Hongwei Han

List of Publications by Year
in descending order

118 papers	13,388 citations	46918 47 h-index	21474 114 g-index
121 all docs	121 docs citations	121 times ranked	10685 citing authors

#	Article	IF	Citations
1	A hole-conductorâ€“free, fully printable mesoscopic perovskite solar cell with high stability. Science, 2014, 345, 295-298.	6.0	2,685
2	Challenges for commercializing perovskite solar cells. Science, 2018, 361, .	6.0	1,327
3	Improved performance and stability of perovskite solar cells by crystal crosslinking with alkylphosphonic acid Ï‰-ammonium chlorides. Nature Chemistry, 2015, 7, 703-711.	6.6	1,033
4	Full Printable Processed Mesoscopic CH3NH3PbI3/TiO2 Heterojunction Solar Cells with Carbon Counter Electrode. Scientific Reports, 2013, 3, 3132.	1.6	697
5	Fully Printable Mesoscopic Perovskite Solar Cells with Organic Silane Self-Assembled Monolayer. Journal of the American Chemical Society, 2015, 137, 1790-1793.	6.6	414
6	Beyond Efficiency: the Challenge of Stability in Mesoscopic Perovskite Solar Cells. Advanced Energy Materials, 2015, 5, 1501066.	10.2	395
7	Outdoor Performance and Stability under Elevated Temperatures and Longâ€Term Light Soaking of Tripleâ€Layer Mesoporous Perovskite Photovoltaics. Energy Technology, 2015, 3, 551-555.	1.8	336
8	Stable Largeâ€Area (10â€‰Ã—â€‰10â€‰cm²) Printable Mesoscopic Perovskite Module Exceeding 10% Efficiency. Solar Rrl, 2017, 1, 1600019.	3.1	272
9	Synergy of ammonium chloride and moisture on perovskite crystallization for efficient printable mesoscopic solar cells. Nature Communications, 2017, 8, 14555.	5.8	270
10	Chlorine-Incorporation-Induced Formation of the Layered Phase for Antimony-Based Lead-Free Perovskite Solar Cells. Journal of the American Chemical Society, 2018, 140, 1019-1027.	6.6	241
11	A Review on Additives for Halide Perovskite Solar Cells. Advanced Energy Materials, 2020, 10, 1902492.	10.2	240
12	Hole-Conductor-Free Mesoscopic TiO₂/CH₃NH₃PbI₃ Heterojunction Solar Cells Based on Anatase Nanosheets and Carbon Counter Electrodes. Journal of Physical Chemistry Letters, 2014, 5, 2160-2164.	2.1	224
13	Stabilizing Perovskite Solar Cells to IEC61215:2016 Standards with over 9,000-h Operational Tracking. Joule, 2020, 4, 2646-2660.	11.7	218
14	Improved Performance of Printable Perovskite Solar Cells with Bifunctional Conjugated Organic Molecule. Advanced Materials, 2018, 30, 1705786.	11.1	209
15	The effect of carbon counter electrodes on fully printable mesoscopic perovskite solar cells. Journal of Materials Chemistry A, 2015, 3, 9165-9170.	5.2	207
16	Tunable hysteresis effect for perovskite solar cells. Energy and Environmental Science, 2017, 10, 2383-2391.	15.6	188
17	Holeâ€Conductorâ€Free Fully Printable Mesoscopic Solar Cell with Mixedâ€Anion Perovskite CH₃NH₃PbI_{(3â^'}<i>_x</i>₎(BF₄)<i>_x</i>. Advanced Energy Materials, 2016, 6, 1502009.	10.2	161
18	The size effect of TiO₂ nanoparticles on a printable mesoscopic perovskite solar cell. Journal of Materials Chemistry A, 2015, 3, 9103-9107.	5.2	153

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19	Effect of guanidinium on mesoscopic perovskite solar cells. Journal of Materials Chemistry A, 2017, 5, 73-78.	5.2	146
20	A Review on Scaling Up Perovskite Solar Cells. Advanced Functional Materials, 2021, 31, 2008621.	7.8	143
