Haegyeom Kim

List of Publications by Year
in descending order

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90 papers	14,994 citations	26630 56 h-index	56724 83 g-index
95 all docs	95 docs citations	95 times ranked	13855 citing authors

#	Article	IF	Citations
1	Aqueous Rechargeable Li and Na Ion Batteries. Chemical Reviews, 2014, 114, 11788-11827.	47.7	1,183
2	Understanding the Degradation Mechanisms of LiNi_{0.5}Co_{0.2}Mn_{0.3}O₂ Cathode Material in Lithium Ion Batteries. Advanced Energy Materials, 2014, 4, 1300787.	19.5	893
3	Recent Progress in Electrode Materials for Sodiumâ€Ion Batteries. Advanced Energy Materials, 2016, 6, 1600943.	19.5	815
4	Promises and Challenges of Next-Generation â€œBeyond Li-ionâ€• Batteries for Electric Vehicles and Grid Decarbonization. Chemical Reviews, 2021, 121, 1623-1669.	47.7	769
5	Sodium Storage Behavior in Natural Graphite using Etherâ€based Electrolyte Systems. Advanced Functional Materials, 2015, 25, 534-541.	14.9	625
6	Recent Progress and Perspective in Electrode Materials for Kâ€Ion Batteries. Advanced Energy Materials, 2018, 8, 1702384.	19.5	549
7	A Novel Highâ€Energy Hybrid Supercapacitor with an Anatase TiO₂â€“Reduced Graphene Oxide Anode and an Activated Carbon Cathode. Advanced Energy Materials, 2013, 3, 1500-1506.	19.5	510
8	Facile Synthesis of Nb₂O₅@Carbon Coreâ€“Shell Nanocrystals with Controlled Crystalline Structure for High-Power Anodes in Hybrid Supercapacitors. ACS Nano, 2015, 9, 7497-7505.	14.6	411
9	Superior Rechargeability and Efficiency of Lithiumâ€“Oxygen Batteries: Hierarchical Air Electrode Architecture Combined with a Soluble Catalyst. Angewandte Chemie - International Edition, 2014, 53, 3926-3931.	13.8	407
10	A New High-Energy Cathode for a Na-Ion Battery with Ultrahigh Stability. Journal of the American Chemical Society, 2013, 135, 13870-13878.	13.7	393
11	Advanced Hybrid Supercapacitor Based on a Mesoporous Niobium Pentoxide/Carbon as High-Performance Anode. ACS Nano, 2014, 8, 8968-8978.	14.6	380
12	Sodium intercalation chemistry in graphite. Energy and Environmental Science, 2015, 8, 2963-2969.	30.8	369
13	Highâ€Performance Sodiumâ€Ion Hybrid Supercapacitor Based on Nb₂O₅@Carbon Coreâ€“Shell Nanoparticles and Reduced Graphene Oxide Nanocomposites. Advanced Functional Materials, 2016, 26, 3711-3719.	14.9	363
14	Highly reversible Co3O4/graphene hybrid anode for lithium rechargeable batteries. Carbon, 2011, 49, 326-332.	10.3	357
15	Recent progress on flexible lithium rechargeable batteries. Energy and Environmental Science, 2014, 7, 538-551.	30.8	355
16	Reaction chemistry in rechargeable Liâ€“O₂batteries. Chemical Society Reviews, 2017, 46, 2873-2888.	38.1	314
17	Cation-disordered rocksalt-type high-entropy cathodes for Li-ion batteries. Nature Materials, 2021, 20, 214-221.	27.5	290
18	Investigation of Potassium Storage in Layered P3â€Type K_{0.5}MnO₂ Cathode. Advanced Materials, 2017, 29, 1702480.	21.0	268

