Wenchao Huang

List of Publications by Year
in descending order

68 papers	7,749 citations	87888 38 h-index	85541 71 g-index
73 all docs	73 docs citations	73 times ranked	9252 citing authors

#	ARTICLE	IF	CITATIONS
1	A Fast Depositionâ€Crystallization Procedure for Highly Efficient Lead Iodide Perovskite Thinâ€Film Solar Cells. Angewandte Chemie - International Edition, 2014, 53, 9898-9903.	13.8	1,292
2	Gas-assisted preparation of lead iodide perovskite films consisting of a monolayer of single crystalline grains for high efficiency planar solar cells. Nano Energy, 2014, 10, 10-18.	16.0	504
3	Enabling low voltage losses and high photocurrent in fullerene-free organic photovoltaics. Nature Communications, 2019, 10, 570.	12.8	377
4	Understanding charge transport in lead iodide perovskite thin-film field-effect transistors. Science Advances, 2017, 3, e1601935.	10.3	354
5	Lead halideâ€"templated crystallization of methylamine-free perovskite for efficient photovoltaic modules. Science, 2021, 372, 1327-1332.	12.6	351
6	Tailored Phase Conversion under Conjugated Polymer Enables Thermally Stable Perovskite Solar Cells with Efficiency Exceeding 21%. Journal of the American Chemical Society, 2018, 140, 17255-17262.	13.7	235
7	Carbon Quantum Dots/TiO_{<i>x</i>} Electron Transport Layer Boosts Efficiency of Planar Heterojunction Perovskite Solar Cells to 19%. Nano Letters, 2017, 17, 2328-2335.	9.1	211
8	Efficient Planar Perovskite Solar Cells with Improved Fill Factor via Interface Engineering with Graphene. Nano Letters, 2018, 18, 2442-2449.	9.1	195
9	Reconfiguring the band-edge states of photovoltaic perovskites by conjugated organic cations. Science, 2021, 371, 636-640.	12.6	184
10	Rational Tuning of Molecular Interaction and Energy Level Alignment Enables Highâ€Performance Organic Photovoltaics. Advanced Materials, 2019, 31, e1904215.	21.0	162
11	Highly Efficient Allâ€Smallâ€Molecule Organic Solar Cells with Appropriate Active Layer Morphology by Side Chain Engineering of Donor Molecules and Thermal Annealing. Advanced Materials, 2020, 32, e1908373.	21.0	162
12	Highâ€Performance Organic Bulkâ€Heterojunction Solar Cells Based on Multipleâ€Donor or Multipleâ€Acceptor Components. Advanced Materials, 2018, 30, 1705706.	21.0	161
13	A Quinoxalineâ€Based Dâ€"A Copolymer Donor Achieving 17.62% Efficiency of Organic Solar Cells. Advanced Materials, 2021, 33, e2100474.	21.0	155
14	Amorphous hole-transporting layer in slot-die coated perovskite solar cells. Nano Energy, 2017, 31, 210-217.	16.0	142
15	Promoting charge separation resulting in ternary organic solar cells efficiency over 17.5%. Nano Energy, 2020, 78, 105272.	16.0	132
16	17% efficient printable mesoscopic PIN metal oxide framework perovskite solar cells using cesium-containing triple cation perovskite. Journal of Materials Chemistry A, 2017, 5, 22952-22958.	10.3	119
17	Unique Energy Alignments of a Ternary Material System toward Highâ€Performance Organic Photovoltaics. Advanced Materials, 2018, 30, e1801501.	21.0	116
18	Ternary System with Controlled Structure: A New Strategy toward Efficient Organic Photovoltaics. Advanced Materials, 2018, 30, 1705243.	21.0	105