21	Solvent effect on the hole-conductor-free fully printable perovskite solar cells. Nano Energy, 2016, 27, 130-137.	8.2	141
22	Encapsulation of Printable Mesoscopic Perovskite Solar Cells Enables High Temperature and Longâ€Term Outdoor Stability. Advanced Functional Materials, 2019, 29, 1809129.	7.8	133
23	Suppressed Ion Migration in Reduced-Dimensional Perovskites Improves Operating Stability. ACS Energy Letters, 2019, 4, 1521-1527.	8.8	130
24	Toward Industrial-Scale Production of Perovskite Solar Cells: Screen Printing, Slot-Die Coating, and Emerging Techniques. Journal of Physical Chemistry Letters, 2018, 9, 2707-2713.	2.1	124
25	Cooperative kinetics of depolarization in CH₃NH₃PbI₃ perovskite solar cells. Energy and Environmental Science, 2015, 8, 910-915.	15.6	116
26	Critical parameters in TiO2/ZrO2/Carbon-based mesoscopic perovskite solar cell. Journal of Power Sources, 2015, 293, 533-538.	4.0	114
27	Evidence for Aggregation-Induced Emission from Free Rotation Restriction of Double Bond at Excited State. Organic Letters, 2018, 20, 373-376.	2.4	103
28	Lead-Free Dionâ€“Jacobson Tin Halide Perovskites for Photovoltaics. ACS Energy Letters, 2019, 4, 276-277.	8.8	101
29	Improvement and Regeneration of Perovskite Solar Cells via Methylamine Gas Postâ€Treatment. Advanced Functional Materials, 2017, 27, 1703060.	7.8	89
30	Highly ordered mesoporous carbon for mesoscopic CH3NH3PbI3/TiO2 heterojunction solar cell. Journal of Materials Chemistry A, 2014, 2, 8607.	5.2	88
31	High performance organic sensitizers based on 11,12-bis(hexyloxy) dibenzo[a,c]phenazine for dye-sensitized solar cells. Journal of Materials Chemistry, 2012, 22, 18830.	6.7	86
32	Tailoring the Dimensionality of Hybrid Perovskites in Mesoporous Carbon Electrodes for Typeâ€II Band Alignment and Enhanced Performance of Printable Holeâ€Conductorâ€Free Perovskite Solar Cells. Advanced Energy Materials, 2021, 11, 2100292.	10.2	85
33	Boron-Doped Graphite for High Work Function Carbon Electrode in Printable Hole-Conductor-Free Mesoscopic Perovskite Solar Cells. ACS Applied Materials & Interfaces, 2017, 9, 31721-31727.	4.0	83
34	Oxygen management in carbon electrode for high-performance printable perovskite solar cells. Nano Energy, 2018, 53, 160-167.	8.2	83
35	Enhanced electronic properties in CH₃NH₃PbI₃via LiCl mixing for hole-conductor-free printable perovskite solar cells. Journal of Materials Chemistry A, 2016, 4, 16731-16736.	5.2	81
36	Fully printable perovskite solar cells with highly-conductive, low-temperature, perovskite-compatible carbon electrode. Carbon, 2018, 129, 830-836.	5.4	79

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37	Efficient hole-conductor-free, fully printable mesoscopic perovskite solar cells with carbon electrode based on ultrathin graphite. Carbon, 2017, 120, 71-76.	5.4	77
38	Efficient Perovskite Photovoltaicâ€Thermoelectric Hybrid Device. Advanced Energy Materials, 2018, 8, 1702937.	10.2	71
39	Highly efficient poly(3-hexylthiophene) based monolithic dye-sensitized solar cells with carbon counter electrode. Energy and Environmental Science, 2011, 4, 2025.	15.6	70
40	Crystallization Control of Ternaryâ€Cation Perovskite Absorber in Tripleâ€Mesoscopic Layer for Efficient Solar Cells. Advanced Energy Materials, 2020, 10, 1903092.	10.2	63
41	Efficient triple-mesoscopic perovskite solar mini-modules fabricated with slot-die coating. Nano Energy, 2020, 74, 104842.	8.2	63
