Yang Bai

List of Publications by Year
in descending order

79 papers	12,831 citations	46984 47 h-index	66879 78 g-index
82 all docs	82 docs citations	82 times ranked	10869 citing authors

#	Article	IF	Citations
1	Defect passivation in hybrid perovskite solar cells using quaternary ammonium halide anions andÂ cations. Nature Energy, 2017, 2, .	19.8	1,694
2	Cation and anion immobilization through chemical bonding enhancement with fluorides for stable halide perovskite solar cells. Nature Energy, 2019, 4, 408-415.	19.8	831
3	Scaling behavior of moisture-induced grain degradation in polycrystalline hybrid perovskite thin films. Energy and Environmental Science, 2017, 10, 516-522.	15.6	720
4	Efficiency Enhancement of Perovskite Solar Cells through Fast Electron Extraction: The Role of Graphene Quantum Dots. Journal of the American Chemical Society, 2014, 136, 3760-3763.	6.6	688
5	Ï€â€Conjugated Lewis Base: Efficient Trapâ€Passivation and Chargeâ€Extraction for Hybrid Perovskite Solar Cells. Advanced Materials, 2017, 29, 1604545.	11.1	543
6	In Situ Growth of 2D Perovskite Capping Layer for Stable and Efficient Perovskite Solar Cells. Advanced Functional Materials, 2018, 28, 1706923.	7.8	543
7	Strain engineering in perovskite solar cells and its impacts on carrier dynamics. Nature Communications, 2019, 10, 815.	5.8	528
8	Enhanced Efficiency and Stability of Inverted Perovskite Solar Cells Using Highly Crystalline SnO₂ Nanocrystals as the Robust Electronâ€Transporting Layer. Advanced Materials, 2016, 28, 6478-6484.	11.1	447
9	Highâ€Performance Holeâ€Extraction Layer of Solâ€"Gelâ€Processed NiO Nanocrystals for Inverted Planar Perovskite Solar Cells. Angewandte Chemie - International Edition, 2014, 53, 12571-12575.	7.2	355
10	Enhancing stability and efficiency of perovskite solar cells with crosslinkable silane-functionalized and doped fullerene. Nature Communications, 2016, 7, 12806.	5.8	350
11	Interface Engineering for Highly Efficient and Stable Planar pâ€iâ€n Perovskite Solar Cells. Advanced Energy Materials, 2018, 8, 1701883.	10.2	338
12	Dimensional Engineering of a Graded 3Dâ€"2D Halide Perovskite Interface Enables Ultrahigh <i>V</i>_{oc} Enhanced Stability in the pâ€iâ€n Photovoltaics. Advanced Energy Materials, 2017, 7, 1701038.	10.2	319
13	Effects of a Molecular Monolayer Modification of NiO Nanocrystal Layer Surfaces on Perovskite Crystallization and Interface Contact toward Faster Hole Extraction and Higher Photovoltaic Performance. Advanced Functional Materials, 2016, 26, 2950-2958.	7.8	305
14	Interfacial Residual Stress Relaxation in Perovskite Solar Cells with Improved Stability. Advanced Materials, 2019, 31, e1904408.	11.1	259
15	Liquid medium annealing for fabricating durable perovskite solar cells with improved reproducibility. Science, 2021, 373, 561-567.	6.0	227
16	Dual Interfacial Modifications Enable High Performance Semitransparent Perovskite Solar Cells with Large Open Circuit Voltage and Fill Factor. Advanced Energy Materials, 2017, 7, 1602333.	10.2	209
17	High performance inverted structure perovskite solar cells based on a PCBM:polystyrene blend electron transport layer. Journal of Materials Chemistry A, 2015, 3, 9098-9102.	5.2	192
18	Boron Doping of Multiwalled Carbon Nanotubes Significantly Enhances Hole Extraction in Carbon-Based Perovskite Solar Cells. Nano Letters, 2017, 17, 2496-2505.	4.5	184

