Xiaodan Zhang

List of Publications by Year
in descending order

118 papers	4,320 citations	136950 32 h-index	133252 59 g-index
120 all docs	120 docs citations	120 times ranked	4301 citing authors

#	Article	IF	Citations
1	Two-Dimensional Ruddlesdenâ€“Popper Perovskite with Nanorod-like Morphology for Solar Cells with Efficiency Exceeding 15%. Journal of the American Chemical Society, 2018, 140, 11639-11646.	13.7	397
2	Highly Efficient and Stable Solar Cells Based on Crystalline Oriented 2D/3D Hybrid Perovskite. Advanced Materials, 2019, 31, e1901242.	21.0	210
3	Gradient Energy Alignment Engineering for Planar Perovskite Solar Cells with Efficiency Over 23%. Advanced Materials, 2020, 32, e1905766.	21.0	172
4	Semitransparent Perovskite Solar Cells: From Materials and Devices to Applications. Advanced Materials, 2020, 32, e1806474.	21.0	148
5	Ligandâ€Modulated Excess PbI₂ Nanosheets for Highly Efficient and Stable Perovskite Solar Cells. Advanced Materials, 2020, 32, e2000865.	21.0	136
6	Phase Distribution and Carrier Dynamics in Multiple-Ring Aromatic Spacer-Based Two-Dimensional Ruddlesdenâ€“Popper Perovskite Solar Cells. ACS Nano, 2020, 14, 4871-4881.	14.6	126
7	Cobalt Chloride Hexahydrate Assisted in Reducing Energy Loss in Perovskite Solar Cells with Record Open-Circuit Voltage of 1.20 V. ACS Energy Letters, 2021, 6, 2121-2128.	17.4	117
8	NiO_{<i>x</i>}/Spiro Hole Transport Bilayers for Stable Perovskite Solar Cells with Efficiency Exceeding 21%. ACS Energy Letters, 2020, 5, 79-86.	17.4	104
9	Multifunctional Two-Dimensional Conjugated Materials for Dopant-Free Perovskite Solar Cells with Efficiency Exceeding 22%. ACS Energy Letters, 0, , 1521-1532.	17.4	103
10	Spacer Engineering Using Aromatic Formamidinium in 2D/3D Hybrid Perovskites for Highly Efficient Solar Cells. ACS Nano, 2021, 15, 7811-7820.	14.6	99
11	Unraveling the Passivation Process of PbI₂ to Enhance the Efficiency of Planar Perovskite Solar Cells. Journal of Physical Chemistry C, 2018, 122, 21269-21276.	3.1	97
12	Elucidating the role of chlorine in perovskite solar cells. Journal of Materials Chemistry A, 2017, 5, 7423-7432.	10.3	95
13	Passivation of defects in perovskite solar cell: From a chemistry point of view. Nano Energy, 2020, 77, 105237.	16.0	92
14	Efficient and stable noble-metal-free catalyst for acidic water oxidation. Nature Communications, 2022, 13, 2294.	12.8	89
15	Polymeric Surface Modification of NiO_{<i>x</i>}-Based Inverted Planar Perovskite Solar Cells with Enhanced Performance. ACS Sustainable Chemistry and Engineering, 2018, 6, 16806-16812.	6.7	83
16	Encapsulation of perovskite solar cells for enhanced stability: Structures, materials and characterization. Journal of Power Sources, 2021, 485, 229313.	7.8	82
17	Inverted pyramidally-textured PDMS antireflective foils for perovskite/silicon tandem solar cells with flat top cell. Nano Energy, 2019, 56, 234-240.	16.0	80
18	Suppressed recombination for monolithic inorganic perovskite/silicon tandem solar cells with an approximate efficiency of 23%. EScience, 2022, 2, 339-346.	41.6	78

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19	Stability of Perovskite Solar Cells: Degradation Mechanisms and Remedies. Frontiers in Electronics, 2021, 2, .	3.2	75
20	Insights into the Development of Monolithic Perovskite/Silicon Tandem Solar Cells. Advanced Energy Materials, 2022, 12, 2003628.	19.5	72
