Xingcheng Xiao

List of Publications by Year
in descending order

119 papers	12,193 citations	26567 56 h-index	24915 109 g-index
120 all docs	120 docs citations	120 times ranked	14843 citing authors

#	Article	IF	Citations
1	Siliconâ€Based Nanomaterials for Lithiumâ€Ion Batteries: A Review. Advanced Energy Materials, 2014, 4, 1300882.	10.2	1,250
2	A review of graphene and graphene oxide sponge: material synthesis and applications to energy and the environment. Energy and Environmental Science, 2014, 7, 1564.	15.6	996
3	Siliconâ€Based Anodes for Lithiumâ€Ion Batteries: From Fundamentals to Practical Applications. Small, 2018, 14, 1702737.	5.2	650
4	Polydopamine-Coated, Nitrogen-Doped, Hollow Carbonâ€“Sulfur Double-Layered Coreâ€“Shell Structure for Improving Lithiumâ€“Sulfur Batteries. Nano Letters, 2014, 14, 5250-5256.	4.5	361
5	Multifunctional TiO₂â€“C/MnO₂ Coreâ€“Double-Shell Nanowire Arrays as High-Performance 3D Electrodes for Lithium Ion Batteries. Nano Letters, 2013, 13, 5467-5473.	4.5	338
6	Toward an Ideal Polymer Binder Design for High-Capacity Battery Anodes. Journal of the American Chemical Society, 2013, 135, 12048-12056.	6.6	332
7	Synergetic Effects of Inorganic Components in Solid Electrolyte Interphase on High Cycle Efficiency of Lithium Ion Batteries. Nano Letters, 2016, 16, 2011-2016.	4.5	320
8	Grapheneâ€Based Nanocomposites for Energy Storage. Advanced Energy Materials, 2016, 6, 1502159.	10.2	306
9	Tailoring Pore Size of Nitrogenâ€Doped Hollow Carbon Nanospheres for Confining Sulfur in Lithiumâ€“Sulfur Batteries. Advanced Energy Materials, 2015, 5, 1401752.	10.2	273
10	Free-Standing Layer-By-Layer Hybrid Thin Film of Graphene-MnO₂ Nanotube as Anode for Lithium Ion Batteries. Journal of Physical Chemistry Letters, 2011, 2, 1855-1860.	2.1	271
11	In Situ TEM Investigation of Congruent Phase Transition and Structural Evolution of Nanostructured Silicon/Carbon Anode for Lithium Ion Batteries. Nano Letters, 2012, 12, 1624-1632.	4.5	256
12	Revealing Tripleâ€Shape Memory Effect by Polymer Bilayers. Macromolecular Rapid Communications, 2009, 30, 1823-1827.	2.0	234
13	Ultrathin Multifunctional Oxide Coatings for Lithium Ion Batteries. Advanced Materials, 2011, 23, 3911-3915.	11.1	234
14	Improved cycling stability of silicon thin film electrodes through patterning for high energy density lithium batteries. Journal of Power Sources, 2011, 196, 1409-1416.	4.0	207
15	Toward Practical Application of Functional Conductive Polymer Binder for a High-Energy Lithium-Ion Battery Design. Nano Letters, 2014, 14, 6704-6710.	4.5	172
16	Sulfur covalently bonded graphene with large capacity and high rate for high-performance sodium-ion batteries anodes. Nano Energy, 2015, 15, 746-754.	8.2	164
17	Evidence of covalent synergy in siliconâ€“sulfurâ€“graphene yielding highly efficient and long-life lithium-ion batteries. Nature Communications, 2015, 6, 8597.	5.8	163
18	Materials science and fabrication processes for a new MEMS technology based on ultrananocrystalline diamond thin films. Journal of Physics Condensed Matter, 2004, 16, R539-R552.	0.7	162

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19	Self-healable graphene polymer composites. Journal of Materials Chemistry, 2010, 20, 3508.	6.7	154
20	Regulated Breathing Effect of Silicon Negative Electrode for Dramatically Enhanced Performance of Liâ€Ion Battery. Advanced Functional Materials, 2015, 25, 1426-1433.	7.8	149
