Youngsik Kim

List of Publications by Year
in descending order

126 papers	16,014 citations	50276 46 h-index	16183 124 g-index
135 all docs	135 docs citations	135 times ranked	17146 citing authors

#	Article	IF	Citations
1	Challenges for Rechargeable Li Batteries. Chemistry of Materials, 2010, 22, 587-603.	6.7	8,933
2	Nanostructured transition metal sulfides for lithium ion batteries: Progress and challenges. Nano Today, 2014, 9, 604-630.	11.9	545
3	Aqueous Cathode for Next-Generation Alkali-Ion Batteries. Journal of the American Chemical Society, 2011, 133, 5756-5759.	13.7	253
4	Commercial and research battery technologies for electrical energy storage applications. Progress in Energy and Combustion Science, 2015, 48, 84-101.	31.2	244
5	Corn protein-derived nitrogen-doped carbon materials with oxygen-rich functional groups: a highly efficient electrocatalyst for all-vanadium redox flow batteries. Energy and Environmental Science, 2014, 7, 3727-3735.	30.8	218
6	A hybrid solid electrolyte for flexible solid-state sodium batteries. Energy and Environmental Science, 2015, 8, 3589-3596.	30.8	204
7	A Novel Surface Treatment Method and New Insight into Discharge Voltage Deterioration for Highâ€Performance 0.4Li₂MnO_{3â€“}0.6LiNi_{1/3}Co_{1/3}Mn_{1/3}O₂ Cathode Materials. Advanced Energy Materials, 2014, 4, 1400631.	19.5	196
8	Grapheneâ€“Co₃O₄nanocomposite as an efficient bifunctional catalyst for lithiumâ€“air batteries. Journal of Materials Chemistry A, 2014, 2, 7188-7196.	10.3	192
9	Mesoporous Ge/GeO₂/Carbon Lithium-Ion Battery Anodes with High Capacity and High Reversibility. ACS Nano, 2015, 9, 5299-5309.	14.6	159
10	Metal-Free Ketjenblack Incorporated Nitrogen-Doped Carbon Sheets Derived from Gelatin as Oxygen Reduction Catalysts. Nano Letters, 2014, 14, 1870-1876.	9.1	155
11	Block Copolymer Directed Ordered Mesostructured TiNb₂O₇ Multimetallic Oxide Constructed of Nanocrystals as High Power Li-Ion Battery Anodes. Chemistry of Materials, 2014, 26, 3508-3514.	6.7	154
12	A New High Power LiNi_{0.81}Co_{0.1}Al_{0.09}O₂ Cathode Material for Lithiumâ€Ion Batteries. Advanced Energy Materials, 2014, 4, 1301583.	19.5	153
13	Highly porous graphitic carbon and Ni₂P₂O₇for a high performance aqueous hybrid supercapacitor. Journal of Materials Chemistry A, 2015, 3, 21553-21561.	10.3	153
14	Encapsulation of organic active materials in carbon nanotubes for application to high-electrochemical-performance sodium batteries. Energy and Environmental Science, 2016, 9, 1264-1269.	30.8	148
15	Technologies of lithium recycling from waste lithium ion batteries: a review. Materials Advances, 0, , .	5.4	140
16	Perovskite Sr0.95Ce0.05CoO3â¯Î´ loaded with copper nanoparticles as a bifunctional catalyst for lithium-air batteries. Journal of Materials Chemistry, 2012, 22, 18902.	6.7	131
17	Ruthenium Coreâ€“Shell Engineering with Nickel Single Atoms for Selective Oxygen Evolution via Nondestructive Mechanism. Advanced Energy Materials, 2021, 11, 2003448.	19.5	124
18	Nanocrevasse-Rich Carbon Fibers for Stable Lithium and Sodium Metal Anodes. Nano Letters, 2019, 19, 1504-1511.	9.1	123

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19	Lithium Insertion into Transition-Metal Monosulfides: Tuning the Position of the Metal 4s Band. Journal of Physical Chemistry C, 2008, 112, 15060-15064.	3.1	120
20	Graphitic Nanoshell/Mesoporous Carbon Nanohybrids as Highly Efficient and Stable Bifunctional Oxygen Electrocatalysts for Rechargeable Aqueous Naâ€“Air Batteries. Advanced Energy Materials, 2016, 6, 1501794.	19.5	120