21	Modulated Crystallization and Reduced <i>V</i>_{OC} Deficit of Mixed Leadâ€“Tin Perovskite Solar Cells with Antioxidant Caffeic Acid. ACS Energy Letters, 2021, 6, 2907-2916.	17.4	68
22	Transparent electrode for monolithic perovskite/silicon-heterojunction two-terminal tandem solar cells. Nano Energy, 2018, 45, 280-286.	16.0	67
23	Hydrationâ€Effectâ€Promoting Niâ€“Fe Oxyhydroxide Catalysts for Neutral Water Oxidation. Advanced Materials, 2020, 32, e1906806.	21.0	62
24	Wide Bandgap Interface Layer Induced Stabilized Perovskite/Silicon Tandem Solar Cells with Stability over Ten Thousand Hours. Advanced Energy Materials, 2021, 11, 2102046.	19.5	57
25	Aryl Diammonium Iodide Passivation for Efficient and Stable Hybrid Organâ€Inorganic Perovskite Solar Cells. Advanced Functional Materials, 2020, 30, 2002366.	14.9	52
26	High efficiency and high open-circuit voltage quadruple-junction silicon thin film solar cells for future electronic applications. Energy and Environmental Science, 2017, 10, 1134-1141.	30.8	45
27	Monolithic Perovskite/Silicon-Heterojunction Tandem Solar Cells with Open-Circuit Voltage of over 1.8 V. ACS Applied Energy Materials, 2019, 2, 243-249.	5.1	44
28	Solvent Engineering to Balance Light Absorbance and Transmittance in Perovskite for Tandem Solar Cells. Solar Rrl, 2018, 2, 1800176.	5.8	42
29	A mixed hole transport material employing a highly planar conjugated molecule for efficient and stable perovskite solar cells. Journal of Materials Chemistry A, 2020, 8, 5163-5170.	10.3	40
30	Exploring the mechanism of a pure and amorphous black-blue TiO2:H thin film as a photoanode in water splitting. Nano Energy, 2017, 42, 151-156.	16.0	36
31	Light Management in Monolithic Perovskite/Silicon Tandem Solar Cells. Solar Rrl, 2020, 4, 1900206.	5.8	36
32	Inorganic material passivation of defects toward efficient perovskite solar cells. Science Bulletin, 2020, 65, 2022-2032.	9.0	36
33	Defects Healing in Two-Step Deposited Perovskite Solar Cells via Formamidinium Iodide Compensation. ACS Applied Energy Materials, 2020, 3, 3318-3327.	5.1	32
34	Improvement of solar cells performance by boron doped amorphous silicon carbide/nanocrystalline silicon hybrid window layers. Solar Energy Materials and Solar Cells, 2013, 114, 9-14.	6.2	31
35	Toward Efficient and Stable Perovskite Solar Cells: Choosing Appropriate Passivator to Specific Defects. Solar Rrl, 2020, 4, 2000308.	5.8	31
36	2D perovskite or organic material matter? Targeted growth for efficient perovskite solar cells with efficiency exceeding 24%. Nano Energy, 2022, 94, 106914.	16.0	31

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37	Delayed Annealing Treatment for High-Quality CuSCN: Exploring Its Impact on Bifacial Semitransparent n-i-p Planar Perovskite Solar Cells. ACS Applied Energy Materials, 2018, 1, 1575-1584.	5.1	30
38	Cesium Halides-Assisted Crystal Growth of Perovskite Films for Efficient Planar Heterojunction Solar Cells. Chemistry of Materials, 2018, 30, 5264-5271.	6.7	30
39	Compound Homojunction:Heterojunction Reduces Bulk and Interface Recombination in ZnO Photoanodes for Water Splitting. Small, 2017, 13, 1603527.	10.0	29
40	An over 20% solar-to-hydrogen efficiency system comprising a self-reconstructed NiCoFe-based hydroxide nanosheet electrocatalyst and monolithic perovskite/silicon tandem solar cell. Journal of Materials Chemistry A, 2021, 9, 14085-14092.	10.3	29
