

Baek Woon-kyu

List of Publications by Year in descending order

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Version: 2024-02-01

105
papers

10,910
citations

53751

45
h-index

30058

103
g-index

108
all docs

108
docs citations

108
times ranked

15629
citing authors

#	ARTICLE	IF	CITATIONS
1	A soft, wearable microfluidic device for the capture, storage, and colorimetric sensing of sweat. <i>Science Translational Medicine</i> , 2016, 8, 366ra165.	5.8	933
2	Carbon coated porous nickel phosphides nanoplates for highly efficient oxygen evolution reaction. <i>Energy and Environmental Science</i> , 2016, 9, 1246-1250.	15.6	839
3	Assembly of micro/nanomaterials into complex, three-dimensional architectures by compressive buckling. <i>Science</i> , 2015, 347, 154-159.	6.0	745
4	Formation of Ni@Co@MoS ₂ Nanoboxes with Enhanced Electrocatalytic Activity for Hydrogen Evolution. <i>Advanced Materials</i> , 2016, 28, 9006-9011.	11.1	511
5	Structure-designed synthesis of FeS ₂ @C yolk-shell nanoboxes as a high-performance anode for sodium-ion batteries. <i>Energy and Environmental Science</i> , 2017, 10, 1576-1580.	15.6	475
6	Sb@C coaxial nanotubes as a superior long-life and high-rate anode for sodium ion batteries. <i>Energy and Environmental Science</i> , 2016, 9, 2314-2318.	15.6	414
7	Soft network composite materials with deterministic and bio-inspired designs. <i>Nature Communications</i> , 2015, 6, 6566.	5.8	392
8	Metal Organic Framework Derived Materials: Progress and Prospects for the Energy Conversion and Storage. <i>Advanced Materials</i> , 2018, 30, e1705146.	11.1	376
9	Hierarchical MoS ₂ tubular structures internally wired by carbon nanotubes as a highly stable anode material for lithium-ion batteries. <i>Science Advances</i> , 2016, 2, e1600021.	4.7	362
10	Battery-free, stretchable optoelectronic systems for wireless optical characterization of the skin. <i>Science Advances</i> , 2016, 2, e1600418.	4.7	336
11	Soft, curved electrode systems capable of integration on the auricle as a persistent brain-computer interface. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015, 112, 3920-3925.	3.3	319
12	Advantageous crystalline-amorphous phase boundary for enhanced electrochemical water oxidation. <i>Energy and Environmental Science</i> , 2019, 12, 2443-2454.	15.6	315
13	Nickel cobalt phosphides quasi-hollow nanocubes as an efficient electrocatalyst for hydrogen evolution in alkaline solution. <i>Chemical Communications</i> , 2016, 52, 1633-1636.	2.2	271
14	Self-Supported Nickel Iron Layered Double Hydroxide-Nickel Selenide Electrocatalyst for Superior Water Splitting Activity. <i>ACS Applied Materials & Interfaces</i> , 2017, 9, 33766-33774.	4.0	257
15	Miniaturized Battery-Free Wireless Systems for Wearable Pulse Oximetry. <i>Advanced Functional Materials</i> , 2017, 27, 1604373.	7.8	248
16	Construction of hybrid bowl-like structures by anchoring NiO nanosheets on flat carbon hollow particles with enhanced lithium storage properties. <i>Energy and Environmental Science</i> , 2015, 8, 1707-1711.	15.6	215
17	Boosting Electrochemical Water Oxidation with Metal Hydroxide Carbonate Templated Prussian Blue Analogues. <i>Angewandte Chemie - International Edition</i> , 2018, 57, 1241-1245.	7.2	180
18	TiO ₂ as an active or supplemental material for lithium batteries. <i>Journal of Materials Chemistry A</i> , 2016, 4, 14-31.	5.2	166