21	Implementing an in-situ carbon network in Si/reduced graphene oxide for high performance lithium-ion battery anodes. Nano Energy, 2016, 19, 187-197.	8.2	148
22	Self-Peeling Reversible Dry Adhesive System. Chemistry of Materials, 2008, 20, 2866-2868.	3.2	143
23	Design of porous Si/Câ€“graphite electrodes with long cycle stability and controlled swelling. Energy and Environmental Science, 2017, 10, 1427-1434.	15.6	140
24	Thermal transport and grain boundary conductance in ultrananocrystalline diamond thin films. Journal of Applied Physics, 2006, 99, 114301.	1.1	139
25	In vitro andin vivo evaluation of ultrananocrystalline diamond for coating of implantable retinal microchips. Journal of Biomedical Materials Research - Part B Applied Biomaterials, 2006, 77B, 273-281.	1.6	131
26	Stress Mitigation during the Lithiation of Patterned Amorphous Si Islands. Journal of the Electrochemical Society, 2011, 159, A38-A43.	1.3	119
27	Potentiostatic Intermittent Titration Technique for Electrodes Governed by Diffusion and Interfacial Reaction. Journal of Physical Chemistry C, 2012, 116, 1472-1478.	1.5	119
28	Reversible dry micro-fibrillar adhesives with thermally controllable adhesion. Soft Matter, 2009, 5, 3689.	1.2	116
29	Encoding Localized Strain History Through Wrinkle Based Structural Colors. Advanced Materials, 2010, 22, 4390-4394.	11.1	116
30	Engineered Si Electrode Nanoarchitecture: A Scalable Postfabrication Treatment for the Production of Next-Generation Li-Ion Batteries. Nano Letters, 2014, 14, 277-283.	4.5	116
31	In Situ and Operando Investigations of Failure Mechanisms of the Solid Electrolyte Interphase on Silicon Electrodes. ACS Energy Letters, 2016, 1, 689-697.	8.8	116
32	Dual phase Li4Ti5O12â€“TiO2 nanowire arrays as integrated anodes for high-rate lithium-ion batteries. Nano Energy, 2014, 9, 383-391.	8.2	114
33	In Situ Atomic Force Microscopy Study of Initial Solid Electrolyte Interphase Formation on Silicon Electrodes for Li-Ion Batteries. ACS Applied Materials & Interfaces, 2014, 6, 6672-6686.	4.0	113
34	Vertically aligned graphene electrode for lithium ion battery with high rate capability. Electrochemistry Communications, 2011, 13, 209-212.	2.3	112
35	Thickness effects on the lithiation of amorphous silicon thin films. Scripta Materialia, 2011, 64, 307-310.	2.6	106
36	Carbon-Coated Silicon Nanowires on Carbon Fabric as Self-Supported Electrodes for Flexible Lithium-Ion Batteries. ACS Applied Materials & Interfaces, 2017, 9, 9551-9558.	4.0	101

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37	Stress development due to surface processes in graphite electrodes for Li-ion batteries: A first report. Electrochimica Acta, 2012, 66, 28-37.	2.6	100
38	Method to deduce the critical size for interfacial delamination of patterned electrode structures and application to lithiation of thin-film silicon islands. Journal of Power Sources, 2012, 206, 357-366.	4.0	98
39	Reduced Graphene Oxide/Tinâ€“Antimony Nanocomposites as Anode Materials for Advanced Sodium-Ion Batteries. ACS Applied Materials & Interfaces, 2015, 7, 24895-24901.	4.0	89
40	Mn-Doped TiO₂ Nanosheet-Based Spheres as Anode Materials for Lithium-Ion Batteries with High Performance at Elevated Temperatures. ACS Applied Materials & Interfaces, 2014, 6, 7292-7300.	4.0	87