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19	Efficient and Mechanically Robust Ultraflexible Organic Solar Cells Based on Mixed Acceptors. Joule, 2020, 4, 128-141.	24.0	101
20	Unraveling the Morphology of High Efficiency Polymer Solar Cells Based on the Donor Polymer PBDTTTâ€EFT. Advanced Energy Materials, 2015, 5, 1401259.	19.5	100
21	Efficient planar perovskite solar cells using halide Sr-substituted Pb perovskite. Nano Energy, 2017, 36, 213-222.	16.0	100
22	Synthesis, characterization and properties of biocompatible poly(glycerol sebacate) preâ€polymer and gel. Polymer International, 2013, 62, 534-547.	3.1	95
23	Enhancing the Optoelectronic Performance of Perovskite Solar Cells via a Textured CH₃NH₃PbI₃ Morphology. Advanced Functional Materials, 2016, 26, 1278-1285.	14.9	90
24	A Nontoxic Bifunctional (Anti)Solvent as Digestiveâ€Ripening Agent for Highâ€Performance Perovskite Solar Cells. Advanced Materials, 2020, 32, e1907123.	21.0	82
25	Atomically thin lateral pâ€“n junction photodetector with large effective detection area. 2D Materials, 2016, 3, 041001.	4.4	78
26	Stable high efficiency dye-sensitized solar cells based on a cobalt polymer gel electrolyte. Chemical Communications, 2013, 49, 8997.	4.1	76
27	Recent progress on stability issues of organicâ€“inorganic hybrid lead perovskite-based solar cells. RSC Advances, 2016, 6, 89356-89366.	3.6	69
28	20% Efficient Perovskite Solar Cells with 2D Electron Transporting Layer. Advanced Functional Materials, 2019, 29, 1805168.	14.9	67
29	Advances in design engineering and merits of electron transporting layers in perovskite solar cells. Materials Horizons, 2020, 7, 2276-2291.	12.2	66
30	Achieving ordered and stable binary metal perovskite via strain engineering. Nano Energy, 2018, 48, 117-127.	16.0	60
31	Probing Molecular and Crystalline Orientation in Solutionâ€Processed Perovskite Solar Cells. Advanced Functional Materials, 2015, 25, 5529-5536.	14.9	57
32	Controlling Interfacial Recombination in Aqueous Dyeâ€Sensitized Solar Cells by Octadecyltrichlorosilane Surface Treatment. Angewandte Chemie - International Edition, 2014, 53, 6933-6937.	13.8	55
33	Highly efficient organic photovoltaics with enhanced stability through the formation of doping-induced stable interfaces. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 6391-6397.	7.1	53
34	Dynamic Antisolvent Engineering for Spin Coating of 10â€‰Ã—â€‰10â€‰cm² Perovskite Solar Module Approaching 18%. Solar Rrl, 2020, 4, 1900263.	5.8	52
35	Surface modification <i>via</i> self-assembling large cations for improved performance and modulated hysteresis of perovskite solar cells. Journal of Materials Chemistry A, 2019, 7, 6793-6800.	10.3	48
36	Fatigue stability of CH3NH3PbI3 based perovskite solar cells in day/night cycling. Nano Energy, 2019, 58, 687-694.	16.0	46

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37	Structure engineering of hierarchical layered perovskite interface for efficient and stable wide bandgap photovoltaics. Nano Energy, 2020, 75, 104917.	16.0	44
38	Nonâ€Halogenatedâ€Solvent Processed and Additiveâ€Free Tandem Organic Solar Cell with Efficiency Reaching 16.67%. Advanced Functional Materials, 2021, 31, 2102361.	14.9	40
39	A comparative study on poly(xylitol sebacate) and poly(glycerol sebacate): mechanical properties, biodegradation and cytocompatibility. Biomedical Materials (Bristol), 2013, 8, 035006.	3.3	39
40	Tuning Rheological Performance of Silica Concentrated Shear Thickening Fluid by Using Graphene Oxide. Advances in Condensed Matter Physics, 2015, 2015, 1-5.	1.1	38
41	A facile approach to alleviate photochemical degradation in high efficiency polymer solar cells. Journal of Materials Chemistry A, 2015, 3, 16313-16319.	10.3	38
42	Influence of Fullerene Acceptor on the Performance, Microstructure, and Photophysics of Low Bandgap Polymer Solar Cells. Advanced Energy Materials, 2017, 7, 1602197.	19.5	38
43	Modulation of J-Aggregation of Nonfullerene Acceptors toward Near-Infrared Absorption and Enhanced Efficiency. Macromolecules, 2020, 53, 3747-3755.	4.8	38
44	Stabilizing High Efficiency Perovskite Solar Cells with 3D-2D Heterostructures. Joule, 2020, 4, 975-979.	24.0	37
45	In-Depth Understanding of the Morphologyâ€"Performance Relationship in Polymer Solar Cells. ACS Applied Materials & Interfaces, 2015, 7, 14026-14034.	8.0	36
46	Titania nanobundle networks as dye-sensitized solar cell photoanodes. Nanoscale, 2014, 6, 3704-3711.	5.6	34
47	Durable Ultraflexible Organic Photovoltaics with Novel Metalâ€Oxideâ€Free Cathode. Advanced Functional Materials, 2019, 29, 1808378.	14.9	34
48	Rapid Microwaveâ€Annealing Process of Hybrid Perovskites to Eliminate Miscellaneous Phase for High Performance Photovoltaics. Advanced Science, 2020, 7, 2000480.	11.2	34
49	Detection of Halomethanes Using Cesium Lead Halide Perovskite Nanocrystals. ACS Nano, 2021, 15, 1454-1464.	14.6	32
50	Isolating and quantifying the impact of domain purity on the performance of bulk heterojunction solar cells. Energy and Environmental Science, 2017, 10, 1843-1853.	30.8	31
51	High Mobility Indium Oxide Electron Transport Layer for an Efficient Charge Extraction and Optimized Nanomorphology in Organic Photovoltaics. Nano Letters, 2018, 18, 5805-5811.	9.1	31
52	Stable perovskite solar cells with efficiency of 22.6% via quinoxaline-based polymeric hole transport material. Science China Chemistry, 2021, 64, 2035-2044.	8.2	28
53	High Efficiency Non-fullerene Organic Tandem Photovoltaics Based on Ternary Blend Subcells. Nano Letters, 2018, 18, 7977-7984.	9.1	27
54	Oriented Attachment as the Mechanism for Microstructure Evolution in Chloride-Derived Hybrid Perovskite Thin Films. ACS Applied Materials & Interfaces, 2019, 11, 39930-39939.	8.0	26