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19	Etching a Ca Box: A Novel Strategy to Synthesize Unique Yolk-Shelled Fe_3O_4 @ Carbon with an Ultralong Cycling Life for Lithium Storage. <i>Advanced Energy Materials</i> , 2016, 6, 1502318.	10.2	158
20	Porosity-Controlled TiNb_2O_7 Microspheres with Partial Nitridation as A Practical Negative Electrode for High-Power Lithium-Ion Batteries. <i>Advanced Energy Materials</i> , 2015, 5, 1401945.	10.2	153
21	Miniaturized Flexible Electronic Systems with Wireless Power and Near-Field Communication Capabilities. <i>Advanced Functional Materials</i> , 2015, 25, 4761-4767.	7.8	148
22	In -Plane Deformation Mechanics for Highly Stretchable Electronics. <i>Advanced Materials</i> , 2017, 29, 1604989.	11.1	141
23	Soft, thin skin-mounted power management systems and their use in wireless thermography. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2016, 113, 6131-6136.	3.3	139
24	Formation of Co_3O_4 microframes from MOFs with enhanced electrochemical performance for lithium storage and water oxidation. <i>Chemical Communications</i> , 2016, 52, 6269-6272.	2.2	137
25	Amorphous Nickel-Iron Borophosphate for a Robust and Efficient Oxygen Evolution Reaction. <i>Advanced Energy Materials</i> , 2021, 11, 2100624.	10.2	120
26	Copper Nitride Nanowires Printed Li with Stable Cycling for Li Metal Batteries in Carbonate Electrolytes. <i>Advanced Materials</i> , 2020, 32, e1905573.	11.1	105
27	A Ge inverse opal with porous walls as an anode for lithium ion batteries. <i>Energy and Environmental Science</i> , 2012, 5, 9028.	15.6	104
28	N-doped graphene layers encapsulated NiFe alloy nanoparticles derived from MOFs with superior electrochemical performance for oxygen evolution reaction. <i>Scientific Reports</i> , 2016, 6, 34004.	1.6	104
29	Synergistic Ultrathin Functional Polymer-Coated Carbon Nanotube Interlayer for High Performance Lithium-Sulfur Batteries. <i>ACS Applied Materials & Interfaces</i> , 2016, 8, 20092-20099.	4.0	102
30	Quantum Dot Based Heterostructures for Unassisted Photoelectrochemical Hydrogen Generation. <i>Advanced Energy Materials</i> , 2013, 3, 176-182.	10.2	101
31	Metastable Two-Dimensional Materials for Electrocatalytic Energy Conversions. <i>Accounts of Materials Research</i> , 2021, 2, 559-573.	5.9	97
32	Sb-based electrode materials for rechargeable batteries. <i>Journal of Materials Chemistry A</i> , 2018, 6, 8159-8193.	5.2	95
33	Porous TiNb_2O_7 nanofibers decorated with conductive $\text{Ti}^{1-x}\text{Nb}_x\text{N}$ bumps as a high power anode material for Li-ion batteries. <i>Journal of Materials Chemistry A</i> , 2015, 3, 8590-8596.	5.2	90
34	Polyaniline/Polyoxometalate Hybrid Nanofibers as Cathode for Lithium Ion Batteries with Improved Lithium Storage Capacity. <i>Journal of Physical Chemistry C</i> , 2013, 117, 17376-17381.	1.5	86
35	Synergistic protective effect of a BN-carbon separator for highly stable lithium sulfur batteries. <i>NPG Asia Materials</i> , 2017, 9, e375-e375.	3.8	85
36	Electrochemical Properties of Si-Ge Heterostructures as an Anode Material for Lithium Ion Batteries. <i>Advanced Functional Materials</i> , 2014, 24, 1458-1464.	7.8	78