41	CsPbCl₃â€Clusterâ€Widened Bandgap and Inhibited Phase Segregation in a Wideâ€Bandgap Perovskite and its Application to NiO<i>_x</i>â€Based Perovskite/Silicon Tandem Solar Cells. Advanced Materials, 2022, 34, e2201451.	21.0	29
42	Low-Temperature Oxide/Metal/Oxide Multilayer Films as Highly Transparent Conductive Electrodes for Optoelectronic Devices. ACS Applied Energy Materials, 2021, 4, 6553-6561.	5.1	26
43	Multifunctional Molecule Engineered SnO₂ for Perovskite Solar Cells with High Efficiency and Reduced Lead Leakage. Solar Rrl, 2021, 5, 2100464.	5.8	26
44	Selective electrochemical reduction of carbon dioxide to ethylene on a copper hydroxide nitrate nanostructure electrode. Nanoscale, 2020, 12, 17013-17019.	5.6	24
45	Improved amorphous/crystalline silicon interface passivation for heterojunction solar cells by low-temperature chemical vapor deposition and post-annealing treatment. Physical Chemistry Chemical Physics, 2014, 16, 20202.	2.8	23
46	Acetate Anion Assisted Crystal Orientation Reconstruction in Organicâ€“Inorganic Lead Halide Perovskite. ACS Applied Energy Materials, 2018, 1, 2730-2739.	5.1	23
47	Efficient and Stable Perovskite Solar Cell Achieved with Bifunctional Interfacial Layers. ACS Applied Materials & Interfaces, 2019, 11, 25218-25226.	8.0	23
48	Room-temperature sputtered tungsten-doped indium oxide for improved current in silicon heterojunction solar cells. Solar Energy Materials and Solar Cells, 2021, 227, 111082.	6.2	23
49	High efficiency triple junction thin film silicon solar cells with optimized electrical structure. Progress in Photovoltaics: Research and Applications, 2015, 23, 1313-1322.	8.1	21
50	Activity enhancement <i>via</i> borate incorporation into a NiFe (oxy)hydroxide catalyst for electrocatalytic oxygen evolution. Journal of Materials Chemistry A, 2018, 6, 16959-16964.	10.3	21
51	High-Mobility Hydrogenated Fluorine-Doped Indium Oxide Film for Passivating Contacts c-Si Solar Cells. ACS Applied Materials & Interfaces, 2019, 11, 45586-45595.	8.0	21
52	Effects of guanidinium cations on structural, optoelectronic and photovoltaic properties of perovskites. Journal of Energy Chemistry, 2021, 58, 48-54.	12.9	21
53	Water Stable Haloplumbate Modulation for Efficient and Stable Hybrid Perovskite Photovoltaics. Advanced Energy Materials, 2021, 11, 2101082.	19.5	21
54	Silicon heterojunction-based tandem solar cells: past, status, and future prospects. Nanophotonics, 2021, 10, 2001-2022.	6.0	21

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55	In situ grown size-controlled silicon nanocrystals: A p type nanocrystalline-Si:H/a-SiCx:H superlattice (p-nc-Si:H/a-SiCx:H) approach. Solar Energy Materials and Solar Cells, 2014, 123, 228-232.	6.2	20
56	Graphenized Carbon Nanofiber: A Novel Lightâ€Trapping and Conductive Material to Achieve an Efficiency Breakthrough in Silicon Solar Cells. Advanced Materials, 2015, 27, 849-855.	21.0	20
57	Role of Moisture in the Preparation of Efficient Planar Perovskite Solar Cells. ACS Sustainable Chemistry and Engineering, 2019, 7, 17691-17696.	6.7	20
58	Room-temperature quantum interference in single perovskite quantum dot junctions. Nature Communications, 2019, 10, 5458.	12.8	20
59	Composite electron transport layer for efficient N-I-P type monolithic perovskite/silicon tandem solar cells with high open-circuit voltage. Journal of Energy Chemistry, 2021, 63, 461-467.	12.9	20
60	Humidityâ€Resistant Flexible Perovskite Solar Cells with Over 20% Efficiency. Solar Rrl, 2021, 5, 2000795.	5.8	19
