Yan Yao

List of Publications by Year
in descending order

138 papers	28,623 citations	15466 65 h-index	14702 127 g-index
147 all docs	147 docs citations	147 times ranked	26138 citing authors

#	Article	IF	Citations
1	High-efficiency solution processable polymer photovoltaic cells by self-organization of polymer blends. Nature Materials, 2005, 4, 864-868.	13.3	5,281
2	Stable cycling of double-walled silicon nanotube battery anodes through solidâ€“electrolyte interphase control. Nature Nanotechnology, 2012, 7, 310-315.	15.6	2,144
3	A Yolk-Shell Design for Stabilized and Scalable Li-Ion Battery Alloy Anodes. Nano Letters, 2012, 12, 3315-3321.	4.5	1,587
4	Interconnected Silicon Hollow Nanospheres for Lithium-Ion Battery Anodes with Long Cycle Life. Nano Letters, 2011, 11, 2949-2954.	4.5	1,278
5	â€œSolvent Annealingâ€•Effect in Polymer Solar Cells Based on Poly(3-hexylthiophene) and Methanofullerenes. Advanced Functional Materials, 2007, 17, 1636-1644.	7.8	1,091
6	Transition metal oxides as the buffer layer for polymer photovoltaic cells. Applied Physics Letters, 2006, 88, 073508.	1.5	953
7	Improving the Performance of Lithiumâ€“Sulfur Batteries by Conductive Polymer Coating. ACS Nano, 2011, 5, 9187-9193.	7.3	815
8	Current status and future directions of multivalent metal-ion batteries. Nature Energy, 2020, 5, 646-656.	19.8	798
9	Investigation of annealing effects and film thickness dependence of polymer solar cells based on poly(3-hexylthiophene). Journal of Applied Physics, 2005, 98, 043704.	1.1	730
10	Bandgap and Molecular Energy Level Control of Conjugated Polymer Photovoltaic Materials Based on Benzo[1,2-b:4,5-bâ€²]dithiophene. Macromolecules, 2008, 41, 6012-6018.	2.2	723
11	Effects of Solvent Mixtures on the Nanoscale Phase Separation in Polymer Solar Cells. Advanced Functional Materials, 2008, 18, 1783-1789.	7.8	645
12	Universal quinone electrodes for long cycle life aqueous rechargeable batteries. Nature Materials, 2017, 16, 841-848.	13.3	615
13	Symmetrical MnO₂â€“Carbon Nanotubeâ€“Textile Nanostructures for Wearable Pseudocapacitors with High Mass Loading. ACS Nano, 2011, 5, 8904-8913.	7.3	582
14	Opportunities and Challenges for Organic Electrodes in Electrochemical Energy Storage. Chemical Reviews, 2020, 120, 6490-6557.	23.0	517
15	Accurate Measurement and Characterization of Organic Solar Cells. Advanced Functional Materials, 2006, 16, 2016-2023.	7.8	506
16	Interlayer-Expanded Molybdenum Disulfide Nanocomposites for Electrochemical Magnesium Storage. Nano Letters, 2015, 15, 2194-2202.	4.5	357
17	Manipulating regioregular poly(3-hexylthiophene) : [6,6]-phenyl-C61-butyric acid methyl ester blendsâ€”route towards high efficiency polymer solar cells. Journal of Materials Chemistry, 2007, 17, 3126.	6.7	351
18	Highly Efficient Flexible Perovskite Solar Cells with Antireflection and Self-Cleaning Nanostructures. ACS Nano, 2015, 9, 10287-10295.	7.3	335

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19	Effect of self-organization in polymer/fullerene bulk heterojunctions on solar cell performance. Applied Physics Letters, 2006, 89, 063505.	1.5	331
20	Positioning Organic Electrode Materials in the Battery Landscape. Joule, 2018, 2, 1690-1706.	11.7	320
21	Fast kinetics of magnesium monochloride cations in interlayer-expanded titanium disulfide for magnesium rechargeable batteries. Nature Communications, 2017, 8, 339.	5.8	304
22	Solvent engineering towards controlled grain growth in perovskite planar heterojunction solar cells. Nanoscale, 2015, 7, 10595-10599.	2.8	294
