle Applications. *Journal of the Electrochemical Society*, **2018**, 165, A525-A533	3.9	48
54	A robust design of Ru quantum dot/N-doped holey graphene for efficient Li–O2 batteries. *Journal of Materials Chemistry A*, **2017**, 5, 619-631	13	45
53	Mechanism of Co3O4/graphene catalytic activity in Li–O2 batteries using carbonate based electrolytes. *Electrochimica Acta*, **2013**, 90, 63-70	6.7	44
52	Ruthenium Core–Shell Engineering with Nickel Single Atoms for Selective Oxygen Evolution via Nondestructive Mechanism. *Advanced Energy Materials*, **2021**, 11, 2003448	21.8	44
51	Graphene-Based Hybrid Electrode Material for High-Power Lithium-Ion Batteries. *Journal of the Electrochemical Society*, **2011**, 158, A930	3.9	43
50	Tuning the Carbon Crystallinity for Highly Stable Li–O2 Batteries. *Chemistry of Materials*, **2016**, 28, 8160-8169	9.6	40
49	Designing solution chemistries for the low-temperature synthesis of sulfide-based solid electrolytes. *Journal of Materials Chemistry A*, **2018**, 6, 7370-7374	13	37
48	Anti-Site Reordering in LiFePO4: Defect Annihilation on Charge Carrier Injection. *Chemistry of Materials*, **2014**, 26, 5345-5351	9.6	36
47	Solid Electrolyte Layers by Solution Deposition. *Advanced Materials Interfaces*, **2018**, 5, 1701328	4.6	35
46	Structure and Solution Dynamics of Lithium Methyl Carbonate as a Protective Layer For Lithium Metal. *ACS Applied Energy Materials*, **2018**, 1, 1864-1869	6.1	34

45	Biological Redox Mediation in Electron Transport Chain of Bacteria for Oxygen Reduction Reaction Catalysts in Lithium□Oxygen Batteries. *Advanced Functional Materials*, **2019**, 29, 1805623	15.6	34
44	High-efficiency and high-power rechargeable lithium-sulfur dioxide batteries exploiting conventional carbonate-based electrolytes. *Nature Communications*, **2017**, 8, 14989	17.4	31
43	Restoration of thermally reduced graphene oxide by atomic-level selenium doping. *NPG Asia Materials*, **2016**, 8, e338-e338	10.3	31
42	A New Perspective on Li-SO2 Batteries for Rechargeable Systems. *Angewandte Chemie - International Edition*, **2015**, 54, 9663-7	16.4	29
41	Superoxide stability for reversible Na-O electrochemistry. *Scientific Reports*, **2017**, 7, 17635	4.9	28
40	Three-dimensionally branched carbon nanowebs as air-cathode for redox-mediated Li-O2 batteries. *Carbon*, **2017**, 118, 114-119	10.4	26
39	Presodiation Strategies and Their Effect on Electrode-Electrolyte Interphases for High-Performance Electrodes for Sodium-Ion Batteries. *ACS Applied Materials & Interfaces*, **2019**, 11, 41394-41401	9.5	25
38	All-carbon-based cathode for a true high-energy-density Li-O2 battery. *Carbon*, **2017**, 114, 311-316	10.4	24
37	Magnesiophilic Graphitic Carbon Nanosubstrate for Highly Efficient and Fast-Rechargeable Mg Metal Batteries. *ACS Applied Materials & Interfaces*, **2019**, 11, 38754-38761	9.5	12
36	Superionic Si-Substituted Lithium Argyrodite Sulfide Electrolyte Li6+xSb1□SixS5I for All-Solid-State Batteries. *ACS Sustainable Chemistry and Engineering*, **2021**, 9, 120-128	8.3	12
35	Hierarchically Nanoporous 3D Assembly Composed of Functionalized Onion-Like Graphitic Carbon Nanospheres for Anode-Minimized Li Metal Batteries. *Small*, **2020**, 16, e2003918	11	12
34	Nb-doped TiO2 air-electrode for advanced Li-air batteriesPeer review under responsibility of The Ceramic Society of Japan and the Korean Ceramic Society.View all notes. *Journal of Asian Ceramic Societies*, **2015**, 3, 77-81	2.4	11
33	Elucidating and Mitigating High-Voltage Degradation Cascades in Cobalt-Free LiNiO Lithium-Ion Battery Cathodes. *Advanced Materials*, **2021**, e2106402	24	10
32	Hierarchical structural designs of ion exchange membranes for flow batteries. *Journal of Materials Chemistry A*, **2019**, 7, 5794-5802	13	9
31	A New Perspective on Li□O2 Batteries for Rechargeable Systems. *Angewandte Chemie*, **2015**, 127, 9799-9803	3.0	9
30	Tailoring Ion-Conducting Interphases on Magnesium Metals for High-Efficiency Rechargeable Magnesium Metal Batteries. *ACS Energy Letters*, **2020**, 5, 3733-3740	20.1	9
29	Stabilization effect of solid-electrolyte interphase by electrolyte engineering for advanced Li-ion batteries. *Chemical Engineering Journal*, **2021**, 424, 130524	14.7	8
28	Artificial cathode electrolyte interphase by functional additives toward long-life sodium-ion batteries. *Chemical Engineering Journal*, **2021**, 425, 130547	14.7	8