21	Carambola-shaped VO₂ nanostructures: a binder-free air electrode for an aqueous Naâ€“air battery. Journal of Materials Chemistry A, 2017, 5, 2037-2044.	10.3	120
22	Na-ion storage performance of amorphous Sb₂S₃nanoparticles: anode for Na-ion batteries and seawater flow batteries. Journal of Materials Chemistry A, 2016, 4, 17946-17951.	10.3	89
23	A Metalâ€“Organic Framework Derived Porous Cobalt Manganese Oxide Bifunctional Electrocatalyst for Hybrid Naâ€“Air/Seawater Batteries. ACS Applied Materials & Interfaces, 2016, 8, 32778-32787.	8.0	88
24	Hierarchical urchin-shaped Î±-MnO2 on graphene-coated carbon microfibers: a binder-free electrode for rechargeable aqueous Naâ€“air battery. NPG Asia Materials, 2016, 8, e294-e294.	7.9	87
25	Sodiumâ€“Metal Halide and Sodiumâ€“Air Batteries. ChemPhysChem, 2014, 15, 1971-1982.	2.1	85
26	Rechargeable Seawater Battery and Its Electrochemical Mechanism. ChemElectroChem, 2015, 2, 328-332.	3.4	85
27	Redoxâ€Additiveâ€Enhanced High Capacitance Supercapacitors Based on Co₂P₂O₇ Nanosheets. Advanced Materials Interfaces, 2017, 4, 1700059.	3.7	85
28	Hybrid solid electrolyte with the combination of Li₇La₃Zr₂O₁₂ ceramic and ionic liquid for high voltage pseudo-solid-state Li-ion batteries. Journal of Materials Chemistry A, 2016, 4, 17025-17032.	10.3	77
29	Exploration of cobalt phosphate as a potential catalyst for rechargeable aqueous sodium-air battery. Journal of Power Sources, 2016, 311, 29-34.	7.8	74
30	Rechargeable Seawater Batteriesâ€”From Concept to Applications. Advanced Materials, 2019, 31, e1804936.	21.0	73
31	Emergence of rechargeable seawater batteries. Journal of Materials Chemistry A, 2019, 7, 22803-22825.	10.3	71
32	Superior Ionâ€Conducting Hybrid Solid Electrolyte for Allâ€Solidâ€State Batteries. ChemSusChem, 2015, 8, 636-641.	6.8	70
33	Rechargeable-hybrid-seawater fuel cell. NPG Asia Materials, 2014, 6, e144-e144.	7.9	68
34	Na ion- Conducting Ceramic as Solid Electrolyte for Rechargeable Seawater Batteries. Electrochimica Acta, 2016, 191, 1-7.	5.2	67
35	Seawater battery performance enhancement enabled by a defect/edge-rich, oxygen self-doped porous carbon electrocatalyst. Journal of Materials Chemistry A, 2017, 5, 14174-14181.	10.3	66
36	Rechargeable aqueous Naâ€“air batteries: Highly improved voltage efficiency by use of catalysts. Electrochemistry Communications, 2015, 61, 53-56.	4.7	62

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37	Ammonium Fluoride Mediated Synthesis of Anhydrous Metal Fluorideâ€“Mesoporous Carbon Nanocomposites for High-Performance Lithium Ion Battery Cathodes. ACS Applied Materials & Interfaces, 2016, 8, 35180-35190.	8.0	62
38	Flexible and wearable fiber shaped high voltage supercapacitors based on copper hexacyanoferrate and porous carbon coated carbon fiber electrodes. Journal of Materials Chemistry A, 2016, 4, 4934-4940.	10.3	61
39	Metal-free hybrid seawater fuel cell with an ether-based electrolyte. Journal of Materials Chemistry A, 2014, 2, 19584-19588.	10.3	59
40	Cloud-like graphene nanoplatelets on Nd_{0.5}Sr_{0.5}CoO_{3â^'Î´} nanorods as an efficient bifunctional electrocatalyst for hybrid Liâ€“air batteries. Journal of Materials Chemistry A, 2016, 4, 2122-2127.	10.3	54
41	Optimized hard carbon derived from starch for rechargeable seawater batteries. Carbon, 2018, 129, 564-571.	10.3	54