23	Regioregular Copolymers of 3-Alkoxythiophene and Their Photovoltaic Application. Journal of the American Chemical Society, 2006, 128, 8980-8986.	6.6	286
24	Plastic Nearâ€Infrared Photodetectors Utilizing Low Band Gap Polymer. Advanced Materials, 2007, 19, 3979-3983.	11.1	281
25	Enhancing sodium-ion battery performance with interlayer-expanded MoS2â€“PEO nanocomposites. Nano Energy, 2015, 15, 453-461.	8.2	269
26	Improving the cycling stability of silicon nanowire anodes with conducting polymer coatings. Energy and Environmental Science, 2012, 5, 7927.	15.6	265
27	An Aqueous Caâ€Ion Battery. Advanced Science, 2017, 4, 1700465.	5.6	254
28	Heavily n-Dopable Ï€-Conjugated Redox Polymers with Ultrafast Energy Storage Capability. Journal of the American Chemical Society, 2015, 137, 4956-4959.	6.6	242
29	Poly(anthraquinonyl sulfide) cathode for potassium-ion batteries. Electrochemistry Communications, 2016, 71, 5-8.	2.3	235
30	High-power Mg batteries enabled by heterogeneous enolization redox chemistry and weakly coordinating electrolytes. Nature Energy, 2020, 5, 1043-1050.	19.8	205
31	Broadband light management using low-Q whispering gallery modes in spherical nanoshells. Nature Communications, 2012, 3, 664.	5.8	203
32	One dimensional Si/Sn - based nanowires and nanotubes for lithium-ion energy storage materials. Journal of Materials Chemistry, 2011, 21, 9825.	6.7	200
33	Fabrication of efficient planar perovskite solar cells using a one-step chemical vapor deposition method. Scientific Reports, 2015, 5, 14083.	1.6	200
34	Efficient light harvesting in multiple-device stacked structure for polymer solar cells. Applied Physics Letters, 2006, 88, 064104.	1.5	193
35	Marked Alkyl- vs Alkenyl-Substitutent Effects on Squaraine Dye Solid-State Structure, Carrier Mobility, and Bulk-Heterojunction Solar Cell Efficiency. Journal of the American Chemical Society, 2010, 132, 4074-4075.	6.6	186
36	Graphene decorated vanadium oxide nanowire aerogel for long-cycle-life magnesium battery cathodes. Nano Energy, 2015, 18, 265-272.	8.2	170

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37	Nanoflakeâ€Assembled Hierarchical Na₃V₂(PO₄)₃/C Microflowers: Superior Li Storage Performance and Insertion/Extraction Mechanism. Advanced Energy Materials, 2015, 5, 1401963.	10.2	169
38	Interaction of Organic Cation with Water Molecule in Perovskite MAPbI₃: From Dynamic Orientational Disorder to Hydrogen Bonding. Chemistry of Materials, 2016, 28, 7385-7393.	3.2	169
39	Efficient Alkaline Water/Seawater Hydrogen Evolution by a Nanorodâ€Nanoparticleâ€Structured Niâ€MoN Catalyst with Fast Waterâ€Dissociation Kinetics. Advanced Materials, 2022, 34, e2201774.	11.1	165
40	Advanced Materials for Zincâ€Based Flow Battery: Development and Challenge. Advanced Materials, 2019, 31, e1902025.	11.1	160
41	Tailored Organic Electrode Material Compatible with Sulfide Electrolyte for Stable Allâ€Solidâ€State Sodium Batteries. Angewandte Chemie - International Edition, 2018, 57, 2630-2634.	7.2	138
42	Directing Mg-Storage Chemistry in Organic Polymers toward High-Energy Mg Batteries. Joule, 2019, 3, 782-793.	11.7	124
43	High Areal Capacity Hybrid Magnesiumâ€“Lithium-Ion Battery with 99.9% Coulombic Efficiency for Large-Scale Energy Storage. ACS Applied Materials & Interfaces, 2015, 7, 7001-7007.	4.0	123
44	Highly Conductive, Mechanically Robust, and Electrochemically Inactive TiC/C Nanofiber Scaffold for High-Performance Silicon Anode Batteries. ACS Nano, 2011, 5, 8346-8351.	7.3	122