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19	Matching Charge Extraction Contact for Wideâ€Bandgap Perovskite Solar Cells. Advanced Materials, 2017, 29, 1700607.	11.1	178
20	Polyfluorene Derivatives are Highâ€Performance Organic Holeâ€Transporting Materials for Inorganicâ^'Organic Hybrid Perovskite Solar Cells. Advanced Functional Materials, 2014, 24, 7357-7365.	7.8	172
21	Low Temperature Solutionâ€Processed Sb:SnO₂ Nanocrystals for Efficient Planar Perovskite Solar Cells. ChemSusChem, 2016, 9, 2686-2691.	3.6	172
22	Iron-doping-enhanced photoelectrochemical water splitting performance of nanostructured WO₃: a combined experimental and theoretical study. Nanoscale, 2015, 7, 2933-2940.	2.8	171
23	Understanding the relationship between ion migration and the anomalous hysteresis in high-efficiency perovskite solar cells: A fresh perspective from halide substitution. Nano Energy, 2016, 26, 620-630.	8.2	167
24	Profiling the organic cation-dependent degradation of organolead halide perovskite solar cells. Journal of Materials Chemistry A, 2017, 5, 1103-1111.	5.2	155
25	Self-Elimination of Intrinsic Defects Improves the Low-Temperature Performance of Perovskite Photovoltaics. Joule, 2020, 4, 1961-1976.	11.7	152
26	A pure and stable intermediate phase is key to growing aligned and vertically monolithic perovskite crystals for efficient PIN planar perovskite solar cells with high processibility and stability. Nano Energy, 2017, 34, 58-68.	8.2	151
27	Amorphous Ni(OH)₂ Nanoboxes: Fast Fabrication and Enhanced Sensing for Glucose. Small, 2013, 9, 3147-3152.	5.2	145
28	An <i>in situ</i> cross-linked 1D/3D perovskite heterostructure improves the stability of hybrid perovskite solar cells for over 3000 h operation. Energy and Environmental Science, 2020, 13, 4344-4352.	15.6	142
29	Thin-film semiconductor perspective of organometal trihalide perovskite materials for high-efficiency solar cells. Materials Science and Engineering Reports, 2016, 101, 1-38.	14.8	117
30	Molecular design enabled reduction of interface trap density affords highly efficient and stable perovskite solar cells with over 83% fill factor. Nano Energy, 2018, 52, 300-306.	8.2	112
31	Oligomeric Silica-Wrapped Perovskites Enable Synchronous Defect Passivation and Grain Stabilization for Efficient and Stable Perovskite Photovoltaics. ACS Energy Letters, 2019, 4, 1231-1240.	8.8	111
32	Unveiling a Key Intermediate in Solvent Vapor Postannealing to Enlarge Crystalline Domains of Organometal Halide Perovskite Films. Advanced Functional Materials, 2017, 27, 1604944.	7.8	107
33	Synergistic Effects of Euâ€MOF on Perovskite Solar Cells with Improved Stability. Advanced Materials, 2021, 33, e2102947.	11.1	104
34	Progress and Perspective in Lowâ€Dimensional Metal Halide Perovskites for Optoelectronic Applications. Solar Rrl, 2018, 2, 1700186.	3.1	98
35	1000 h Operational Lifetime Perovskite Solar Cells by Ambient Melting Encapsulation. Advanced Energy Materials, 2020, 10, 1902472.	10.2	98
36	An Ultrathin Ferroelectric Perovskite Oxide Layer for Highâ€Performance Hole Transport Material Free Carbon Based Halide Perovskite Solar Cells. Advanced Functional Materials, 2019, 29, 1806506.	7.8	93