41	Control and Optimization of the Electrochemical and Mechanical Properties of the Solid Electrolyte Interphase on Silicon Electrodes in Lithium Ion Batteries. Advanced Energy Materials, 2016, 6, 1502302.	10.2	86
42	Atomic Layered Coating Enabling Ultrafast Surface Kinetics at Silicon Electrodes in Lithium Ion Batteries. Journal of Physical Chemistry Letters, 2013, 4, 3387-3391.	2.1	84
43	Atomic layer coating to mitigate capacity fading associated with manganese dissolution in lithium ion batteries. Electrochemistry Communications, 2013, 32, 31-34.	2.3	79
44	Thin film graphite electrodes with low stress generation during Li-intercalation. Carbon, 2011, 49, 2742-2749.	5.4	78
45	Li Segregation Induces Structure and Strength Changes at the Amorphous Si/Cu Interface. Nano Letters, 2013, 13, 4759-4768.	4.5	75
46	Toward High Cycle Efficiency of Siliconâ€Based Negative Electrodes by Designing the Solid Electrolyte Interphase. Advanced Energy Materials, 2015, 5, 1401398.	10.2	72
47	Sn/SnO2 embedded in mesoporous carbon nanocomposites as negative electrode for lithium ion batteries. Electrochimica Acta, 2013, 87, 844-852.	2.6	70
48	Failure progression in the solid electrolyte interphase (SEI) on silicon electrodes. Nano Energy, 2020, 68, 104257.	8.2	70
49	Greater osteoblast functions on multiwalled carbon nanotubes grown from anodized nanotubular titanium for orthopedic applications. Nanotechnology, 2007, 18, 365102.	1.3	69
50	Applying functionalized carbon nanotubes to enhance electrochemical performances of tin oxide composite electrodes for Li-ion battery. Journal of Power Sources, 2012, 212, 66-72.	4.0	67
51	Hierarchical Li4Ti5O12-TiO2 composite microsphere consisting of nanocrystals for high power Li-ion batteries. Electrochimica Acta, 2013, 108, 104-111.	2.6	66
52	Graphene wrapped silicon nanocomposites for enhanced electrochemical performance in lithium ion batteries. Electrochimica Acta, 2014, 130, 127-134.	2.6	66
53	A Systematic Investigation of Polymer Binder Flexibility on the Electrode Performance of Lithium-Ion Batteries. ACS Applied Materials & Interfaces, 2014, 6, 17111-17118.	4.0	65
54	Diffusion Mediated Lithiation Stresses in Si Thin Film Electrodes. Journal of the Electrochemical Society, 2012, 159, A1520-A1527.	1.3	64

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55	Unravelling the Impact of Reaction Paths on Mechanical Degradation of Intercalation Cathodes for Lithium-Ion Batteries. Journal of the American Chemical Society, 2015, 137, 13732-13735.	6.6	61
56	Unraveling manganese dissolution/deposition mechanisms on the negative electrode in lithium ion batteries. Physical Chemistry Chemical Physics, 2014, 16, 10398.	1.3	59
57	Extended lithium titanate cycling potential window with near zero capacity loss. Electrochemistry Communications, 2011, 13, 796-799.	2.3	58
58	Effects of stress on lithium transport in amorphous silicon electrodes for lithium-ion batteries. Nano Energy, 2015, 13, 192-199.	8.2	58
59	Adhesion analysis and dry machining performance of CVD diamond coatings deposited on surface modified WCâ€“Co turning inserts. Journal of Materials Processing Technology, 2012, 212, 523-533.	3.1	57
60	Composites of MnO2 nanocrystals and partially graphitized hierarchically porous carbon spheres with improved rate capability for high-performance supercapacitors. Carbon, 2015, 93, 258-265.	5.4	56