45	Li₃VO₄ anchored graphene nanosheets for long-life and high-rate lithium-ion batteries. Chemical Communications, 2015, 51, 229-231.	2.2	107
46	Effects of C70 derivative in low band gap polymer photovoltaic devices: Spectral complementation and morphology optimization. Applied Physics Letters, 2006, 89, 153507.	1.5	106
47	Flexible photovoltaic technologies. Journal of Materials Chemistry C, 2014, 2, 1233.	2.7	106
48	Density functional theory study of Li, Na, and Mg intercalation and diffusion in MoS₂with controlled interlayer spacing. Materials Research Express, 2016, 3, 064001.	0.8	100
49	Critical kinetic control of non-stoichiometric intermediate phase transformation for efficient perovskite solar cells. Nanoscale, 2016, 8, 12892-12899.	2.8	98
50	Cross-conjugated oligomeric quinones for high performance organic batteries. Nano Energy, 2017, 37, 46-52.	8.2	97
51	Separator Effect on Zinc Electrodeposition Behavior and Its Implication for Zinc Battery Lifetime. Nano Letters, 2021, 21, 10446-10452.	4.5	94
52	Rechargeable Mgâ€“Li hybrid batteries: status and challenges. Journal of Materials Research, 2016, 31, 3125-3141.	1.2	92
53	Low Reflectivity and High Flexibility of Tin-Doped Indium Oxide Nanofiber Transparent Electrodes. Journal of the American Chemical Society, 2011, 133, 27-29.	6.6	88
54	Self-Propagating Molecular Assemblies as Interlayers for Efficient Inverted Bulk-Heterojunction Solar Cells. Journal of the American Chemical Society, 2010, 132, 12528-12530.	6.6	85

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55	A high-voltage rechargeable magnesium-sodium hybrid battery. Nano Energy, 2017, 34, 188-194.	8.2	84
56	Flexible electrode for long-life rechargeable sodium-ion batteries: effect of oxygen vacancy in MoO_{3â^'x}. Journal of Materials Chemistry A, 2016, 4, 5402-5405.	5.2	82
57	Nickel-iron bimetallic diselenides with enhanced kinetics for high-capacity and long-life magnesium batteries. Nano Energy, 2018, 54, 360-366.	8.2	82
58	Mixed-phase mullite electrocatalyst for pH-neutral oxygen reduction in magnesium-air batteries. Nano Energy, 2016, 27, 8-16.	8.2	81
59	High-Rate LiTi₂(PO₄)₃@Nâ€“C Composite via Bi-nitrogen Sources Doping. ACS Applied Materials & Interfaces, 2015, 7, 28337-28345.	4.0	77
60	Extrinsic Green Photoluminescence from the Edges of 2D Cesium Lead Halides. Advanced Materials, 2019, 31, e1902492.	11.1	75
61	Hyperbranched PEO-Based Hyperstar Solid Polymer Electrolytes with Simultaneous Improvement of Ion Transport and Mechanical Strength. ACS Applied Energy Materials, 2019, 2, 1608-1615.	2.5	74
62	A high-energy quinone-based all-solid-state sodium metal battery. Nano Energy, 2019, 62, 718-724.	8.2	71
63	Toxicity of exfoliated-MoS₂and annealed exfoliated-MoS₂towards planktonic cells, biofilms, and mammalian cells in the presence of electron donor. Environmental Science: Nano, 2015, 2, 370-379.	2.2	70
64	Taming Active Material-Solid Electrolyte Interfaces with Organic Cathode for All-Solid-State Batteries. Joule, 2019, 3, 1349-1359.	11.7	70
65	Bi2Se3/C Nanocomposite as a New Sodium-Ion Battery Anode Material. Nano-Micro Letters, 2018, 10, 50.	14.4	65
66	Architectural design and fabrication approaches for solid-state batteries. MRS Bulletin, 2018, 43, 775-781.	1.7	64
67	Functionalization of silicon nanowire surfaces with metal-organic frameworks. Nano Research, 2012, 5, 109-116.	5.8	63
68	3,6-Dithiophen-2-yl-diketopyrrolo[3,2-b]pyrrole (isoDPPT) as an Acceptor Building Block for Organic Opto-Electronics. Macromolecules, 2013, 46, 3895-3906.	2.2	62
