Jang-Yeon Hwang

List of Publications by Year
in descending order

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Version: 2024-02-01

95 papers	11,669 citations	38742 50 h-index	34986 98 g-index
98 all docs	98 docs citations	98 times ranked	10755 citing authors

#	Article	IF	Citations
1	Sodium-ion batteries: present and future. Chemical Society Reviews, 2017, 46, 3529-3614.	38.1	3,436
2	Recent Progress in Rechargeable Potassium Batteries. Advanced Functional Materials, 2018, 28, 1802938.	14.9	518
3	Highâ€Energy, Highâ€Rate, Lithiumâ€“Sulfur Batteries: Synergetic Effect of Hollow TiO₂â€Webbed Carbon Nanotubes and a Dual Functional Carbonâ€Paper Interlayer. Advanced Energy Materials, 2016, 6, 1501480.	19.5	308
4	Manganese and Vanadium Oxide Cathodes for Aqueous Rechargeable Zinc-Ion Batteries: A Focused View on Performance, Mechanism, and Developments. ACS Energy Letters, 2020, 5, 2376-2400.	17.4	303
5	Degradation Mechanism of Ni-Enriched NCA Cathode for Lithium Batteries: Are Microcracks Really Critical?. ACS Energy Letters, 2019, 4, 1394-1400.	17.4	290
6	High-energy-density lithium-ion battery using a carbon-nanotubeâ€“Si composite anode and a compositionally graded Li[Ni_{0.85}Co_{0.05}Mn_{0.10}]O₂ cathode. Energy and Environmental Science, 2016, 9, 2152-2158.	30.8	269
7	Nano/Microstructured Siliconâ€“Graphite Composite Anode for High-Energy-Density Li-Ion Battery. ACS Nano, 2019, 13, 2624-2633.	14.6	219
8	New Insights on Graphite Anode Stability in Rechargeable Batteries: Li Ion Coordination Structures Prevail over Solid Electrolyte Interphases. ACS Energy Letters, 2018, 3, 335-340.	17.4	217
9	High Electrochemical Performances of Microsphere C-TiO₂ Anode for Sodium-Ion Battery. ACS Applied Materials & Interfaces, 2014, 6, 11295-11301.	8.0	213
10	Radially aligned hierarchical columnar structure as a cathode material for high energy density sodium-ion batteries. Nature Communications, 2015, 6, 6865.	12.8	210
11	Recent research trends in Liâ€“S batteries. Journal of Materials Chemistry A, 2018, 6, 11582-11605.	10.3	199
12	Transition metal carbide-based materials: synthesis and applications in electrochemical energy storage. Journal of Materials Chemistry A, 2016, 4, 10379-10393.	10.3	184
13	Na Storage Capability Investigation of a Carbon Nanotube-Encapsulated Fe_{1â€“x}S Composite. ACS Energy Letters, 2017, 2, 364-372.	17.4	176
14	High Capacity O3-Type Na[Li_{0.05}(Ni_{0.25}Fe_{0.25}Mn_{0.5})_{0.95}]O₂ Cathode for Sodium Ion Batteries. Chemistry of Materials, 2014, 26, 6165-6171.	9.0	175
15	Nano/Microstructured Siliconâ€“Carbon Hybrid Composite Particles Fabricated with Corn Starch Biowaste as Anode Materials for Li-Ion Batteries. Nano Letters, 2020, 20, 625-635.	9.1	164
16	New Insight on the Role of Electrolyte Additives in Rechargeable Lithium Ion Batteries. ACS Energy Letters, 2019, 4, 2613-2622.	17.4	160
17	Development of P3-K_{0.69}CrO₂ as an ultra-high-performance cathode material for K-ion batteries. Energy and Environmental Science, 2018, 11, 2821-2827.	30.8	157
18	Rational design of silicon-based composites for high-energy storage devices. Journal of Materials Chemistry A, 2016, 4, 5366-5384.	10.3	154