61	Electrochemical and interfacial behavior of all solid state batteries using Li10SnP2S12 solid electrolyte. Journal of Power Sources, 2018, 396, 824-830.	4.0	54
62	Potentiostatic intermittent titration technique (PITT) for spherical particles with finite interfacial kinetics. Electrochimica Acta, 2012, 75, 56-61.	2.6	53
63	Engineering of Graphene Layer Orientation to Attain High Rate Capability and Anisotropic Properties in Liâ€ion Battery Electrodes. Advanced Functional Materials, 2013, 23, 2397-2404.	7.8	53
64	Design of Nanostructured Heterogeneous Solid Ionic Coatings through a Multiscale Defect Model. ACS Applied Materials & Interfaces, 2016, 8, 5687-5693.	4.0	53
65	Fast lithium-ion storage of Nb₂O₅ nanocrystals in situ grown on carbon nanotubes for high-performance asymmetric supercapacitors. RSC Advances, 2015, 5, 41179-41185.	1.7	51
66	Building sponge-like robust architectures of CNTâ€“grapheneâ€“Si composites with enhanced rate and cycling performance for lithium-ion batteries. Journal of Materials Chemistry A, 2015, 3, 3962-3967.	5.2	51
67	Mechanical Property Evolution of Silicon Composite Electrodes Studied by Environmental Nanoindentation. Advanced Energy Materials, 2018, 8, 1702578.	10.2	51
68	Controlling water contact angle on carbon surfaces from 5Â° to 167Â°. Carbon, 2006, 44, 3116-3120.	5.4	50
69	Asymmetric Rate Behavior of Si Anodes for Lithiumâ€ion Batteries: Ultrafast Deâ€Lithiation versus Sluggish Lithiation at High Current Densities. Advanced Energy Materials, 2015, 5, 1401627.	10.2	50
70	Investigation of the Reasons for Capacity Fading in Li-Ion Battery Cells. Journal of the Electrochemical Society, 2014, 161, A1672-A1680.	1.3	49
71	Subeutectic Growth of Single-Crystal Silicon Nanowires Grown on and Wrapped with Graphene Nanosheets: High-Performance Anode Material for Lithium-Ion Battery. ACS Applied Materials & Interfaces, 2014, 6, 13757-13764.	4.0	45
72	Self-generated concentration and modulus gradient coating design to protect Si nano-wire electrodes during lithiation. Physical Chemistry Chemical Physics, 2016, 18, 3706-3715.	1.3	42

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73	Viscoelastic Behavior and Force Nature of Thermoâ€Reversible Epoxy Dry Adhesives. Macromolecular Rapid Communications, 2010, 31, 295-299.	2.0	41
74	Experimental and Theoretical Characterization of Electrode Materials that Undergo Large Volume Changes and Application to the Lithiumâ€“Silicon System. Journal of Physical Chemistry C, 2015, 119, 5341-5349.	1.5	39
75	Coating thickness and interlayer effects on CVD-diamond film adhesion to cobalt-cemented tungsten carbides. Surface and Coatings Technology, 2013, 215, 272-279.	2.2	37
76	Stress evolution in lithium metal electrodes. Energy Storage Materials, 2020, 24, 281-290.	9.5	37
77	Decoration of Graphitic Surfaces with Sn Nanoparticles through Surface Functionalization Using Diazonium Chemistry. Langmuir, 2012, 28, 13042-13050.	1.6	35
78	Multifunctional Lithium-Ion-Exchanged Zeolite-Coated Separator for Lithium-Ion Batteries. ACS Applied Energy Materials, 2018, 1, 7237-7243.	2.5	35
79	Internal Microstructural Changes and Stress Evolution in Silicon Nanoparticle Based Composite Electrodes. Journal of the Electrochemical Society, 2017, 164, A3750-A3765.	1.3	34