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37	Facile <i>ex situ</i> formation of a LiF ⁻ polymer composite layer as an artificial SEI layer on Li metal by simple roll-press processing for carbonate electrolyte-based Li metal batteries. <i>Journal of Materials Chemistry A</i> , 2020, 8, 17229-17237.	5.2	63
38	Synthesis of hierarchical porous TiNb ₂ O ₇ nanotubes with controllable porosity and their application in high power Li-ion batteries. <i>Journal of Materials Chemistry A</i> , 2017, 5, 6958-6965.	5.2	62
39	One-Dimensional Silicon Nanostructures for Li Ion Batteries. <i>Journal of Physical Chemistry Letters</i> , 2014, 5, 720-731.	2.1	61
40	Patterned oxide semiconductor by electrohydrodynamic jet printing for transparent thin film transistors. <i>Applied Physics Letters</i> , 2012, 100, .	1.5	60
41	MXene Analogue: A 2D Nitridene Solid Solution for High-Rate Hydrogen Production. <i>Angewandte Chemie - International Edition</i> , 2022, 61, .	7.2	56
42	Ferromagnetic, Folded Electrode Composite as a Soft Interface to the Skin for Long-Term Electrophysiological Recording. <i>Advanced Functional Materials</i> , 2016, 26, 7281-7290.	7.8	53
43	LiCl-LiI molten salt electrolyte with bismuth-lead positive electrode for liquid metal battery. <i>Journal of Power Sources</i> , 2018, 377, 87-92.	4.0	50
44	Flash-induced reduced graphene oxide as a Sn anode host for high performance sodium ion batteries. <i>Journal of Materials Chemistry A</i> , 2016, 4, 18306-18313.	5.2	47
45	Current Status of Self-Supported Catalysts for Robust and Efficient Water Splitting for Commercial Electrolyzer. <i>ChemCatChem</i> , 2019, 11, 5898-5912.	1.8	47
46	Electrospun Sn-doped LiTi ₂ (PO ₄) ₃ /C nanofibers for ultra-fast charging and discharging. <i>Journal of Materials Chemistry A</i> , 2015, 3, 10395-10402.	5.2	43
47	Encapsulation of S/SWNT with PANI Web for Enhanced Rate and Cycle Performance in Lithium Sulfur Batteries. <i>Scientific Reports</i> , 2015, 5, 8946.	1.6	42
48	Partially reduced SnO ₂ nanoparticles anchored on carbon nanofibers for high performance sodium-ion batteries. <i>Electrochemistry Communications</i> , 2016, 72, 91-95.	2.3	42
49	Microstructural control of new intercalation layered titanoniobates with large and reversible d-spacing for easy Na ⁺ ion uptake. <i>Science Advances</i> , 2017, 3, e1700509.	4.7	42
50	Materials and Wireless Microfluidic Systems for Electronics Capable of Chemical Dissolution on Demand. <i>Advanced Functional Materials</i> , 2015, 25, 1338-1343.	7.8	41
51	WO ₃ /W:BiVO ₄ /BiVO ₄ graded photoabsorber electrode for enhanced photoelectrocatalytic solar light driven water oxidation. <i>Physical Chemistry Chemical Physics</i> , 2017, 19, 4648-4655.	1.3	38
52	Epitaxial Growth of Nanostructured Li ₂ Se on Lithium Metal for All Solid-State Batteries. <i>Advanced Science</i> , 2021, 8, e2004204.	5.6	36
53	Two-dimensional Nafion nanoweb anion-shield for improved electrochemical performances of lithium-sulfur batteries. <i>Journal of Materials Chemistry A</i> , 2016, 4, 11203-11206.	5.2	35
54	In Situ Cross-linked Carboxymethyl Cellulose-Polyethylene Glycol Binder for Improving the Long-Term Cycle Life of Silicon Anodes in Li Ion Batteries. <i>Industrial & Engineering Chemistry Research</i> , 2019, 58, 8123-8130.	1.8	35

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55	Three-dimensional Gd-doped TiO ₂ fibrous photoelectrodes for efficient visible light-driven photocatalytic performance. RSC Advances, 2014, 4, 11750-11757.	1.7	31
56	Thermal Fatigue Behavior of Air-Plasma Sprayed Thermal Barrier Coating with Bond Coat Species in Cyclic Thermal Exposure. Materials, 2013, 6, 3387-3403.	1.3	27
57	Size-dependent interactions of silica nanoparticles with a flat silica surface. Journal of Colloid and Interface Science, 2016, 483, 177-184.	5.0	25
58	Boosting Electrochemical Water Oxidation with Metal Hydroxide Carbonate Templated Prussian Blue Analogues. Angewandte Chemie, 2018, 130, 1255-1259.	1.6	25
59	Toward High Rate Performance Solid-State Batteries. Advanced Energy Materials, 2022, 12, .	10.2	24
60	Lithium salt of carboxymethyl cellulose as an aqueous binder for thick graphite electrode in lithium ion batteries. Macromolecular Research, 2015, 23, 719-725.	1.0	23
61	Partial Dehydration in Hydrated Tungsten Oxide Nanoplates Leads to Excellent and Robust Bifunctional Oxygen Reduction and Hydrogen Evolution Reactions in Acidic Media. ACS Sustainable Chemistry and Engineering, 2020, 8, 9507-9518.	3.2	23
62	Stable artificial solid electrolyte interphase with lithium selenide and lithium chloride for dendrite-free lithium metal anodes. Journal of Power Sources, 2021, 506, 230158.	4.0	21
63	Nanohybridization of Low-Dimensional Nanomaterials: Synthesis, Classification, and Application. Critical Reviews in Solid State and Materials Sciences, 2013, 38, 1-56.	6.8	20
64	Electrospun porous lithium manganese phosphate-carbon nanofibers as a cathode material for lithium ion batteries. Journal of Materials Chemistry A, 2015, 3, 17713-17720.	5.2	20
65	Ce ³⁺ -enriched core-shell ceria nanoparticles for silicate adsorption. Journal of Materials Research, 2017, 32, 2829-2836.	1.2	20
66	Lithiophilic surface treatment of metal- and metallic compound-based frameworks by gas nitriding for lithium metal batteries. Journal of Power Sources, 2020, 477, 228776.	4.0	20
67	Ion-Conducting Channel Implanted Anode Matrix for All-Solid-State Batteries with High Rate Capability and Stable Anode/Solid Electrolyte Interface. Advanced Energy Materials, 2021, 11, 2102045.	10.2	19
68	Surface-Coverage-Dependent Cycle Stability of Core-Shell Nanostructured Electrodes for Use in Lithium Ion Batteries. Advanced Energy Materials, 2014, 4, 1300472.	10.2	18
69	Li ₂ MnSiO ₄ /carbon nanofiber cathodes for Li-ion batteries. Ionics, 2014, 20, 1351-1359.	1.2	18
70	Tailoring the Ratio of A-Site Cations in Pr _{1-x} Nd _x BaCo _{1.6} Fe _{0.4} O _{5+δ} to Promote the Higher Oxygen Reduction Reaction Activity for Low-Temperature Solid Oxide Fuel Cells. Chemistry of Materials, 2020, 32, 3841-3849.	3.2	17
71	Microstructure Evolution and Interface Stability of Thermal Barrier Coatings with Vertical Type Cracks in Cyclic Thermal Exposure. Journal of Thermal Spray Technology, 2013, 22, 671-679.	1.6	15
72	Stackable, three dimensional carbon-metal oxide composite for high performance supercapacitors. Journal of Materials Chemistry A, 2015, 3, 20459-20464.	5.2	15