42	Three-dimensional SnS2 nanopetals for hybrid sodium-air batteries. Electrochimica Acta, 2017, 257, 328-334.	5.2	53
43	BinaryÂN,S-doped carbon nanospheres from bio-inspired artificial melanosomes: A route to efficient air electrodes for seawater batteries. Journal of Materials Chemistry A, 2018, 6, 24459-24467.	10.3	52
44	Inorganic solid/organic liquid hybrid electrolyte for use in Li-ion battery. Electrochimica Acta, 2012, 79, 8-16.	5.2	50
45	LiCl-LiI molten salt electrolyte with bismuth-lead positive electrode for liquid metal battery. Journal of Power Sources, 2018, 377, 87-92.	7.8	50
46	Sodium-ion hybrid electrolyte battery for sustainable energy storage applications. Journal of Power Sources, 2017, 341, 404-410.	7.8	49
47	Access to M[sup 3+]/M[sup 2+] Redox Couples in Layered LiMS[sub 2] Sulfides (M=Ti,â€,V,â€,Cr) as Anodes for Li-Ion Battery. Journal of the Electrochemical Society, 2009, 156, A703.	2.9	46
48	Ecoâ€friendly Energy Storage System: Seawater and Ionic Liquid Electrolyte. ChemSusChem, 2016, 9, 42-49.	6.8	42
49	New Chemical Route for the Synthesis of Î²-Na_{0.33}V₂O₅ and Its Fully Reversible Li Intercalation. ACS Applied Materials & Interfaces, 2015, 7, 7025-7032.	8.0	41
50	Nanocomposite quasi-solid-state electrolyte for high-safety lithium batteries. Nano Research, 2017, 10, 3092-3102.	10.4	41
51	Large-scale stationary energy storage: Seawater batteries with high rate and reversible performance. Energy Storage Materials, 2019, 16, 56-64.	18.0	41
52	High energy density rechargeable metal-free seawater batteries: a phosphorus/carbon composite as a promising anode material. Journal of Materials Chemistry A, 2018, 6, 3046-3054.	10.3	40
53	Rechargeable Na/Ni batteries based on the Ni(OH)₂/NiOOH redox couple with high energy density and good cycling performance. Journal of Materials Chemistry A, 2019, 7, 1564-1573.	10.3	40
54	Insights into the Dual-Electrode Characteristics of Layered Na_{0.5}Ni_{0.25}Mn_{0.75}O₂ Materials for Sodium-Ion Batteries. ACS Applied Materials & Interfaces, 2017, 9, 10618-10625.	8.0	38

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55	Development of coin-type cell and engineering of its compartments for rechargeable seawater batteries. Journal of Power Sources, 2018, 374, 24-30.	7.8	37
56	Ceramicâ€Based Composite Solid Electrolyte for Lithiumâ€Ion Batteries. ChemPlusChem, 2015, 80, 1100-1103.	2.8	36
57	Compartmentalized desalination and salination by high energy density desalination seawater battery. Desalination, 2020, 495, 114666.	8.2	33
58	Comparative electrochemical sodium insertion/extraction behavior in layered NaxVS2 and NaxTiS2. Electrochimica Acta, 2014, 143, 272-277.	5.2	32
59	Highly improved voltage efficiency of seawater battery by use of chloride ion capturing electrode. Journal of Power Sources, 2016, 313, 46-50.	7.8	32
60	Structural characterization of layered Na0.5Co0.5Mn0.5O2 material as a promising cathode for sodium-ion batteries. Journal of Power Sources, 2017, 363, 442-449.	7.8	31
61	Feasibility of using hollow double walled Mn2O3 nanocubes for hybrid Na-air battery. Chemical Engineering Journal, 2019, 360, 415-422.	12.7	31
62	Energy projection of the seawater battery desalination system using the reverse osmosis system analysis model. Chemical Engineering Journal, 2020, 395, 125082.	12.7	31
63	Reliable seawater battery anode: controlled sodium nucleationviadeactivation of the current collector surface. Journal of Materials Chemistry A, 2018, 6, 19672-19680.	10.3	30