80	Thermodynamic Model for Substitutional Materials: Application to Lithiated Graphite, Spinel Manganese Oxide, Iron Phosphate, and Layered Nickel-Manganese-Cobalt Oxide. Journal of the Electrochemical Society, 2017, 164, E3243-E3253.	1.3	33
81	Condensed water on superhydrophobic carbon films. Journal of Materials Research, 2008, 23, 2174-2178.	1.2	32
82	The failure mechanism of chromium as the interlayer to enhance the adhesion of nanocrystalline diamond coatings on cemented carbide. Diamond and Related Materials, 2009, 18, 1114-1117.	1.8	32
83	Vanadium Pentoxide Nanorods Anchored to and Wrapped with Graphene Nanosheets for Highâ€Power Asymmetric Supercapacitors. ChemElectroChem, 2015, 2, 1264-1269.	1.7	31
84	Strain-Induced Lithium Losses in the Solid Electrolyte Interphase on Silicon Electrodes. ACS Applied Materials & Interfaces, 2017, 9, 28406-28417.	4.0	31
85	Dielectric properties of hydrogen-incorporated chemical vapor deposited diamond thin films. Journal of Applied Physics, 2007, 102, .	1.1	30
86	Tailoring nanocrystalline diamond coated on titanium for osteoblast adhesion. Journal of Biomedical Materials Research - Part A, 2010, 95A, 129-136.	2.1	30
87	Cross-linked aluminum dioxybenzene coating for stabilization of silicon electrodes. Nano Energy, 2016, 22, 202-210.	8.2	30
88	A Bottom-Up Formation Mechanism of Solid Electrolyte Interphase Revealed by Isotope-Assisted Time-of-Flight Secondary Ion Mass Spectrometry. Journal of Physical Chemistry Letters, 2018, 9, 5508-5514.	2.1	29
89	Micron-sized secondary Si/C composite with in situ crosslinked polymeric binder for high-energy-density lithium-ion battery anode. Electrochimica Acta, 2019, 309, 157-165.	2.6	29
90	Self-Supported Single Crystalline H₂Ti₈O₁₇ Nanoarrays as Integrated Three-Dimensional Anodes for Lithium-Ion Microbatteries. ACS Applied Materials & Interfaces, 2014, 6, 568-574.	4.0	26

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91	Highly durable 3D conductive matrixed silicon anode for lithium-ion batteries. Journal of Power Sources, 2018, 407, 84-91.	4.0	24
92	An Investigation of Chemoâ€Mechanical Phenomena and Li Metal Penetration in Allâ€Solidâ€State Lithium Metal Batteries Using In Situ Optical Curvature Measurements. Advanced Energy Materials, 2022, 12, .	10.2	24
93	An approach to characterize and clarify hysteresis phenomena of lithium-silicon electrodes. Journal of Applied Physics, 2017, 122, .	1.1	23
94	Application of WSe₂ Nanoparticles Synthesized by Chemical Vapor Condensation Method for Li-Ion Battery Anodes. Zeitschrift Fur Physikalische Chemie, 2015, 229, 1429-1437.	1.4	22
95	Mechanical behavior of electroplated mossy lithium at room temperature studied by flat punch indentation. Applied Physics Letters, 2019, 115, .	1.5	22
96	Hot-Chemistry Structural Phase Transformation in Single-Crystal Chalcogenides for Long-Life Lithium Ion Batteries. ACS Applied Materials & Interfaces, 2017, 9, 20603-20612.	4.0	21
97	The Bonding Nature and Adhesion of Polyacrylic Acid Coating on Li-Metal for Li Dendrite Prevention. ACS Applied Materials & Interfaces, 2020, 12, 51007-51015.	4.0	21
98	Dendrite-free Lithium Based on Lessons Learned from Lithium and Magnesium Electrodeposition Morphology Simulations. Cell Reports Physical Science, 2021, 2, 100294.	2.8	19
99	Phase-separated siliconâ€“tin nanocomposites for high capacity negative electrodes in lithium ion batteries. Journal of Power Sources, 2012, 214, 258-265.	4.0	18