69	An electrochemically stable homogeneous glassy electrolyte formed at room temperature for all-solid-state sodium batteries. Nature Communications, 2022, 13, .	5.8	62
70	Stabilizing the Interface between Sodium Metal Anode and Sulfide-Based Solid-State Electrolyte with an Electron-Blocking Interlayer. ACS Applied Materials & Interfaces, 2019, 11, 9672-9678.	4.0	61
71	Enhancement in open circuit voltage through a cascade-type energy band structure. Applied Physics Letters, 2007, 91, 223508.	1.5	60
72	Recent progress of artificial interfacial layers in aqueous Zn metal batteries. EnergyChem, 2022, 4, 100076.	10.1	59

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73	Effect of electrolyte anions on the cycle life of a polymer electrode in aqueous batteries. EScience, 2022, 2, 110-115.	25.0	58
74	A high-performance oxygen evolution catalyst in neutral-pH for sunlight-driven CO2 reduction. Nature Communications, 2019, 10, 4081.	5.8	57
75	Current status and future directions of all-solid-state batteries with lithium metal anodes, sulfide electrolytes, and layered transition metal oxide cathodes. Nano Energy, 2021, 87, 106081.	8.2	55
76	Structures and Electrical Properties of Agâ€“Tetracyanoquinodimethane Organometallic Nanowires. IEEE Nanotechnology Magazine, 2005, 4, 238-241.	1.1	53
77	Optical Absorption Enhancement in Freestanding GaAs Thin Film Nanopyramid Arrays. Advanced Energy Materials, 2012, 2, 1254-1260.	10.2	52
78	Facile Synthesis of Different Morphologies of Cu₂SnS₃ for High-Performance Supercapacitors. ACS Applied Materials & Interfaces, 2017, 9, 26038-26044.	4.0	52
79	Chromate conversion coated aluminium as a light-weight and corrosion-resistant current collector for aqueous lithium-ion batteries. Journal of Materials Chemistry A, 2016, 4, 395-399.	5.2	50
80	Internal and external morphology-dependent plasmonic resonance in monolithic nanoporous gold nanoparticles. RSC Advances, 2014, 4, 36682-36688.	1.7	48
81	A magnesiumâ€“sodium hybrid battery with high operating voltage. Chemical Communications, 2016, 52, 8263-8266.	2.2	48
82	CO₂ to Formic Acid Using Cuâ€“Sn on Laser-Induced Graphene. ACS Applied Materials & Interfaces, 2020, 12, 41223-41229.	4.0	48
83	Advanced aqueous rechargeable lithium battery using nanoparticulate LiTi2(PO4)3/C as a superior anode. Scientific Reports, 2015, 5, 10733.	1.6	46
84	Spontaneous Formation of 2D/3D Heterostructures on the Edges of 2D Ruddlesdenâ€“Popper Hybrid Perovskite Crystals. Chemistry of Materials, 2020, 32, 5009-5015.	3.2	45
85	Carbon-coated rhombohedral Li₃V₂(PO₄)₃ as both cathode and anode materials for lithium-ion batteries: electrochemical performance and lithium storage mechanism. Journal of Materials Chemistry A, 2014, 2, 20231-20236.	5.2	44
86	Quantifying the relation between the morphology and performance of polymer solar cells using Monte Carlo simulations. Journal of Applied Physics, 2008, 104, .	1.1	43
87	Microstructure engineering of solid-state composite cathode via solvent-assisted processing. Joule, 2021, 5, 1845-1859.	11.7	42
88	Investigation of high oxygen reduction reaction catalytic performance on Mn-based mullite SmMn₂O₅. Journal of Materials Chemistry A, 2017, 5, 20922-20931.	5.2	39
89	Intercalation Pseudocapacitance of Exfoliated Molybdenum Disulfide for Ultrafast Energy Storage. ChemNanoMat, 2016, 2, 688-691.	1.5	38
90	High-Energy All-Solid-State Organicâ€“Lithium Batteries Based on Ceramic Electrolytes. ACS Energy Letters, 2021, 6, 201-207.	8.8	37