64	Upcycling of nonporous coordination polymers: controllable-conversion toward porosity-tuned N-doped carbons and their electrocatalytic activity in seawater batteries. Journal of Materials Chemistry A, 2016, 4, 13468-13475.	10.3	29
65	Hybrid seawater desalination-carbon capture using modified seawater battery system. Journal of Power Sources, 2019, 410-411, 99-105.	7.8	29
66	Hybridization of cathode electrochemistry in a rechargeable seawater battery: Toward performance enhancement. Journal of Power Sources, 2020, 450, 227600.	7.8	26
67	Simultaneous Energy Storage and Seawater Desalination using Rechargeable Seawater Battery: Feasibility and Future Directions. Advanced Science, 2021, 8, e2101289.	11.2	26
68	Hierarchically structured graphene-carbon nanotube-cobalt hybrid electrocatalyst for seawater battery. Journal of Power Sources, 2017, 372, 31-37.	7.8	25
69	A New Rechargeable Seawater Desalination Battery System. Batteries and Supercaps, 2018, 1, 6-10.	4.7	25
70	Advanced perspective on the synchronized bifunctional activities of P2-type materials to implement an interconnected voltage profile for seawater batteries. Journal of Materials Chemistry A, 2018, 6, 11012-11021.	10.3	25
71	Binder-free organic cathode based on nitroxide radical polymer-functionalized carbon nanotubes and gel polymer electrolyte for high-performance sodium organic polymer batteries. Journal of Materials Chemistry A, 2020, 8, 17980-17986.	10.3	25
72	Lithium ion dynamics in Li2S+GeS2+GeO2 glasses studied using 7Li NMR field-cycling relaxometry and line-shape analysis. Solid State Nuclear Magnetic Resonance, 2015, 70, 53-62.	2.3	24

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73	Hybrid Naâ€“air flow batteries using an acidic catholyte: effect of the catholyte pH on the cell performance. Journal of Materials Chemistry A, 2017, 5, 11592-11600.	10.3	24
74	Sodium Biphenyl as Anolyte for Sodiumâ€“Seawater Batteries. Advanced Functional Materials, 2020, 30, 2001249.	14.9	24
75	Saltwater as the energy source for low-cost, safe rechargeable batteries. Journal of Materials Chemistry A, 2016, 4, 7207-7213.	10.3	23
76	Composite gel polymer electrolyte with ceramic particles for LiNi 1/3 Mn 1/3 Co 1/3 O 2 -Li 4 Ti 5 O 12 lithium ion batteries. Electrochimica Acta, 2017, 236, 394-398.	5.2	23
77	Enhancing Capacity Performance by Utilizing the Redox Chemistry of the Electrolyte in a Dual-Electrolyte Sodium-Ion Battery. Angewandte Chemie - International Edition, 2018, 57, 5335-5339.	13.8	23
78	Energy efficient Na-aqueous-catholyte redox flow battery. Energy Storage Materials, 2018, 12, 324-330.	18.0	23
79	An epoxy-reinforced ceramic sheet as a durable solid electrolyte for solid state Na-ion batteries. Journal of Materials Chemistry A, 2020, 8, 14528-14537.	10.3	23
80	Tetraruthenium Polyoxometalate as an Atom-Efficient Bifunctional Oxygen Evolution Reaction/Oxygen Reduction Reaction Catalyst and Its Application in Seawater Batteries. ACS Applied Materials & Interfaces, 2020, 12, 32689-32697.	8.0	23
81	Electrochemical Lithium Recycling System toward Renewable and Sustainable Energy Technologies. Journal of the Electrochemical Society, 2016, 163, E199-E205.	2.9	21
82	A novel rechargeable hybrid Na-seawater flow battery using bifunctional electrocatalytic carbon sponge as cathode current collector. Journal of Power Sources, 2018, 400, 478-484.	7.8	21
83	Pyridinic-Nitrogen-Containing Carbon Cathode: Efficient Electrocatalyst for Seawater Batteries. ACS Applied Energy Materials, 2020, 3, 1602-1608.	5.1	21