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73	Facile Growth of Metal-Rich Cu _{1.75} S and Cu _{1.8} S Microspheres Assembled with Mesoporous Nanosheets and Their Application in Na-Ion Batteries. <i>Crystal Growth and Design</i> , 2020, 20, 3325-3333.	1.4	15
74	Enhanced Electrochemical Properties of LiFePO ₄ Electrodes with Carboxylated Poly(vinyl) Tj ETQq0 0 0 rgBT /Overlock 10 T Chemistry C, 2011, 115, 16242-16246.	1.5	14
75	Si nanotubes array sheathed with SiN/SiOxNy layer as an anode material for lithium ion batteries. <i>Journal of Electroceramics</i> , 2014, 32, 66-71.	0.8	13
76	Effects of metallic contaminant type and concentration on photovoltaic performance degradation of p-type silicon solar cells. <i>Journal of the Korean Physical Society</i> , 2013, 63, 47-52.	0.3	12
77	LEGO-like assembly of peelable, deformable components for integrated devices. <i>NPG Asia Materials</i> , 2013, 5, e66-e66.	3.8	12
78	Cross Effect of Surface Area and Electrical Conductivity for Carbonaceous Materials in Flow-electrode Capacitive Mixing (F-CapMix) and Flow-electrode Capacitive Deionization (FCDI): Solid-like Behavior of Flow-electrode. <i>ACS Sustainable Chemistry and Engineering</i> , 2021, 9, 13514-13525.	3.2	12
79	An integrated strategy based on Schiff base reactions to construct unique two-dimensional nanostructures for intrinsic pseudocapacitive sodium/lithium storage. <i>Chemical Engineering Journal</i> , 2022, 429, 132339.	6.6	12
80	Crack-Growth Behavior in Thermal Barrier Coatings with Cyclic Thermal Exposure. <i>Coatings</i> , 2019, 9, 365.	1.2	11
81	Enhanced Electrochemical Performance and Durability of the BaCo _{0.4} Fe _{0.4} Zr _{0.1} Y _{0.1} O ₃ Composite Cathode of Protonic Ceramic Fuel Cells via Forming Nickel Oxide Nanoparticles. <i>ACS Applied Energy Materials</i> , 2021, 4, 11564-11573.	2.5	11
82	A robust solid electrolyte interphase layer coated on polyethylene separator surface induced by Ge interlayer for stable Li-metal batteries. <i>Electrochimica Acta</i> , 2021, 370, 137703.	2.6	10
83	Unprecedentedly Low CO ₂ Transport through Vertically Aligned, Conical Silicon Nanotube Membranes. <i>Nano Letters</i> , 2020, 20, 4754-4760.	4.5	9
84	Stretchable Electronics: Epidermal Electronics with Advanced Capabilities in Near-Field Communication (Small 8/2015). <i>Small</i> , 2015, 11, 905-905.	5.2	8
85	Highly reversible cycling with Dendrite-Free lithium deposition enabled by robust SEI layer with low charge transfer activation energy. <i>Applied Surface Science</i> , 2022, 572, 151439.	3.1	8
86	Crack-Resistance Behavior of an Encapsulated, Healing Agent Embedded Buffer Layer on Self-Healing Thermal Barrier Coatings. <i>Coatings</i> , 2019, 9, 358.	1.2	7
87	High-Performance Asymmetric Flow-Electrode Capacitive Mixing with MnO ₂ -Coated Activated Carbon Flow-Electrode for Energy Harvesting from Salinity Gradient Power. , 2022, 4, 618-625.		7
88	MXene Analogue: A 2D Nitridene Solid Solution for High-Rate Hydrogen Production. <i>Angewandte Chemie</i> , 2022, 134, .	1.6	7
89	Multilayered Graphene-Coated Metal Current Collectors with High Electrical Conductivity and Corrosion Resistivity for Flow-Electrode Capacitive Mixing. <i>ACS Sustainable Chemistry and Engineering</i> , 2022, 10, 7625-7634.	3.2	7
90	Design of inorganic/organic bi-layered Li protection layer enabled dendrite-free practical Li metal battery. <i>Chemical Engineering Journal</i> , 2022, 450, 137993.	6.6	7