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19	A New P2â€Type Layered Oxide Cathode with Extremely High Energy Density for Sodiumâ€Ion Batteries. Advanced Energy Materials, 2019, 9, 1803346.	19.5	143
20	Comparison between Na-Ion and Li-Ion Cells: Understanding the Critical Role of the Cathodes Stability and the Anodes Pretreatment on the Cells Behavior. ACS Applied Materials & Interfaces, 2016, 8, 1867-1875.	8.0	138
21	Designing a Highâ€Performance Lithiumâ€“Sulfur Batteries Based on Layered Double Hydroxidesâ€“Carbon Nanotubes Composite Cathode and a Dualâ€Functional Grapheneâ€“Polypropyleneâ€“Al₂O₃ Separator. Advanced Functional Materials, 2018, 28, 1704294.	14.9	135
22	Electrolyte Engineering Enables High Stability and Capacity Alloying Anodes for Sodium and Potassium Ion Batteries. ACS Energy Letters, 2020, 5, 766-776.	17.4	134
23	Customizing a Liâ€“metal battery that survives practical operating conditions for electric vehicle applications. Energy and Environmental Science, 2019, 12, 2174-2184.	30.8	130
24	Ultrafast sodium storage in anatase TiO2 nanoparticles embedded on carbon nanotubes. Nano Energy, 2015, 16, 218-226.	16.0	128
25	K0.54[Co0.5Mn0.5]O2: New cathode with high power capability for potassium-ion batteries. Nano Energy, 2019, 61, 284-294.	16.0	120
26	Adiponitrile (C₆H₈N₂): A New Biâ€Functional Additive for Highâ€Performance Liâ€Metal Batteries. Advanced Functional Materials, 2019, 29, 1902496.	14.9	115
27	Role of Liâ€Ion Depletion on Electrode Surface: Underlying Mechanism for Electrodeposition Behavior of Lithium Metal Anode. Advanced Energy Materials, 2020, 10, 2002390.	19.5	115
28	Toward the Sustainable Lithium Metal Batteries with a New Electrolyte Solvation Chemistry. Advanced Energy Materials, 2020, 10, 2000567.	19.5	111
29	A comprehensive study of the role of transition metals in O3-type layered Na[Ni_xCo_yMn_z]O₂ (x = 1/3, 0.5, 0.6, and 0.8) cathodes for sodium-ion batteries. Journal of Materials Chemistry A, 2016, 4, 17952-17959.	10.3	110
30	Resolving the degradation pathways of the O3-type layered oxide cathode surface through the nano-scale aluminum oxide coating for high-energy density sodium-ion batteries. Journal of Materials Chemistry A, 2017, 5, 23671-23680.	10.3	107
31	High-Performance Lithiumâ€“Sulfur Batteries with a Self-Assembled Multiwall Carbon Nanotube Interlayer and a Robust Electrodeâ€“Electrolyte Interface. ACS Applied Materials & Interfaces, 2016, 8, 983-987.	8.0	104
32	Electrochemical Properties of Sulfurized-Polyacrylonitrile Cathode for Lithiumâ€“Sulfur Batteries: Effect of Polyacrylic Acid Binder and Fluoroethylene Carbonate Additive. Journal of Physical Chemistry Letters, 2017, 8, 5331-5337.	4.6	101
33	Toward High-Safety Potassiumâ€“Sulfur Batteries Using a Potassium Polysulfide Catholyte and Metal-Free Anode. ACS Energy Letters, 2018, 3, 540-541.	17.4	99
34	An Empirical Model for the Design of Batteries with High Energy Density. ACS Energy Letters, 2020, 5, 807-816.	17.4	97
35	Simultaneous MgO coating and Mg doping of Na[Ni_{0.5}Mn_{0.5}]O₂ cathode: facile and customizable approach to high-voltage sodium-ion batteries. Journal of Materials Chemistry A, 2018, 6, 16854-16862.	10.3	93
36	High performance potassiumâ€“sulfur batteries based on a sulfurized polyacrylonitrile cathode and polyacrylic acid binder. Journal of Materials Chemistry A, 2018, 6, 14587-14593.	10.3	89