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19	Critical Role of Oxygen Evolved from Layered Liâ€“Excess Metal Oxides in Lithium Rechargeable Batteries. Chemistry of Materials, 2012, 24, 2692-2697.	6.7	255
20	Kâ€Ion Batteries Based on a P2â€Type K_{0.6}CoO₂ Cathode. Advanced Energy Materials, 2017, 7, 1700098.	19.5	250
21	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.	6.7	237
22	Conditions for Reversible Na Intercalation in Graphite: Theoretical Studies on the Interplay Among Guest Ions, Solvent, and Graphite Host. Advanced Energy Materials, 2017, 7, 1601519.	19.5	219
23	Organic Nanohybrids for Fast and Sustainable Energy Storage. Advanced Materials, 2014, 26, 2558-2565.	21.0	210
24	Effects of sulfur doping on graphene-based nanosheets for use as anode materials in lithium-ion batteries. Journal of Power Sources, 2014, 262, 79-85.	7.8	203
25	All-graphene-battery: bridging the gap between supercapacitors and lithium ion batteries. Scientific Reports, 2014, 4, 5278.	3.3	185
26	SnO2/graphene composite with high lithium storage capability for lithium rechargeable batteries. Nano Research, 2010, 3, 813-821.	10.4	178
27	Graphene for advanced Li/S and Li/air batteries. Journal of Materials Chemistry A, 2014, 2, 33-47.	10.3	166
28	Hidden structural and chemical order controls lithium transport in cation-disordered oxides for rechargeable batteries. Nature Communications, 2019, 10, 592.	12.8	162
29	High Energy Organic Cathode for Sodium Rechargeable Batteries. Chemistry of Materials, 2015, 27, 7258-7264.	6.7	160
30	Ultrahigh power and energy density in partially ordered lithium-ion cathode materials. Nature Energy, 2020, 5, 213-221.	39.5	158
31	Multicomponent Effects on the Crystal Structures and Electrochemical Properties of Spinel-Structured M₃O₄ (M = Fe, Mn, Co) Anodes in Lithium Rechargeable Batteries. Chemistry of Materials, 2012, 24, 720-725.	6.7	138
32	Highâ€Performance Hybrid Supercapacitor Based on Grapheneâ€Wrapped Li₄Ti₅O₁₂ and Activated Carbon. ChemElectroChem, 2014, 1, 125-130.	3.4	137
33	A New Strategy for Highâ€Voltage Cathodes for Kâ€Ion Batteries: Stoichiometric KVPO₄F. Advanced Energy Materials, 2018, 8, 1801591.	19.5	130
34	Dissolution and ionization of sodium superoxide in sodiumâ€“oxygen batteries. Nature Communications, 2016, 7, 10670.	12.8	129
35	The interplay between thermodynamics and kinetics in the solid-state synthesis of layered oxides. Nature Materials, 2020, 19, 1088-1095.	27.5	129
36	Ordered-mesoporous Nb2O5/carbon composite as a sodium insertion material. Nano Energy, 2015, 16, 62-70.	16.0	124

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37	Exploiting Lithiumâ€“Ether Coâ€Intercalation in Graphite for Highâ€Power Lithiumâ€Ion Batteries. Advanced Energy Materials, 2017, 7, 1700418.	19.5	122
38	Sodiumâ€Ion Storage in Pyroproteinâ€Based Carbon Nanoplates. Advanced Materials, 2015, 27, 6914-6921.	21.0	120
39	A Highâ€Energy NASICONâ€Type Cathode Material for Naâ€Ion Batteries. Advanced Energy Materials, 2020, 10, 1903968.	19.5	116
40	Stoichiometric Layered Potassium Transition Metal Oxide for Rechargeable Potassium Batteries. Chemistry of Materials, 2018, 30, 6532-6539.	6.7	108
41	Neutron and X-ray Diffraction Study of Pyrophosphate-Based Li_{2â€“x}MP₂O₇ (M = Fe, Co) for Lithium Rechargeable Battery Electrodes. Chemistry of Materials, 2011, 23, 3930-3937.	6.7	106
42	Design Principles for High-Capacity Mn-Based Cation-Disordered Rocksalt Cathodes. CheM, 2020, 6, 153-168.	11.7	103
43	The potential for long-term operation of a lithiumâ€“oxygen battery using a non-carbonate-based electrolyte. Chemical Communications, 2012, 48, 8374.	4.1	100
44	A comparative study of graphite electrodes using the co-intercalation phenomenon for rechargeable Li, Na and K batteries. Chemical Communications, 2016, 52, 12618-12621.	4.1	99
45	Suppression of Voltage Decay through Manganese Deactivation and Nickel Redox Buffering in Highâ€Energy Layered Lithiumâ€Rich Electrodes. Advanced Energy Materials, 2018, 8, 1800606.	19.5	97
46	Lithium-free transition metal monoxides for positive electrodes in lithium-ion batteries. Nature Energy, 2017, 2, .	39.5	94
47	Scalable Functionalized Graphene Nano-platelets as Tunable Cathodes for High-performance Lithium Rechargeable Batteries. Scientific Reports, 2013, 3, 1506.	3.3	84
48	The Reaction Mechanism and Capacity Degradation Model in Lithium Insertion Organic Cathodes, Li₂C₆O₆, Using Combined Experimental and First Principle Studies. Journal of Physical Chemistry Letters, 2014, 5, 3086-3092.	4.6	81
49	Graphitic Carbon Materials for Advanced Sodiumâ€Ion Batteries. Small Methods, 2019, 3, 1800227.	8.6	81
50	Multiscale factors in designing alkali-ion (Li, Na, and K) transition metal inorganic compounds for next-generation rechargeable batteries. Energy and Environmental Science, 2020, 13, 4406-4449.	30.8	77
51	Novel transition-metal-free cathode for high energy and power sodium rechargeable batteries. Nano Energy, 2014, 4, 97-104.	16.0	71
52	Next-Generation Cathode Materials for Non-aqueous Potassium-Ion Batteries. Trends in Chemistry, 2019, 1, 682-692.	8.5	70
53	Ultraâ€Thin Hollow Carbon Nanospheres for Pseudocapacitive Sodiumâ€Ion Storage. ChemElectroChem, 2015, 2, 359-365.	3.4	66
54	Understanding Origin of Voltage Hysteresis in Conversion Reaction for Na Rechargeable Batteries: The Case of Cobalt Oxides. Advanced Functional Materials, 2016, 26, 5042-5050.	14.9	61