84	Li-Water Battery with Oxygen Dissolved in Water as a Cathode. Journal of the Electrochemical Society, 2014, 161, A285-A289.	2.9	20
85	Identifying the mechanism and impact of parasitic reactions occurring in carbonaceous seawater battery cathodes. Journal of Materials Chemistry A, 2020, 8, 9185-9193.	10.3	20
86	Lithiumâ€“liquid battery: harvesting lithium from waste Li-ion batteries and discharging with water. RSC Advances, 2012, 2, 6094.	3.6	19
87	Electrochemical properties of a ceramic-polymer-composite-solid electrolyte for Li-ion batteries. Solid State Ionics, 2016, 284, 20-24.	2.7	19
88	Cobalt vanadate nanoparticles as bifunctional oxygen electrocatalysts for rechargeable seawater batteries. Journal of Industrial and Engineering Chemistry, 2019, 72, 250-254.	5.8	19
89	Hybrid photoelectrochemical-rechargeable seawater battery for efficient solar energy storage systems. Electrochimica Acta, 2020, 332, 135443.	5.2	19
90	Investigation on the Structure and Properties of Na_{3.1}Zr_{1.55}Si_{2.3}P_{0.7}O₁₁ as a Solid Electrolyte and Its Application in a Seawater Battery. ACS Applied Materials & Interfaces, 2021, 13, 52727-52735.	8.0	18

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91	Improving electrochemical properties of porous iron substituted lithium manganese phosphate in additive addition electrolyte. Journal of Power Sources, 2015, 275, 106-110.	7.8	17
92	Redoxâ€Active Functional Electrolyte for Highâ€Performance Seawater Batteries. ChemSusChem, 2020, 13, 2220-2224.	6.8	17
93	Design of Largeâ€Scale Rectangular Cells for Rechargeable Seawater Batteries. Advanced Sustainable Systems, 2021, 5, .	5.3	17
94	Seawater-Mediated Solar-to-Sodium Conversion by Bismuth Vanadate Photoanode- Photovoltaic Tandem Cell: Solar Rechargeable Seawater Battery. IScience, 2019, 19, 232-243.	4.1	16
95	Reinvestigation of Li[sub 1â^'x]Ti[sub y]V[sub 1â^'y]S[sub 2] Electrodes in Suitable Electrolyte: Highly Improved Electrochemical Properties. Electrochemical and Solid-State Letters, 2009, 12, A73.	2.2	15
96	Progressive Assessment on the Decomposition Reaction of Na Superionic Conducting Ceramics. ACS Applied Materials & Interfaces, 2017, 9, 304-310.	8.0	14
97	Characterization of hot-pressed von Alpen type NASICON ceramic electrolytes. Solid State Ionics, 2021, 369, 115712.	2.7	14
98	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.	6.7	14
99	Electrochemical characterization of micro-rod Î²-Na0.33V2O5 for high performance lithium ion batteries. Electrochimica Acta, 2016, 193, 160-165.	5.2	13
100	Binder-free hybrid Li4Ti5O12 anode for high performance lithium-ion batteries. Electrochimica Acta, 2018, 282, 270-275.	5.2	13
101	3D Ionâ€Conducting, Scalable, and Mechanically Reinforced Ceramic Film for High Voltage Solidâ€State Batteries. Advanced Functional Materials, 2021, 31, 2002008.	14.9	13
102	Investigating the influence of catholyte salinity on seawater battery desalination. Desalination, 2021, 506, 115018.	8.2	13
103	Redoxâ€Mediated Redâ€Phosphorous Semiâ€Liquid Anode Enabling Metalâ€Free Rechargeable Naâ€Seawater Batteries with High Energy Density. Advanced Energy Materials, 2021, 11, 2102061.	19.5	13
104	A new chemical route for the synthesis of Î²â€²-Li V2O5 for use as a high performance cathode. Electrochimica Acta, 2013, 105, 403-411.	5.2	12
105	Carbothermal shock-induced bifunctional Pt-Co alloy electrocatalysts for high-performance seawater batteries. Energy Storage Materials, 2022, 45, 281-290.	18.0	11