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37	Dualâ€Ionâ€Diffusion Induced Degradation in Leadâ€Free Cs₂AgBiBr₆ Double Perovskite Solar Cells. Advanced Functional Materials, 2020, 30, 2002342.	7.8	86
38	Mesoporous SnO₂ single crystals as an effective electron collector for perovskite solar cells. Physical Chemistry Chemical Physics, 2015, 17, 18265-18268.	1.3	82
39	Ultrasound-spray deposition of multi-walled carbon nanotubes on NiO nanoparticles-embedded perovskite layers for high-performance carbon-based perovskite solar cells. Nano Energy, 2017, 42, 322-333.	8.2	82
40	An amorphous precursor route to the conformable oriented crystallization of CH₃NH₃PbBr₃in mesoporous scaffolds: toward efficient and thermally stable carbon-based perovskite solar cells. Journal of Materials Chemistry A, 2016, 4, 12897-12912.	5.2	77
41	Designing new fullerene derivatives as electron transporting materials for efficient perovskite solar cells with improved moisture resistance. Nano Energy, 2016, 30, 341-346.	8.2	72
42	Excess Cesium Iodide Induces Spinodal Decomposition of CsPbI₂Br Perovskite Films. Journal of Physical Chemistry Letters, 2019, 10, 194-199.	2.1	69
43	A PCBM Electron Transport Layer Containing Small Amounts of Dual Polymer Additives that Enables Enhanced Perovskite Solar Cell Performance. Advanced Science, 2016, 3, 1500353.	5.6	67
44	Sandwiched electrode buffer for efficient and stable perovskite solar cells with dual back surface fields. Joule, 2021, 5, 2148-2163.	11.7	63
45	Pinning Down the Anomalous Light Soaking Effect toward High-Performance and Fast-Response Perovskite Solar Cells: The Ion-Migration-Induced Charge Accumulation. Journal of Physical Chemistry Letters, 2017, 8, 5069-5076.	2.1	60
46	Integration of inverse nanocone array based bismuth vanadate photoanodes and bandgap-tunable perovskite solar cells for efficient self-powered solar water splitting. Journal of Materials Chemistry A, 2017, 5, 19091-19097.	5.2	55
47	Molecular Hinges Stabilize Formamidiniumâ€Based Perovskite Solar Cells with Compressive Strain. Advanced Functional Materials, 2022, 32, .	7.8	50
48	Promoting Thermodynamic and Kinetic Stabilities of FA-based Perovskite by an in Situ Bilayer Structure. Nano Letters, 2020, 20, 3864-3871.	4.5	49
49	Strain Modulation for Lightâ€Stable nâ€"iâ€"p Perovskite/Silicon Tandem Solar Cells. Advanced Materials, 2022, 34, e2201315.	11.1	45
50	Understanding the Defect Properties of Quasi-2D Halide Perovskites for Photovoltaic Applications. Journal of Physical Chemistry Letters, 2020, 11, 3521-3528.	2.1	43
51	Hierarchical Dualâ€Scaffolds Enhance Charge Separation and Collection for High Efficiency Semitransparent Perovskite Solar Cells. Advanced Materials Interfaces, 2016, 3, 1600484.	1.9	40
52	Tuning the A-site cation composition of FA perovskites for efficient and stable NiO-based pâ€"iâ€"n perovskite solar cells. Journal of Materials Chemistry A, 2017, 5, 21858-21865.	5.2	39
53	Probing Phase Distribution in 2D Perovskites for Efficient Device Design. ACS Applied Materials & Interfaces, 2020, 12, 3127-3133.	4.0	39
54	Size mismatch induces cation segregation in CsPbI3: Forming energy level gradient and 3D/2D heterojunction promotes the efficiency of carbon-based perovskite solar cells to over 15%. Nano Energy, 2021, 89, 106411.	8.2	39