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55	Toward autonomous design and synthesis of novel inorganic materials. Materials Horizons, 2021, 8, 2169-2198.	12.2	61
56	Anti-Site Reordering in LiFePO₄: Defect Annihilation on Charge Carrier Injection. Chemistry of Materials, 2014, 26, 5345-5351.	6.7	52
57	Lithium-excess olivine electrode for lithium rechargeable batteries. Energy and Environmental Science, 2016, 9, 2902-2915.	30.8	49
58	Mechanism of Co3O4/graphene catalytic activity in Liâ€“O2 batteries using carbonate based electrolytes. Electrochimica Acta, 2013, 90, 63-70.	5.2	48
59	Synthetic accessibility and stability rules of NASICONs. Nature Communications, 2021, 12, 5752.	12.8	47
60	Restoration of thermally reduced graphene oxide by atomic-level selenium doping. NPG Asia Materials, 2016, 8, e338-e338.	7.9	45
61	Graphene-Based Hybrid Electrode Material for High-Power Lithium-Ion Batteries. Journal of the Electrochemical Society, 2011, 158, A930.	2.9	44
62	The predicted crystal structure of Li4C6O6, an organic cathode material for Li-ion batteries, from first-principles multi-level computational methods. Energy and Environmental Science, 2011, 4, 4938.	30.8	41
63	Defect-free solvothermally assisted synthesis of microspherical mesoporous LiFePO4/C. RSC Advances, 2013, 3, 3421.	3.6	40
64	Electrochemical and ex-situ analysis on manganese oxide/graphene hybrid anode for lithium rechargeable batteries. Journal of Materials Research, 2011, 26, 2665-2671.	2.6	39
65	Direct Observation of Alternating Octahedral and Prismatic Sodium Layers in O3â€Type Transition Metal Oxides. Advanced Energy Materials, 2020, 10, 2001151.	19.5	39
66	Nano-graphite platelet loaded with LiFePO4 nanoparticles used as the cathode in a high performance Li-ion battery. Carbon, 2012, 50, 1966-1971.	10.3	36
67	Size-selective synthesis of mesoporous LiFePO₄/C microspheres based on nucleation and growth rate control of primary particles. Journal of Materials Chemistry A, 2014, 2, 5922-5927.	10.3	35
68	Investigation of Alkaliâ€Ion (Li, Na, and K) Intercalation in K_xVPO₄F (x â‰¤ 0) Cathode. Advanced Functional Materials, 2019, 29, 1902392.	14.9	35
69	Review on Interface and Interphase Issues in Sulfide Solid-State Electrolytes for All-Solid-State Li-Metal Batteries. Electrochem, 2021, 2, 452-471.	3.3	32
70	Origin of Capacity Degradation of High-Voltage KVPO₄F Cathode. Journal of the Electrochemical Society, 2020, 167, 110555.	2.9	22
71	Factors that Affect the Phase Behavior of Multi-Component Olivine (LiFe_xMn_yCo_{1-x-y}PO₄; 0) Tj ETQq1 1 0.784314 rgBT /O Reaction. Journal of the Electrochemical Society, 2013, 160, A444-A448.	2.9	16
72	Communicationâ€”O3-Type Layered Oxide with a Quaternary Transition Metal Composition for Na-Ion Battery Cathodes: NaTi_{0.25}Fe_{0.25}Co_{0.25}Ni_{0.25}O₂. Journal of the Electrochemical Society, 2017, 164, A3484-A3486.	2.9	16