61	UV light absorbers executing synergistic effects of passivating defects and improving photostability for efficient perovskite photovoltaics. Journal of Energy Chemistry, 2022, 67, 138-146.	12.9	19
62	Towards bifacial silicon heterojunction solar cells with reduced TCO use. Progress in Photovoltaics: Research and Applications, 2022, 30, 750-762.	8.1	19
63	Boron doped nanocrystalline silicon/amorphous silicon hybrid emitter layers used to improve the performance of silicon heterojunction solar cells. Solar Energy, 2014, 108, 308-314.	6.1	18
64	Fill factor improvement in PIN type hydrogenated amorphous silicon germanium thin film solar cells: Omnipotent N type Î¼c-SiO :H layer. Solar Energy Materials and Solar Cells, 2015, 140, 450-456.	6.2	18
65	High-quality hydrogenated intrinsic amorphous silicon oxide layers treated by H2 plasma used as the p/i buffer layers in hydrogenated amorphous silicon solar cells. Solar Energy Materials and Solar Cells, 2015, 136, 172-176.	6.2	18
66	Optical/Electrical Integrated Design of Coreâ€"Shell Aluminum-Based Plasmonic Nanostructures for Record-Breaking Efficiency Enhancements in Photovoltaic Devices. ACS Photonics, 2017, 4, 2102-2110.	6.6	18
67	Realization of 16.9% Efficiency on Nanowires Heterojunction Solar Cells with Dopantâ€Free Contact for Bifacial Polarities. Advanced Functional Materials, 2018, 28, 1805001.	14.9	18
68	Rational modulating electronegativity of substituents in amorphous metal-organic frameworks for water oxidation catalysis. International Journal of Hydrogen Energy, 2020, 45, 9723-9732.	7.1	18
69	Manipulated Crystallization and Passivated Defects for Efficient Perovskite Solar Cells via Addition of Ammonium Iodide. ACS Applied Materials & Interfaces, 2021, 13, 34053-34063.	8.0	18
70	Improvement in performance of hydrogenated amorphous silicon solar cells with hydrogenated intrinsic amorphous silicon oxide p/i buffer layers. Solar Energy Materials and Solar Cells, 2014, 128, 394-398.	6.2	17
71	Microâ€Electrode with Fast Mass Transport for Enhancing Selectivity of Carbonaceous Products in Electrochemical CO₂ Reduction. Advanced Functional Materials, 2021, 31, 2103966.	14.9	16
72	Management of light trapping capability of AZO film for Si thin film solar cells-via tailoring surface texture. Solar Energy Materials and Solar Cells, 2018, 179, 401-408.	6.2	15

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73	Control Perovskite Crystals Vertical Growth for Obtaining Highâ€Performance Monolithic Perovskite/Silicon Heterojunction Tandem Solar Cells with <i>V</i>_{OC} of 1.93â€‰V. Solar Rrl, 2021, 5, 2100357.	5.8	15
74	Light management in hydrogenated amorphous silicon germanium solar cells. Solar Energy Materials and Solar Cells, 2014, 128, 1-10.	6.2	14
75	A catalyst-free amorphous silicon-based tandem thin film photocathode with high photovoltage for solar water splitting. Journal of Materials Chemistry A, 2015, 3, 15583-15590.	10.3	14
76	Increasing efficiency of hierarchical nanostructured heterojunction solar cells to 16.3% via controlling interface recombination. Journal of Materials Chemistry A, 2015, 3, 22902-22907.	10.3	14
77	Novel insight into the function of PC61BM in efficient planar perovskite solar cells. Nano Energy, 2016, 27, 561-568.	16.0	14
78	High near-infrared wavelength response planar silicon-heterojunction solar cells. Solar Energy Materials and Solar Cells, 2018, 185, 124-129.	6.2	14