27	Catalytic Effects of Heteroatom-doped Graphene Nanosheets on the Performance of Li-O2Batteries. *Journal of Electrochemical Science and Technology*, **2014**, 5, 49-52	3.2	7
26	A New Approach to Stable Cationic and Anionic Redox Activity in O3-Layered Cathode for Sodium-Ion Batteries. *Advanced Energy Materials*, **2021**, 11, 2100901	21.8	7
25	3D-structured organic-inorganic hybrid solid-electrolyte-interface layers for Lithium metal anode. *Energy Storage Materials*, **2021**, 37, 567-575	19.4	7
24	Effect of surface characteristics of carbon host on electrochemical performance of nonaqueous Li□O2 batteries. *Chemical Engineering Journal*, **2021**, 412, 128549	14.7	7
23	Effect of the interfacial protective layer on the NaFe0.5Ni0.5O2 cathode for rechargeable sodium-ion batteries. *Journal of Materials Chemistry A*, **2020**, 8, 13964-13970	13	6
22	Electrochemically Induced Metallization of NaCl: Use of the Main Component of Salt as a Cost-Effective Electrode Material for Sodium-Ion Batteries. *ACS Energy Letters*, **2019**, 4, 2060-2068	20.1	6
21	Dual-Functioning Molecular Carrier of Superoxide Radicals for Stable and Efficient Lithium□Oxygen Batteries. *Advanced Energy Materials*, **2020**, 10, 1904187	21.8	6
20	Operando Visualization of Morphological Evolution in Mg Metal Anode: Insight into Dendrite Suppression for Stable Mg Metal Batteries. *ACS Energy Letters*, **2022**, 7, 162-170	20.1	6
19	Thermal structural stability of a multi-component olivine electrode for lithium ion batteries. *CrystEngComm*, **2016**, 18, 7463-7470	3.3	5
18	Hysteresis-Suppressed Reversible Oxygen-Redox Cathodes for Sodium-Ion Batteries. *Advanced Energy Materials*,2103939	21.8	5
17	Gold-incorporated porous hollow carbon nanofiber for reversible magnesium-metal batteries. *Chemical Engineering Journal*, **2022**, 431, 133968	14.7	3
16	Stable Cycling of All-Solid-State Batteries with Sacrificial Cathode and Lithium-Free Indium Layer. *Advanced Functional Materials*,2108203	15.6	3
15	Unveiling the pseudocapacitive effects of ultramesopores on nanoporous carbon. *Applied Surface Science*, **2021**, 537, 148037	6.7	3
14	Waste Sawdust-Derived Nanoporous Carbon as a Positive Electrode for Lithium-Ion Storage. *Macromolecular Research*, **2020**, 28, 1204-1210	1.9	2
13	Anionic three-dimensional porous aromatic framework for fast Li-ion conduction. *Chemical Engineering Journal*, **2021**, 424, 130527	14.7	2
12	Waste-induced pyrolytic carbon nanotube forest as a catalytic host electrode for high-performance aluminum metal anodes. *Chemical Engineering Journal*, **2022**, 437, 135416	14.7	2
11	Nitrogen□doped graphitic mesoporous carbon materials as effective sulfur imbibition hosts for magnesium-sulfur batteries. *Journal of Power Sources*, **2022**, 535, 231471	8.9	2
10	Self-Constructed Intimate Interface on a Silicon Anode Enabled by a Phase-Convertible Electrolyte for Lithium-Ion Batteries.. *ACS Applied Materials & Interfaces*, **2022**,	9.5	1

9	Self-Oxygenated Blood Protein-Embedded Nanotube Catalysts for Longer Cyclable Lithium Oxygen-Breathing Batteries. *ACS Sustainable Chemistry and Engineering*, **2022**, 10, 4198-4205	8.3	1
8	Facilitating sustainable oxygen-redox chemistry for P3-type cathode materials for sodium-ion batteries. *Energy Storage Materials*, **2022**, 46, 329-343	19.4	0
7	Elucidation of the role of lithium iodide as an additive for the liquid-based synthesis of Li7P2S8I solid electrolyte. *International Journal of Energy Research*, **2020**, 44, 11542-11549	4.5	0
6	A phase-convertible fast ionic conductor with a monolithic plastic crystalline host. *Journal of Materials Chemistry A*, **2021**, 9, 10838-10845	13	0
5	CO2-adsorbent spongy electrode for non-aqueous Li□O2 batteries. *Journal of Energy Chemistry*, **2022**, 65, 646-653	12	0
4	Lithium-Ion Batteries: Organic Nanohybrids for Fast and Sustainable Energy Storage (Adv. Mater. 16/2014). *Advanced Materials*, **2014**, 26, 2608-2608	24	
3	R□cktitelbild: A New Perspective on Li□O2 Batteries for Rechargeable Systems (Angew. Chem. 33/2015). *Angewandte Chemie*, **2015**, 127, 9860-9860	3.6	
2	Elucidating and Mitigating High-Voltage Degradation Cascades in Cobalt-Free LiNiO 2 Lithium-Ion Battery Cathodes (Adv. Mater. 3/2022). *Advanced Materials*, **2022**, 34, 2270026	24	
1	Ultra-fast and efficient calcium co-intercalation host enabled by hierarchically 3D porous carbon nanotemplates. *Journal of Industrial and Engineering Chemistry*, **2021**, 96, 397-403	6.3	