42	Amide Additives Induced a Fermi Level Shift To Improve the Performance of Hole-Conductor-Free, Printable Mesoscopic Perovskite Solar Cells. Journal of Physical Chemistry Letters, 2019, 10, 6865-6872.	2.1	62
43	Guanineâ€Stabilized Formamidinium Lead Iodide Perovskites. Angewandte Chemie - International Edition, 2020, 59, 4691-4697.	7.2	61
44	Standardizing Perovskite Solar Modules beyond Cells. Joule, 2019, 3, 2076-2085.	11.7	56
45	The Influence of the Work Function of Hybrid Carbon Electrodes on Printable Mesoscopic Perovskite Solar Cells. Journal of Physical Chemistry C, 2018, 122, 16481-16487.	1.5	52
46	Similar or Totally Different: the Adjustment of the Twist Conformation Through Minor Structural Modification, and Dramatically Improved Performance for Dyeâ€Sensitized Solar Cell. Advanced Energy Materials, 2015, 5, 1500846.	10.2	51
47	Stability improvement under high efficiencyâ€"next stage development of perovskite solar cells. Science China Chemistry, 2019, 62, 684-707.	4.2	50
48	Halide Perovskite Crystallization Processes and Methods in Nanocrystals, Single Crystals, and Thin Films. Advanced Materials, 2022, 34, e2200720.	11.1	50
49	Bifunctional Al₂O₃ Interlayer Leads to Enhanced Openâ€Circuit Voltage for Holeâ€Conductorâ€Free Carbonâ€Based Perovskite Solar Cells. Solar Rrl, 2018, 2, 1800002.	3.1	48
50	Printable carbon-based hole-conductor-free mesoscopic perovskite solar cells: From lab to market. Materials Today Energy, 2018, 7, 221-231.	2.5	47
51	Attempt to Improve the Performance of Pyrrole-Containing Dyes in Dye Sensitized Solar Cells by Adjusting Isolation Groups. ACS Applied Materials & Interfaces, 2013, 5, 12469-12477.	4.0	45
52	A favored crystal orientation for efficient printable mesoscopic perovskite solar cells. Journal of Materials Chemistry A, 2020, 8, 11148-11154.	5.2	42
53	Minimizing the Voltage Loss in Holeâ€Conductorâ€Free Printable Mesoscopic Perovskite Solar Cells. Advanced Energy Materials, 2022, 12, .	10.2	41
54	Mixed (5-AVA)_xMA_{1âˆ'x}PbI_{3âˆ'y}(BF₄)_y perovskites enhance the photovoltaic performance of hole-conductor-free printable mesoscopic solar cells. Journal of Materials Chemistry A, 2018, 6, 2360-2364.	5.2	40

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55	A low-temperature carbon electrode with good perovskite compatibility and high flexibility in carbon based perovskite solar cells. Chemical Communications, 2019, 55, 2765-2768.	2.2	40
56	Highly oriented MAPbI3 crystals for efficient hole-conductor-free printable mesoscopic perovskite solar cells. Fundamental Research, 2022, 2, 276-283.	1.6	40
57	Improving the Performance of Perovskite Solar Cells via a Novel Additive of <i>N</i>,1â€Fluoroformamidinium Iodide with Electronâ€Withdrawing Fluorine Group. Advanced Functional Materials, 2021, 31, 2010603.	7.8	37
58	Development of formamidinium lead iodide-based perovskite solar cells: efficiency and stability. Chemical Science, 2022, 13, 2167-2183.	3.7	37
59	Vanadium Oxide Post-Treatment for Enhanced Photovoltage of Printable Perovskite Solar Cells. ACS Sustainable Chemistry and Engineering, 2019, 7, 2619-2625.	3.2	36
60	Efficient Compact-Layer-Free, Hole-Conductor-Free, Fully Printable Mesoscopic Perovskite Solar Cell. Journal of Physical Chemistry Letters, 2016, 7, 4142-4146.	2.1	35