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73	Intrinsic Nanodomains in Triplite LiFeSO₄F and Its Implication in Lithiumâ€Ion Diffusion. Advanced Energy Materials, 2018, 8, 1701408.	19.5	16
74	Insights into Layered Oxide Cathodes for Rechargeable Batteries. Molecules, 2021, 26, 3173.	3.8	16
75	Computational and experimental search for potential polyanionic K-ion cathode materials. Journal of Materials Chemistry A, 2021, 9, 18564-18575.	10.3	15
76	Na⁺ Redistribution by Electrochemical Na⁺/K⁺ Exchange in Layered Na_xNi₂SbO₆. Chemistry of Materials, 2020, 32, 4312-4323.	6.7	14
77	Toward the Development of a High-Voltage Mg Cathode Using a Chromium Sulfide Host. , 2021, 3, 1213-1220.		12
78	Invited paper: Preparation and electrochemical characterization of doped spinel LiMn1.88Ge0.1Li0.02O4 cathode material. Electronic Materials Letters, 2011, 7, 105-108.	2.2	9
79	Understanding of electrochemical K+/Na+ exchange mechanisms in layered oxides. Energy Storage Materials, 2022, 47, 105-112.	18.0	8
80	Solid-State Calcium-Ion Diffusion in Ca_{1.5}Ba_{0.5}Si₅O₃N₆. Chemistry of Materials, 2022, 34, 128-139.	6.7	7
81	Energy Storage: Sodium Storage Behavior in Natural Graphite using Ether-based Electrolyte Systems (Adv. Funct. Mater. 4/2015). Advanced Functional Materials, 2015, 25, 652-652.	14.9	3
82	Highly Laminated Electrospun ZnO Nanofibrous Film on the Transparent Conducting Oxide for Photovoltaic Device. Journal of Electrochemical Science and Technology, 2012, 3, 68-71.	2.2	2
83	Multiscale Multiparadigm in Silico Design of New Materials for Li-ion Batteries. ECS Meeting Abstracts, 2012, , .	0.0	0
84	Lithiumâ€Ion Batteries: Organic Nanohybrids for Fast and Sustainable Energy Storage (Adv. Mater.) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 5	21.0	0
85	The 2018 Colin Garfield Fink Postdoctoral Summer Fellowship â€“ Summary Report: Investigation of Alkali Ion (Li, Na, and K) Intercalation in KxVPO4F Host Material. Electrochemical Society Interface, 2018, 27, 78-79.	0.4	0
86	â€œNa Redistributionâ€•Induced By K Intercalation during Na/K Ion Exchange in a Layered Oxide Cathode. ECS Meeting Abstracts, 2021, MA2021-01, 358-358.	0.0	0
87	Highly Laminated Electrospun ZnO Nanofibrous Film on the Transparent Conducting Oxide for Photovoltaic Device. Journal of Electrochemical Science and Technology, 2012, 3, 68-71.	2.2	0
88	High Energy Polyanion Cathode for K-Ion Batteries: KVPO4F. ECS Meeting Abstracts, 2020, MA2020-01, 210-210.	0.0	0
89	The Interplay between Thermodynamics and Kinetics in the Solid-State Synthesis of Layered Oxides. ECS Meeting Abstracts, 2020, MA2020-02, 313-313.	0.0	0
90	(Invited) How Does Intercalation Ion Species Determine the Electrochemical Properties of Cathode Materials for Rechargeable Batteries?. ECS Meeting Abstracts, 2020, MA2020-02, 169-169.	0.0	0