79	High open-circuit voltage (1.04 V) nâ€"iâ€"p type thin film silicon solar cell by two-phase silicon carbide intrinsic material. Solar Energy Materials and Solar Cells, 2014, 130, 561-566.	6.2	13
80	Perovskite-based tandem solar cells gallop ahead. Joule, 2022, 6, 509-511.	24.0	13
81	Performance Promotion through Dual-Interface Engineering of CuSCN Layers in Planar Perovskite Solar Cells. Journal of Physical Chemistry C, 2020, 124, 27977-27984.	3.1	12
82	Highly efficient bifacial semitransparent perovskite solar cells based on molecular doping of CuSCN hole transport layer*. Chinese Physics B, 2020, 29, 078801.	1.4	12
83	Realizing the Potential of RF-Sputtered Hydrogenated Fluorine-Doped Indium Oxide as an Electrode Material for Ultrathin SiOx/Poly-Si Passivating Contacts. ACS Applied Energy Materials, 2020, 3, 8606-8618.	5.1	11
84	Innovative Wide-Spectrum Mg and Ga-Codoped ZnO Transparent Conductive Films Grown via Reactive Plasma Deposition for Si Heterojunction Solar Cells. ACS Applied Energy Materials, 2020, 3, 1574-1584.	5.1	11
85	High-Performance and Stable Perovskite-Based Photoanode Encapsulated by Blanket-Cover Method. ACS Applied Energy Materials, 2021, 4, 7526-7534.	5.1	11
86	Reduced defects and enhanced Vbi in perovskite absorbers through synergetic passivating effect using 4-methoxyphenylacetic acid. Journal of Power Sources, 2022, 518, 230734.	7.8	11
87	Optimal design of one-dimensional photonic crystal back reflectors for thin-film silicon solar cells. Journal of Applied Physics, 2014, 116, 064508.	2.5	10
88	Periodically textured metal electrodes: large-area fabrication, characterization, simulation, and application as efficient back-reflective scattering contact-electrodes for thin-film solar cells. Journal of Materials Chemistry A, 2014, 2, 13259-13269.	10.3	10
89	High-efficiency micromorph solar cell with light management in tunnel recombination junction. Solar Energy Materials and Solar Cells, 2016, 155, 469-473.	6.2	10
90	The correlation of material properties and deposition condition of ZnON thin films. AIP Advances, 2017, 7, .	1.3	10

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91	SiH4 enhanced dissociation via argon plasma assistance for hydrogenated microcrystalline silicon thin-film deposition and application in tandem solar cells. Solar Energy Materials and Solar Cells, 2018, 180, 110-117.	6.2	10
92	The influence of perpendicular transport behavior on the properties of n-i-p type amorphous silicon solar cells. Solar Energy Materials and Solar Cells, 2014, 120, 635-641.	6.2	9
93	Theoretical insights into highly transparent multi-sized conducting films with high-haze and wide-angular scattering for thin film solar cells. Journal of Power Sources, 2015, 297, 68-74.	7.8	9
94	Modify the Schottky contact between fluorine-doped tin oxide front electrode and p-a-SiC:H by carbon dioxide plasma treatment. Solar Energy, 2016, 134, 375-382.	6.1	9
95	Controlling performance of a-Si:H solar cell with SnO2:F front electrode by introducing dual p-layers with p-a-SiO :H/p-nc-SiO :H nanostructure. Solar Energy, 2018, 171, 907-913.	6.1	9
96	Scalable and efficient perovskite solar cells prepared by grooved roller coating. Journal of Materials Chemistry A, 2019, 7, 1870-1877.	10.3	9
97	Self-formed PbI2-DMSO adduct for highly efficient and stable perovskite solar cells. Applied Physics Letters, 2019, 115, .	3.3	9