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91	Preparation and electrical/optical bistable property of potassium tetracyanoquinodimethane thin films. Thin Solid Films, 2003, 436, 259-263.	0.8	36
92	High performance printable perovskite solar cells based on Cs0.1FA0.9PbI3 in mesoporous scaffolds. Journal of Power Sources, 2019, 415, 105-111.	4.0	34
93	Roadmap of Solid-State Lithium-Organic Batteries toward 500 Wh kg^{â€“1}. ACS Energy Letters, 2021, 6, 3287-3306.	8.8	31
94	In Situ Electron Microscopy Investigation of Sodiation of Titanium Disulfide Nanoflakes. ACS Nano, 2019, 13, 9421-9430.	7.3	30
95	Conformal poly(ethyl Î±-cyanoacrylate) nano-coating for improving the interface stability of LiNi0.5Mn1.5O4. Electrochimica Acta, 2017, 236, 221-227.	2.6	27
96	Synthesis and Photoluminescence Properties of 2D Phenethylammonium Lead Bromide Perovskite Nanocrystals. Small Methods, 2017, 1, 1700245.	4.6	27
97	Low voltage and fast speed all-polymeric optocouplers. Applied Physics Letters, 2007, 90, 053509.	1.5	26
98	High-efficiency solution processable polymer photovoltaic cells by self-organization of polymer blends. , 2010, , 80-84.		24
99	An Î±-CrPO₄-type NaV₃(PO₄)₃ anode for sodium-ion batteries with excellent cycling stability and the exploration of sodium storage behavior. Journal of Materials Chemistry A, 2017, 5, 3839-3847.	5.2	24
100	Charge Storage Mechanism of a Quinone Polymer Electrode for Zinc-ion Batteries. Journal of the Electrochemical Society, 2020, 167, 070558.	1.3	24
101	On the quality of tape-cast thin films of sulfide electrolytes for solid-state batteries. Materials Today Physics, 2021, 18, 100397.	2.9	23
102	Tailored Organic Electrode Material Compatible with Sulfide Electrolyte for Stable Allâ€Solidâ€State Sodium Batteries. Angewandte Chemie, 2018, 130, 2660-2664.	1.6	22
103	Expanded lithiation of titanium disulfide: Reaction kinetics of multi-step conversion reaction. Nano Energy, 2019, 63, 103882.	8.2	21
104	Moisture-driven phase transition for improved perovskite solar cells with reduced trap-state density. Nano Research, 2017, 10, 1413-1422.	5.8	20
105	A Quinone Anode for Lithiumâ€Ion Batteries in Mild Aqueous Electrolytes. ChemSusChem, 2020, 13, 2250-2255.	3.6	20
106	Dendrite-free Lithium Based on Lessons Learned from Lithium and Magnesium Electrodeposition Morphology Simulations. Cell Reports Physical Science, 2021, 2, 100294.	2.8	19
107	Tailoring nucleation and grain growth by changing the precursor phase ratio for efficient organic lead halide perovskite optoelectronic devices. Journal of Materials Chemistry C, 2017, 5, 10114-10121.	2.7	18
108	Quasi-Solid-State Liâ€“O₂ Batteries with Laser-Induced Graphene Cathode Catalysts. ACS Applied Energy Materials, 2020, 3, 1702-1709.	2.5	18

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109	Chemically inert covalently networked triazole-based solid polymer electrolytes for stable all-solid-state lithium batteries. Journal of Materials Chemistry A, 2019, 7, 19691-19695.	5.2	17
110	Stable three-dimensional metal hydride anodes for solid-state lithium storage. Energy Storage Materials, 2019, 18, 423-428.	9.5	16
111	Visualizing highly selective electrochemical CO2 reduction on a molecularly dispersed catalyst. Materials Today Physics, 2021, 19, 100427.	2.9	15
112	Electrochemical swelling induced high material utilization of porous polymers in magnesium electrolytes. Materials Today, 2022, 55, 29-36.	8.3	13