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91	Effect of Ta ⁵⁺ doping on the thermal physical properties of defective fluorite Y ₃ NbO ₇ ceramics. Journal of the American Ceramic Society, 2022, 105, 1358-1366.	1.9	6
92	MICROSTRUCTURAL EVOLUTION AND RESIDUAL STRESSES OF AIR-PLASMA SPRAYED THERMAL BARRIER COATINGS UNDER THERMAL EXPOSURE. Surface Review and Letters, 2010, 17, 337-343.	0.5	5
93	Stretchable Electronics: In-Plane Deformation Mechanics for Highly Stretchable Electronics (Adv. Tj ETQq1 1 0.784314 rgBT /Overlock	11.1	5
94	Dielectric Polarization of a High-Energy Density Graphite Anode and Its Physicochemical Effect on Li-Ion Batteries. Industrial & Engineering Chemistry Research, 2017, 56, 13776-13782.	1.8	5
95	Strategy to utilize amorphous phase of semiconductor toward excellent and reliable photochemical water splitting performance: Roles of interface dipole moment and reaction parallelization. International Journal of Energy Research, 2022, 46, 3674-3685.	2.2	5
96	Galvanic corrosion inhibition from aspect of bonding orbital theory in Cu/Ru barrier CMP. Scientific Reports, 2021, 11, 21214.	1.6	5
97	Freestanding rGO-SWNT-STN Composite Film as an Anode for Li Ion Batteries with High Energy and Power Densities. Nanomaterials, 2015, 5, 2380-2390.	1.9	4
98	Oximetry: Miniaturized Battery-Free Wireless Systems for Wearable Pulse Oximetry (Adv. Funct. Mater.) Tj ETQq0,0 0 rgBT /Overlock 4	7.8	4
99	Epidermal Electronics: Miniaturized Flexible Electronic Systems with Wireless Power and Near-Field Communication Capabilities (Adv. Funct. Mater. 30/2015). Advanced Functional Materials, 2015, 25, 4919-4919.	7.8	3
100	High Rate Capability of a LiNi _{0.84} Co _{0.12} Mn _{0.04} O ₂ Cathode with a Uniform Conducting Network of Functionalized Graphene Nanoribbons for Li-Ion Batteries. Industrial & Engineering Chemistry Research, 2020, 59, 12889-12895.	1.8	3
101	Synthesis of Alkali Transition Metal Oxides Derived from Prussian Blue Analogues Toward Low Cationic Disorder for Li-Ion Battery Cathodes. Crystal Growth and Design, 2020, 20, 4749-4757.	1.4	3
102	Rational design of Au dotted Co ₃ O ₄ nanosheets as an efficient bifunctional catalyst for Li-Oxygen batteries. RSC Advances, 2017, 7, 51652-51657.	1.7	2
103	Innen-Äcktitelbild: Boosting Electrochemical Water Oxidation with Metal Hydroxide Carbonate Templated Prussian Blue Analogues (Angew. Chem. 5/2018). Angewandte Chemie, 2018, 130, 1433-1433.	1.6	1
104	Fabrication and Characteristics of Zirconia-Alumina Composites with Bilayer Structure. Materials Research Society Symposia Proceedings, 2004, 821, 128.	0.1	0
105	Electrodes: Ferromagnetic, Folded Electrode Composite as a Soft Interface to the Skin for Long-Term Electrophysiological Recording (Adv. Funct. Mater. 40/2016). Advanced Functional Materials, 2016, 26, 7280-7280.	7.8	0