98	Perovskite/silicon-based heterojunction tandem solar cells with 14.8% conversion efficiency via adopting ultrathin Au contact. Journal of Semiconductors, 2017, 38, 014003.	3.7	8
99	Toward Efficient and Stable Perovskite Solar Cells: Choosing Appropriate Passivator to Specific Defects. Solar Rrl, 2020, 4, 2070104.	5.8	8
100	Integrated and Unassisted Solar Waterâ€Splitting System by Monolithic Perovskite/Silicon Tandem Solar Cell. Solar Rrl, 2022, 6, 2100748.	5.8	8
101	Broad-Spectrum Ultrathin-Metal-Based Oxide/Metal/Oxide Transparent Conductive Films for Optoelectronic Devices. ACS Applied Materials & Interfaces, 2021, 13, 58539-58551.	8.0	8
102	Controlling the Crystallographic Orientation of Sb₂Se₃ Film for Efficient Photoelectrochemical Water Splitting. Solar Rrl, 2022, 6, .	5.8	8
103	A new type counter electrode for dye-sensitized solar cells. Science in China Series D: Earth Sciences, 2009, 52, 1923-1927.	0.9	7
104	Cost-effective hollow honeycomb textured back reflector for flexible thin film solar cells. Solar Energy Materials and Solar Cells, 2016, 155, 128-133.	6.2	6
105	Controllable Simultaneous Bifacial Cuâ€plating for High Efficiency Crystalline Silicon Solar Cells. Solar Rrl, 0, , .	5.8	6
106	Investigation of H 2 /CH 4 mixed gas plasma post-etching process for ZnO:B front contacts grown by LP-MOCVD method in silicon-based thin-film solar cells. Applied Surface Science, 2014, 316, 508-514.	6.1	5
107	Origin of Photovoltage Enhancement via Interfacial Modification with Silver Nanoparticles Embedded in an a-SiC:H p-Type Layer in a-Si:H Solar Cells. ACS Applied Materials & Interfaces, 2017, 9, 11184-11192.	8.0	5
108	Substrate effect on ultra-thin hydrogenated amorphous silicon solar cells. Solar Energy Materials and Solar Cells, 2017, 171, 222-227.	6.2	5

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109	I/P interface modification for stable and efficient perovskite solar cells. Journal of Semiconductors, 2020, 41, 052202.	3.7	5
110	Potassium chloride templated Î±-FAPbI3 perovskite crystal growth for efficient planar perovskite solar cells. Organic Electronics, 2022, 106, 106527.	2.6	5
111	Tin dioxide buffer layer-assisted efficiency and stability of wide-bandgap inverted perovskite solar cells. Journal of Semiconductors, 2022, 43, 052201.	3.7	5
112	Tuning of the open-circuit voltage by wide band-gap absorber and doped layers in thin film silicon solar cells. Physica Status Solidi - Rapid Research Letters, 2015, 9, 453-456.	2.4	3
113	Direct Comparison of Electron Transport and Recombination Behaviors of Dye-Sensitized Solar Cells Prepared Using Different Sintering Processes. ACS Sustainable Chemistry and Engineering, 2018, 6, 7193-7198.	6.7	3
114	A facile light managing strategy in inverted perovskite solar cells. JPhys Energy, 2021, 3, 035004.	5.3	3
115	Silicon Solar Cells: Graphenized Carbon Nanofiber: A Novel Light-Trapping and Conductive Material to Achieve an Efficiency Breakthrough in Silicon Solar Cells (Adv. Mater. 5/2015). Advanced Materials, 2015, 27, 848-848.	21.0	1
116	Research Progresses on High Efficiency Amorphous and Microcrystalline Silicon-Based Thin Film Solar Cells. Materials Research Society Symposia Proceedings, 2010, 1245, 1.	0.1	0
117	High-efficiency a-Si:H/μc-Si:H solar cells by optimizing A-Si:H and μc-Si:H sub-cells. , 2013, , .		0
118	Insights into the effect of bromineâ€based organic salts on the efficiency and stability of wide bandgap perovskite. Nano Select, 2021, 2, 615-623.	3.7	0