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37	Stabilization of Lithium-Metal Batteries Based on the in Situ Formation of a Stable Solid Electrolyte Interphase Layer. ACS Applied Materials & Interfaces, 2018, 10, 17985-17993.	8.0	82
38	Capacity Degradation Mechanism and Cycling Stability Enhancement of AlF₃-Coated Nanorod Gradient Na[Ni_{0.65}Co_{0.08}Mn_{0.27}]O₂ Cathode for Sodium-Ion Batteries. ACS Nano, 2018, 12, 12912-12922.	14.6	82
39	Improved electrochemical performance of boron-doped carbon-coated lithium titanate as an anode material for sodium-ion batteries. Journal of Materials Chemistry A, 2017, 5, 2802-2810.	10.3	79
40	Superior lithium/potassium storage capability of nitrogen-rich porous carbon nanosheets derived from petroleum coke. Journal of Materials Chemistry A, 2018, 6, 12551-12558.	10.3	79
41	Novel Cathode Materials for Naâ€Ion Batteries Composed of Spokeâ€Like Nanorods of Na[Ni_{0.61}Co_{0.12}Mn_{0.27}]O₂ Assembled in Spherical Secondary Particles. Advanced Functional Materials, 2016, 26, 8083-8093.	14.9	78
42	Engineering Sodium-Ion Solvation Structure to Stabilize Sodium Anodes: Universal Strategy for Fast-Charging and Safer Sodium-Ion Batteries. Nano Letters, 2020, 20, 3247-3254.	9.1	78
43	Additives Engineered Nonflammable Electrolyte for Safer Potassium Ion Batteries. Advanced Functional Materials, 2020, 30, 2001934.	14.9	77
44	A 4 V Class Potassium Metal Battery with Extremely Low Overpotential. ACS Nano, 2019, 13, 9306-9314.	14.6	76
45	Minimizing the Electrolyte Volume in Liâ€“S Batteries: A Step Forward to High Gravimetric Energy Density. Advanced Energy Materials, 2018, 8, 1801560.	19.5	68
46	Carbon-Free TiO₂ Microspheres as Anode Materials for Sodium Ion Batteries. ACS Energy Letters, 2019, 4, 494-501.	17.4	63
47	A new P2-type layered oxide cathode with superior full-cell performances for K-ion batteries. Journal of Materials Chemistry A, 2019, 7, 21362-21370.	10.3	61
48	Effect of nickel and iron on structural and electrochemical properties of O3 type layer cathode materials for sodium-ion batteries. Journal of Power Sources, 2016, 324, 106-112.	7.8	58
49	Chromium doping into NASICON-structured Na3V2(PO4)3 cathode for high-power Na-ion batteries. Chemical Engineering Journal, 2021, 422, 130052.	12.7	58
50	Potassium vanadate as a new cathode material for potassium-ion batteries. Journal of Power Sources, 2019, 432, 24-29.	7.8	53
51	High-performance Ti-doped O3-type Na[Tix(Ni0.6Co0.2Mn0.2)1-x]O2 cathodes for practical sodium-ion batteries. Journal of Power Sources, 2019, 422, 1-8.	7.8	51
52	Graphene Decorated by Indium Sulfide Nanoparticles as High-Performance Anode for Sodium-Ion Batteries. ACS Applied Materials & Interfaces, 2017, 9, 23723-23730.	8.0	48
53	Multidimensional Na₄VMn_{0.9}Cu_{0.1}(PO₄)₃/C cotton-candy cathode materials for high energy Na-ion batteries. Journal of Materials Chemistry A, 2020, 8, 12055-12068.	10.3	48
54	Multiwalled Carbon Nanotubes Anode in Lithium-Ion Battery with LiCoO₂, Li[Ni_{1/3}Co_{1/3}Mn_{1/3}]O₂, and LiFe_{1/4}Mn_{1/2}Co_{1/4}PO₄ Cathodes. ACS Sustainable Chemistry and Engineering, 2018, 6, 3225-3232.	6.7	47