113	Semihollow Coreâ€“Shell Nanoparticles with Porous SiO₂ Shells Encapsulating Elemental Sulfur for Lithiumâ€“Sulfur Batteries. ACS Applied Materials & Interfaces, 2020, 12, 47368-47376.	4.0	12
114	Halfway through. Nature Energy, 2019, 4, 10-11.	19.8	11
115	Accelerated Modeling of Lithium Diffusion in Solid State Electrolytes using Artificial Neural Networks. Advanced Theory and Simulations, 2020, 3, 2000097.	1.3	11
116	Investigations of the structure of Na2Sâ€¯+â€¯P2S5 glassy electrolytes and its impact on Na+ ionic conductivity through ab initio molecular dynamics. Solid State Ionics, 2019, 338, 177-184.	1.3	8
117	Silver-tetracyanoquinodimethane (Ag-TCNQ) nanostructures and nanodevice. , 0, , .		7
118	Optical Absorption Enhancement: Optical Absorption Enhancement in Freestanding GaAs Thin Film Nanopyramid Arrays (Adv. Energy Mater. 10/2012). Advanced Energy Materials, 2012, 2, 1150-1150.	10.2	7
119	Preface to the Special Issue of ChemSusChem on Organic Batteries. ChemSusChem, 2020, 13, 2107-2109.	3.6	7
120	Improved Mechanical Durability of Highâ€Performance OPVs Using Semiâ€Interpenetrating Networks. Advanced Optical Materials, 2020, 8, 2000516.	3.6	6
121	Taming lithium metal through seeded growth. National Science Review, 2017, 4, 17-18.	4.6	5
122	Controlling Porosity of Anode Support in Tubular Solid Oxide Fuel Cells by Freeze Casting. Journal of Electrochemical Energy Conversion and Storage, 2020, 17, .	1.1	5
123	Ultrahigh Energy Density Liâ€Organic Primary Batteries. Energy and Environmental Materials, 2022, 5, 1010-1011.	7.3	5
124	GaAs thin film nanostructure arrays for III-V solar cell applications. Proceedings of SPIE, 2012, , .	0.8	4
125	Natural organic matter adsorption conditions influence photocatalytic reaction pathways of phosphate-treated titanium dioxide nanoparticles. Environmental Science: Nano, 2021, 8, 2165-2176.	2.2	4
126	SIW Microstrip Cavity Resonators with a Sensing Aperture. , 2019, , .		2

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127	Zincâ€Based Flow Batteries: Advanced Materials for Zincâ€Based Flow Battery: Development and Challenge (Adv. Mater. 50/2019). Advanced Materials, 2019, 31, 1970356.	11.1	2
128	Tandem stacking structure for polymer solar cells by using semi-transparent electrodes. , 2006, 6334, 170.		1
129	Gossip-based Multicast Loss Recovery Mechanisms in Group Key Distribution. , 2005, , .		0
130	Effect of side-chains on low band gap polymer photovoltaic devices. , 2006, , .		0
131	Nanostructured polymer solar cells. , 2008, , .		0
132	Low Dose Electron Microscopy of Interlayer Expanded Molybdenum Disulfide Nanocomposites. Microscopy and Microanalysis, 2015, 21, 1057-1058.	0.2	0
133	Titelbild: Tailored Organic Electrode Material Compatible with Sulfide Electrolyte for Stable Allâ€Solidâ€State Sodium Batteries (Angew. Chem. 10/2018). Angewandte Chemie, 2018, 130, 2531-2531.	1.6	0
134	TEM Characterization of the Edges of CsPb2Br5 Perovskite Crystals. Microscopy and Microanalysis, 2018, 24, 1984-1985.	0.2	0
135	In situ observations of interfacial evolutions in solid-state lithium battery with sulfide-based solid electrolyte. , 2019, , .		0
136	Electrolyte dictated materials design for beyond lithium ion batteries. , 2018, , .		0
137	Benchmarks of the density functional tight-binding method for redox, protonation and electronic properties of quinones. Physical Chemistry Chemical Physics, 2022, 24, 6742-6756.	1.3	0
138	Development of cathode materials for rechargeable magnesium batteries: From intercalation to enolization. , 2022, , .		0