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55	Non-equivalent D-A copolymerization strategy towards highly efficient polymer donor for polymer solar cells. Science China Chemistry, 2021, 64, 1031-1038.	8.2	25
56	Impact of Fullerene Mixing Behavior on the Microstructure, Photophysics, and Device Performance of Polymer/Fullerene Solar Cells. ACS Applied Materials & Interfaces, 2016, 8, 29608-29618.	8.0	24
57	Heating induced aggregation in non-fullerene organic solar cells towards high performance. Journal of Energy Chemistry, 2021, 54, 131-137.	12.9	21
58	Highâ€Efficiency Organic Tandem Solar Cells With Effective Transition Metal Chelates Interconnecting Layer. Solar Rrl, 2017, 1, 1700139.	5.8	19
59	Suppressed hysteresis and enhanced performance of triple cation perovskite solar cell with chlorine incorporation. Journal of Materials Chemistry C, 2018, 6, 13157-13161.	5.5	18
60	High efficiency solid-state dye-sensitized solar cells using a cobalt(<scp>ii</scp>/<scp>iii</scp>) redox mediator. Journal of Materials Chemistry C, 2017, 5, 4875-4883.	5.5	14
61	Metal Evaporation-Induced Degradation of Fullerene Acceptors in Polymer/Fullerene Solar Cells. ACS Applied Materials & Interfaces, 2016, 8, 2247-2254.	8.0	13
62	Multiple Roles of Cobalt Pyrazol-Pyridine Complexes in High-Performing Perovskite Solar Cells. Journal of Physical Chemistry Letters, 2019, 10, 4675-4682.	4.6	13
63	An alternative flexible electrode for dye-sensitized solar cells. Journal of Nanoparticle Research, 2012, 14, 1.	1.9	10
64	Sub-sized monovalent alkaline cations enhanced electrical stability for over 17% hysteresis-free planar perovskite solar mini-module. Electrochimica Acta, 2019, 306, 635-642.	5.2	9
65	Design of a Rigid Scaffold Structure toward Efficient and Stable Organic Photovoltaics. Matter, 2019, 1, 402-411.	10.0	8
66	Correlation of Nanomorphology with Structural and Spectroscopic Studies in Organic Solar Cells. ACS Applied Nano Materials, 2020, 3, 11080-11089.	5.0	7
67	Effects of Carbon Nanofiber on Dielectric Properties of PMN/CNFs/EP Composites. Polymer-Plastics Technology and Engineering, 2011, 50, 1590-1593.	1.9	2
68	Light induced quasi-Fermi level splitting in molecular semiconductor alloys. Materials Advances, 0, , .	5.4	2