61	Extending lead-free hybrid photovoltaic materials to new structures: thiazolium, aminothiazolium and imidazolium iodobismuthates. Dalton Transactions, 2018, 47, 7050-7058.	1.6	34
62	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
63	Enhanced perovskite electronic properties via A-site cation engineering. Fundamental Research, 2021, 1, 385-392.	1.6	34
64	The introduction of conjugated isolation groups into the common acceptor cyanoacrylic acid: an efficient strategy to suppress the charge recombination in dye sensitized solar cells and the dramatically improved efficiency from 5.89% to 9.44%. Journal of Materials Chemistry A, 2016, 4, 16403-16409.	5.2	33
65	Organic dyes incorporating N-functionalized pyrrole as conjugated bridge for dye-sensitized solar cells: Convenient synthesis, additional withdrawing group on the ï€-bridge and the suppressed aggregation. Dyes and Pigments, 2013, 99, 863-870.	2.0	32
66	On the interface reactions and stability of nonfullerene organic solar cells. Chemical Science, 2022, 13, 4714-4739.	3.7	32
67	Oxygen Vacancy Management for Highâ€Temperature Mesoporous SnO₂ Electron Transport Layers in Printable Perovskite Solar Cells. Angewandte Chemie - International Edition, 2022, 61, .	7.2	32
68	Enhancement of monobasal solid-state dye-sensitized solar cells with polymer electrolyte assembling imidazolium iodide-functionalized silica nanoparticles. Journal of Power Sources, 2014, 248, 283-288.	4.0	28
69	A Multifunctional Bis-Adduct Fullerene for Efficient Printable Mesoscopic Perovskite Solar Cells. ACS Applied Materials & Interfaces, 2018, 10, 10835-10841.	4.0	28
70	Organic Dyes based on Tetraarylâ€1,4â€dihydropyrroloâ€[3,2â€<i>b</i>]pyrroles for Photovoltaic and Photocatalysis Applications with the Suppressed Electron Recombination. Chemistry - A European Journal, 2018, 24, 18032-18042.	1.7	28
71	Monolithic all-solid-state dye-sensitized solar module based on mesoscopic carbon counter electrodes. Solar Energy Materials and Solar Cells, 2012, 105, 148-152.	3.0	26
72	Screen printing process control for coating high throughput titanium dioxide films toward printable mesoscopic perovskite solar cells. Frontiers of Optoelectronics, 2019, 12, 344-351.	1.9	26

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73	van der Waals Mixed Valence Tin Oxides for Perovskite Solar Cells as UV-Stable Electron Transport Materials. Nano Letters, 2020, 20, 8178-8184.	4.5	26
74	Crystallization Control of Methylammoniumâ€Free Perovskite in Twoâ€Step Deposited Printable Tripleâ€Mesoscopic Solar Cells. Solar Rrl, 2020, 4, 2000455.	3.1	24
75	In Situ Formation of Î´-FAPbI₃ at the Perovskite/Carbon Interface for Enhanced Photovoltage of Printable Mesoscopic Perovskite Solar Cells. Chemistry of Materials, 2022, 34, 728-735.	3.2	24
76	Novel Dâ€"Aâˆ'Ï€â€"A-Type Organic Dyes Containing a Ladderlike Dithienocyclopentacarbazole Donor for Effective Dye-Sensitized Solar Cells. ACS Omega, 2017, 2, 7048-7056.	1.6	23
77	Mesoporous-Carbon-Based Fully-Printable All-Inorganic Monoclinic CsPbBr₃ Perovskite Solar Cells with Ultrastability under High Temperature and High Humidity. Journal of Physical Chemistry Letters, 2020, 11, 9689-9695.	2.1	23
78	Postâ€Treatment of Mesoporous Scaffolds for Enhanced Photovoltage of Tripleâ€Mesoscopic Perovskite Solar Cells. Solar Rrl, 2020, 4, 2000185.	3.1	22