106	Using redox electrolytes to extend the charge storage capacity in an aqueous hybrid ion battery. Chemical Engineering Journal, 2021, 411, 128416.	12.7	10
107	Strong interfacial energetics between catalysts and current collectors in aqueous sodiumâ€“air batteries. Journal of Materials Chemistry A, 2022, 10, 4601-4610.	10.3	10
108	Effect of Electrolytes on the Cathode-Electrolyte Interfacial Stability of Fe-Based Layered Cathodes for Sodium-Ion Batteries. Journal of the Electrochemical Society, 2022, 169, 030536.	2.9	10

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109	A Na+ ion-selective desalination system utilizing a NASICON ceramic membrane. Water Research, 2022, 215, 118250.	11.3	10
110	Using waste Li ion batteries as cathodes in rechargeable Liâ€“liquid batteries. Physical Chemistry Chemical Physics, 2013, 15, 7036.	2.8	9
111	Enhancing Capacity Performance by Utilizing the Redox Chemistry of the Electrolyte in a Dualâ€Electrolyte Sodiumâ€Ion Battery. Angewandte Chemie, 2018, 130, 5433-5437.	2.0	9
112	Seawater Battery-Based Wireless Marine Buoy System With Battery Degradation Prediction and Multiple Power Optimization Capabilities. IEEE Access, 2021, 9, 104104-104114.	4.2	9
113	Unveiling interfacial dynamics and structural degradation of solid electrolytes in a seawater battery system. Journal of Materials Chemistry A, 2020, 8, 21804-21811.	10.3	8
114	Development of Rechargeable Seawater Battery Module. Journal of the Electrochemical Society, 2022, 169, 040508.	2.9	8
115	Seawater battery desalination with a reverse osmosis membrane for simultaneous brine treatment and energy storage. Journal of Cleaner Production, 2022, 333, 130188.	9.3	7
116	New Highâ€Performance Pbâ€Based Nanocomposite Anode Enabled by Wideâ€Range Pb Redox and Zintl Phase Transition. Advanced Functional Materials, 2021, 31, 2005362.	14.9	6
117	Alkali-Metal-Mediated Reversible Chemical Hydrogen Storage Using Seawater. Jacs Au, 2021, 1, 2339-2348.	7.9	6
118	Development of Prismatic Cells for Rechargeable Seawater Batteries. Advanced Sustainable Systems, 2022, 6, .	5.3	6
119	Cathode Materials: A Novel Surface Treatment Method and New Insight into Discharge Voltage Deterioration for Highâ€Performance 0.4Li₂MnO_{3â€“}0.6LiNi_{1/3}Co_{1/3}Mn_{1/3}O₂ Cathode Materials (Adv. Energy Mater. 16/2014). Advanced Energy Materials, 2014, 4, .	19.5	5
120	Reversibility of Lithiumâ€Ionâ€“Air Batteries Using Lithium Intercalation Compounds as Anodes. ChemPlusChem, 2015, 80, 349-353.	2.8	5
121	Effect of sol-gel process parameters on the properties of a Li1.3Ti1.7Al0.3(PO4)3 solid electrolyte for Li-ion batteries. Journal of the Korean Physical Society, 2016, 68, 28-34.	0.7	4
122	Disinfection-Dechlorination Battery for Safe Water Production. ACS ES&T Water, 2021, 1, 2146-2154.	4.6	4
123	Zero fire battery concept: water-in-battery. Journal of Materials Chemistry A, 2022, 10, 6481-6488.	10.3	4
124	Rechargeable Seawater Batteries: Rechargeable Seawater Batteriesâ€”From Concept to Applications (Adv. Mater. 20/2019). Advanced Materials, 2019, 31, 1970141.	21.0	3
125	Eco-friendly Energy Storage System: Seawater and Ionic Liquid Electrolyte. ChemSusChem, 2016, 9, 2-2.	6.8	1
126	Monolithic Solar Seawater Battery: Seawater-Mediated Solar-to-Sodium Conversion with 8.0 % Efficiency by Bismuth Vanadate Photoanode - Photovoltaic Tandem Cell. SSRN Electronic Journal, 0, , .	0.4	0