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55	An Ultraâ€low Concentration of Gold Nanoparticles Embedded in the NiO Hole Transport Layer Boosts the Performance of pâ€iâ€n Perovskite Solar Cells. Solar Rrl, 2019, 3, 1800278.	3.1	38
56	Extracting ammonium halides by solvent from the hybrid perovskites with various dimensions to promote the crystallization of CsPbI3 perovskite. Nano Energy, 2022, 94, 106925.	8.2	35
57	Surface Sulfuration of NiO Boosts the Performance of Inverted Perovskite Solar Cells. Solar Rrl, 2020, 4, 2000270.	3.1	31
58	Cation Diffusion Guides Hybrid Halide Perovskite Crystallization during the Gel Stage. Angewandte Chemie - International Edition, 2020, 59, 5979-5987.	7.2	29
59	The Role of Surface Termination in Halide Perovskites for Efficient Photocatalytic Synthesis. Angewandte Chemie - International Edition, 2020, 59, 12931-12937.	7.2	27
60	Thermal Management Enables More Efficient and Stable Perovskite Solar Cells. ACS Energy Letters, 2021, 6, 3029-3036.	8.8	26
61	High throughput screening of promising lead-free inorganic halide double perovskites <i>via</i> first-principles calculations. Physical Chemistry Chemical Physics, 2022, 24, 3460-3469.	1.3	26
62	In-situ fabrication of dual porous titanium dioxide films as anode for carbon cathode based perovskite solar cell. Journal of Energy Chemistry, 2015, 24, 736-743.	7.1	23
63	A new perspective for evaluating the photoelectric performance of organicâ€“inorganic hybrid perovskites based on the DFT calculations of excited states. Physical Chemistry Chemical Physics, 2021, 23, 11548-11556.	1.3	23
64	Cation Diffusion Guides Hybrid Halide Perovskite Crystallization during the Gel Stage. Angewandte Chemie, 2020, 132, 6035-6043.	1.6	22
65	Structureâ€Dependent Electrocatalysis of Ni(OH)₂ Hourglassâ€like Nanostructures Towards <scp>L</scp>â€Histidine. Chemistry - A European Journal, 2013, 19, 501-508.	1.7	21
66	Avoiding Structural Collapse to Reduce Lead Leakage in Perovskite Photovoltaics. Angewandte Chemie - International Edition, 2022, 61, .	7.2	21
67	Synergistic bonding stabilized interface for perovskite solar cells with over 24% efficiency. Nano Energy, 2022, 100, 107518.	8.2	18
68	Improving Heat Transfer Enables Durable Perovskite Solar Cells. Advanced Energy Materials, 2022, 12, .	10.2	15
69	Amidinium additives for high-performance perovskite solar cells. Journal of Materials Chemistry A, 2022, 10, 3506-3512.	5.2	11
70	A tailored spacer molecule in 2D/3D heterojunction for ultralow-voltage-loss and stable perovskite solar cells. Journal of Materials Chemistry A, 2021, 9, 26829-26838.	5.2	10
71	High Performance Perovskite Solar Cells through Surface Modification, Mixed Solvent Engineering and Nanobowl-Assisted Light Harvesting. MRS Advances, 2016, 1, 3175-3184.	0.5	9
72	HxMoO3âˆ'ynanobelts: an excellent alternative to carbon electrodes for high performance mesoscopic perovskite solar cells. Journal of Materials Chemistry A, 2019, 7, 1499-1508.	5.2	8

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73	A descriptor for the structural stability of organicâ€œinorganic hybrid perovskites based on binding mechanism in electronic structure. Journal of Molecular Modeling, 2022, 28, 80.	0.8	8
74	Avoiding Structural Collapse to Reduce Lead Leakage in Perovskite Photovoltaics. Angewandte Chemie, 0, , .	1.6	6
75	Strategies for Improving Efficiency and Stability of Perovskite Solar Cells. MRS Advances, 2017, 2, 3051-3060.	0.5	3
76	Tailoring molecular termination for thermally stable perovskite solar cells. Journal of Semiconductors, 2021, 42, 112201.	2.0	3
77	Nanostructures: Amorphous Ni(OH)₂ Nanoboxes: Fast Fabrication and Enhanced Sensing for Glucose (Small 18/2013). Small, 2013, 9, 3184-3184.	5.2	2
78	The Role of Surface Termination in Halide Perovskites for Efficient Photocatalytic Synthesis. Angewandte Chemie, 2020, 132, 13031-13037.	1.6	2
79	H _xMoO _{3-Y} Nanobelts: An Excellent Alternative to Carbon Electrode for High Performance Mesoscopic Perovskite Solar Cells. SSRN Electronic Journal, 0, , .	0.4	0