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55	High-energy O3-Na_{1â^'2x}Ca_x[Ni_{0.5}Mn_{0.5}]O₂ cathodes for long-life sodium-ion batteries. Journal of Materials Chemistry A, 2020, 8, 13776-13786.	10.3	46
56	Microsphere Na_{0.65}[Ni_{0.17}Co_{0.11}Mn_{0.72}]O₂ Cathode Material for High-Performance Sodium-Ion Batteries. ACS Applied Materials & Interfaces, 2017, 9, 44534-44541.	8.0	46
57	Micro-Intertexture Carbon-Free Iron Sulfides as Advanced High Tap Density Anodes for Rechargeable Batteries. ACS Applied Materials & Interfaces, 2017, 9, 39416-39424.	8.0	45
58	A novel reduced graphene oxide based absorber for augmenting the water yield and thermal performance of solar desalination unit. Materials Letters, 2021, 286, 128867.	2.6	45
59	Initial investigation and evaluation of potassium metal as an anode for rechargeable potassium batteries. Journal of Materials Chemistry A, 2020, 8, 16718-16737.	10.3	44
60	Cationic and transition metal co-substitution strategy of O3-type NaCrO2 cathode for high-energy sodium-ion batteries. Energy Storage Materials, 2021, 41, 183-195.	18.0	42
61	Long-Lasting Solid Electrolyte Interphase for Stable Li-Metal Batteries. ACS Energy Letters, 2021, 6, 2153-2161.	17.4	41
62	Quaternary Transition Metal Oxide Layered Framework: O3-Type Na[Ni_{0.32}Fe_{0.13}Co_{0.15}Mn_{0.40}]O₂ Cathode Material for High-Performance Sodium-Ion Batteries. Journal of Physical Chemistry C, 2018, 122, 13500-13507.	3.1	39
63	Advancement in graphene-based nanocomposites as high capacity anode materials for sodium-ion batteries. Journal of Materials Chemistry A, 2021, 9, 2628-2661.	10.3	39
64	Tungsten Oxide/Zirconia as a Functional Polysulfide Mediator for High-Performance Lithiumâ€“Sulfur Batteries. ACS Energy Letters, 2020, 5, 3168-3175.	17.4	38
65	Nano-compacted Li₂S/Graphene Composite Cathode for High-Energy Lithiumâ€“Sulfur Batteries. ACS Energy Letters, 2019, 4, 2787-2795.	17.4	37
66	Sustainable Encapsulation Strategy of Silicon Nanoparticles in Microcarbon Sphere for High-Performance Lithium-Ion Battery Anode. ACS Sustainable Chemistry and Engineering, 2020, 8, 14150-14158.	6.7	37
67	Secondary transmission of SARS-CoV-2 through wastewater: Concerns and tactics for treatment to effectively control the pandemic. Journal of Environmental Management, 2021, 290, 112668.	7.8	36
68	Trimethylsilyl azide (C3H9N3Si): a highly efficient additive for tailoring fluoroethylene carbonate (FEC) based electrolytes for Li-metal batteries. Journal of Materials Chemistry A, 2019, 7, 13441-13448.	10.3	34
69	Augmented performance of solar desalination unit by utilization of nano-silicon coated glass cover for promoting drop-wise condensation. Desalination, 2021, 515, 115191.	8.2	34
70	Stable Solid Electrolyte Interphase for Long-Life Potassium Metal Batteries. ACS Energy Letters, 2022, 7, 401-409.	17.4	32
71	Controlling the Wettability between Freestanding Electrode and Electrolyte for High Energy Density Lithium-Sulfur Batteries. Journal of the Electrochemical Society, 2018, 165, A5006-A5013.	2.9	31
72	A new material discovery platform of stable layered oxide cathodes for K-ion batteries. Energy and Environmental Science, 2021, 14, 5864-5874.	30.8	30