100	A non-destructive method for measuring the mechanical properties of ultrathin films prepared by atomic layer deposition. Applied Physics Letters, 2014, 105, .	1.5	16
101	Pop-Up Delamination of Electrodes in Solid-State Batteries. Journal of the Electrochemical Society, 2018, 165, A618-A625.	1.3	12
102	Synthesis of Nanoporous Li₄Ti₅O₁₂â€“TiO₂ Composites for Highâ€Performance Lithiumâ€Ionâ€Battery Anodes. ChemElectroChem, 2016, 3, 1951-1959.	1.7	11
103	Structure and mechanical properties of electroplated mossy lithium: Effects of current density and electrolyte. Energy Storage Materials, 2020, 26, 276-282.	9.5	11
104	Material transfer during machining of aluminum alloys with polycrystalline diamond cutting tools. Journal of Materials Processing Technology, 2009, 209, 5760-5765.	3.1	10
105	Fabrication and Characterization of Lithium-Silicon Thick-Film Electrodes for High-Energy-Density Batteries. Journal of the Electrochemical Society, 2017, 164, A156-A167.	1.3	10
106	Laser Joining of Carbon-Fiber-Reinforced Polymer and Metal with High-Strength and Corrosion-Resistant Bonds. Procedia Manufacturing, 2019, 34, 42-48.	1.9	9
107	The importance of covalent coupling in the synthesis of high performance composite anodes for lithium ion batteries. RSC Advances, 2016, 6, 45519-45524.	1.7	8
108	Mechanical and Electronic Stabilization of Solid Electrolyte Interphase with Sulfite Additive for Lithium Metal Batteries. Journal of the Electrochemical Society, 2019, 166, A3201-A3206.	1.3	8

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109	Electron paramagnetic resonance study of hydrogen-incorporated ultrananocrystalline diamond thin films. Journal of Applied Physics, 2007, 101, 123924.	1.1	6
110	Novel Ultrananocrystalline Diamond Probes for High-Resolution Low-Wear Nanolithographic Techniques. Small, 2005, 1, 912-912.	5.2	4
111	Enhanced Rate Capability of Oxide Coated Lithium Titanate within Extended Voltage Ranges. Frontiers in Energy Research, 2015, 3, .	1.2	4
112	Surface Treatments for Controlling Solid Electrolyte Interphase Formation on Sn/Graphene Composite Anodes for High-Performance Li-Ion Batteries. Journal of Physical Chemistry C, 2017, 121, 16682-16692.	1.5	4
113	Conformal formation of Carbon-TiOX matrix encapsulating silicon for high-performance lithium-ion battery anode. Journal of Power Sources, 2018, 399, 98-104.	4.0	4
114	Reinforced Composite Film on Lithium Metal Electrodes through Aryl Chlorosilane Treatment. Langmuir, 2019, 35, 16459-16465.	1.6	3
115	Tuning Solid Electrolyte Interphase Layer Properties through the Integration of Conversion Reaction. ACS Applied Materials & Interfaces, 2019, 11, 44204-44213.	4.0	3
116	Lithiated Zeolite as Additives for Lowâ€Cost Positive Electrode. Advanced Materials Technologies, 2021, 6, 2100615.	3.0	3
117	A Power-Law Decrease in Interfacial Resistance Between Li₇La₃Zr₂O₁₂ and Lithium Metal After Removing Stack Pressure. Journal of the Electrochemical Society, 2021, 168, 100522.	1.3	3
118	Observation of the surface layer of lithium metal using in situ spectroscopy. Applied Physics Letters, 2022, 120, .	1.5	2
119	Vanadium Pentoxide Nanorods Anchored to and Wrapped with Graphene Nanosheets for Highâ€Power Asymmetric Supercapacitors. ChemElectroChem, 2015, 2, 1210-1210.	1.7	0