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73	A Scaledâ€Up Lithium (Ion)â€Sulfur Battery: Newly Faced Problems and Solutions. Advanced Materials Technologies, 2016, 1, 1600052.	5.8	29
74	Highly wrinkled carbon tubes as an advanced anode for K-ion full batteries. Journal of Materials Chemistry A, 2019, 7, 20675-20682.	10.3	29
75	Recent Progress in Electrolyte Development and Design Strategies for Nextâ€Generation Potassiumâ€Ion Batteries. Batteries and Supercaps, 2021, 4, 1428-1450.	4.7	29
76	Multiscale Understanding of Covalently Fixed Sulfurâ€“Polyacrylonitrile Composite as Advanced Cathode for Metalâ€“Sulfur Batteries. Advanced Science, 2021, 8, e2101123.	11.2	27
77	Layered K_{0.28}MnO₂Â·0.15H₂O as a Cathode Material for Potassium-Ion Intercalation. ACS Applied Materials & Interfaces, 2019, 11, 43312-43319.	8.0	25
78	C-Na3V1.96Fe0.04(PO4)3/Fe2P nanoclusters with stable charge-transfer interface for high-power sodium ion batteries. Chemical Engineering Journal, 2021, 404, 126974.	12.7	25
79	Critical Role of Functional Groups Containing N, S, and O on Graphene Surface for Stable and Fast Charging Liâ€S Batteries. Small, 2021, 17, e2007242.	10.0	23
80	Triggering the theoretical capacity of Na1.1V3O7.9 nanorod cathode by polypyrrole coating for high-energy zinc-ion batteries. Chemical Engineering Journal, 2022, 446, 137069.	12.7	23
81	Density Functional Theory Investigation of Mixed Transition Metals in Olivine and Tavorite Cathode Materials for Li-Ion Batteries. ACS Applied Materials & Interfaces, 2020, 12, 16376-16386.	8.0	22
82	Potassiumâ€“Oxygen Batteries: Significance, Challenges, and Prospects. Journal of Physical Chemistry Letters, 2020, 11, 7849-7856.	4.6	18
83	High lithium storage properties in a manganese sulfide anode via an intercalation-cum-conversion reaction. Journal of Materials Chemistry A, 2020, 8, 17537-17549.	10.3	15
84	Geometrical engineering of a SPANâ€“graphene composite cathode for practical Liâ€“S batteries. Journal of Materials Chemistry A, 2022, 10, 10844-10853.	10.3	15
85	Investigation of superior sodium storage and reversible Na₂S conversion reactions in a porous NiS₂@C composite using in operando X-ray diffraction. Journal of Materials Chemistry A, 2020, 8, 24401-24407.	10.3	14
86	Recent Developments and Future Challenges in Designing Rechargeable Potassium-Sulfur and Potassium-Selenium Batteries. Energies, 2020, 13, 2791.	3.1	13
87	Validating the Structural (In)stability of P3- and P2-Na_{0.67}Mg_{0.1}Mn_{0.9}O₂-Layered Cathodes for Sodium-Ion Batteries: A Time-Decisive Approach. ACS Applied Materials & Interfaces, 2021, 13, 53877-53891.	8.0	10
88	A review on carbon nanomaterials for <scp>Kâ€ion</scp> battery anode: Progress and perspectives. International Journal of Energy Research, 2022, 46, 4033-4070.	4.5	9
89	Microwave-Assisted Rapid Synthesis of NH4V4O10 Layered Oxide: A High Energy Cathode for Aqueous Rechargeable Zinc Ion Batteries. Nanomaterials, 2021, 11, 1905.	4.1	8
90	A case study of SARS-CoV-2 transmission behavior in a severely air-polluted city (Delhi, India) and the potential usage of graphene based materials for filtering air-pollutants and controlling/monitoring the COVID-19 pandemic. Environmental Sciences: Processes and Impacts, 2021, 23, 923-946.	3.5	7

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91	Recent Achievements in Experimental and Computational Studies of Positive Electrode Materials for Nonaqueous Ca- and Al-Ion Batteries. Journal of Physical Chemistry C, 2022, 126, 9209-9227.	3.1	5
92	Investigation of K-ion storage performances in a bismuth sulfide-carbon nanotube composite anode. RSC Advances, 2020, 10, 6536-6539.	3.6	4
93	Effect of a self-assembling La₂(Ni_{0.5}Li_{0.5})O₄ and amorphous garnet-type solid electrolyte composite on a layered cathode material in all-solid-state batteries. RSC Advances, 2022, 12, 14209-14222.	3.6	3
94	Li-S Batteries: A Scaled-Up Lithium (Ion)-Sulfur Battery: Newly Faced Problems and Solutions (Adv.) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50	5.8	2
95	Sulfurized Carbon Composite with Unprecedentedly High Tap Density for Sodium Storage. Advanced Energy Materials, 2022, 12, .	19.5	2