79	Improvements in printable mesoscopic perovskite solar cells <i>via</i> thinner spacer layers. Sustainable Energy and Fuels, 2018, 2, 2412-2418.	2.5	21
80	Ethanol stabilized precursors for highly reproducible printable mesoscopic perovskite solar cells. Journal of Power Sources, 2019, 424, 261-267.	4.0	21
81	Significantly improved performance of dye-sensitized solar cells by optimizing organic dyes with pyrrole as the isolation spacer and utilizing alkyl chain engineering. Journal of Materials Chemistry A, 2018, 6, 22256-22265.	5.2	20
82	Modulation of Acceptor Position in Organic Sensitizers: The Optimization of Intramolecular and Interfacial Charge Transfer Processes. ACS Applied Materials & Interfaces, 2019, 11, 27648-27657.	4.0	20
83	Efficient monolithic quasi-solid-state dye-sensitized solar cells based on poly(ionic liquids) and carbon counter electrodes. RSC Advances, 2014, 4, 9271.	1.7	19
84	Spacer improvement for efficient and fully printable mesoscopic perovskite solar cells. RSC Advances, 2017, 7, 10118-10123.	1.7	19
85	A C₆₀ Modification Layer Using a Scalable Deposition Technology for Efficient Printable Mesoscopic Perovskite Solar Cells. Solar Rrl, 2018, 2, 1800174.	3.1	19
86	<i>In situ</i> transfer of CH₃NH₃PbI₃ single crystals in mesoporous scaffolds for efficient perovskite solar cells. Chemical Science, 2020, 11, 474-481.	3.7	19
87	A 2D Model for Interfacial Recombination in Mesoscopic Perovskite Solar Cells with Printed Back Contact. Solar Rrl, 2021, 5, 2000595.	3.1	19
88	Fully printable hole-conductor-free mesoscopic perovskite solar cells based on mesoporous anatase single crystals. New Journal of Chemistry, 2018, 42, 2669-2674.	1.4	17
89	Modulating Oxygen Vacancies in BaSnO₃ for Printable Carbon-Based Mesoscopic Perovskite Solar Cells. ACS Applied Energy Materials, 2021, 4, 11032-11040.	2.5	17
90	Enhanced efficiency of printable mesoscopic perovskite solar cells using ionic liquid additives. Chemical Communications, 2021, 57, 4027-4030.	2.2	16

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91	Celluloseâ€Based Oxygenâ€Rich Activated Carbon for Printable Mesoscopic Perovskite Solar Cells. Solar Rrl, 2021, 5, 2100333.	3.1	16
92	Yttriumâ€doped <scp>Sn₃O₄ twoâ€dimensional</scp> electron transport material for perovskite solar cells with efficiency over 23%. EcoMat, 2022, 4, .	6.8	16
93	Low-temperature fabrication of carbon-electrode based, hole-conductor-free and mesoscopic perovskite solar cells with power conversion efficiency > 12% and storage-stability > 220 days. Applied Physics Letters, 2020, 117, .	1.5	15
94	Conjugated or Broken: The Introduction of Isolation Spacer ahead of the Anchoring Moiety and the Improved Device Performance. ACS Applied Materials & Interfaces, 2016, 8, 28652-28662.	4.0	14
95	Two-Stage Melt Processing of Phase-Pure Selenium for Printable Triple-Mesoscopic Solar Cells. ACS Applied Materials & Interfaces, 2019, 11, 33879-33885.	4.0	14
96	Spacer layer design for efficient fully printable mesoscopic perovskite solar cells. RSC Advances, 2019, 9, 29840-29846.	1.7	14
97	Halogen Bond Involved Postâ€Treatment for Improved Performance of Printable Holeâ€Conductorâ€Free Mesoscopic Perovskite Solar Cells. Solar Rrl, 2022, 6, 2100851.	3.1	14
98	Progress in Multifunctional Molecules for Perovskite Solar Cells. Solar Rrl, 2020, 4, 1900248.	3.1	13
99	Series Resistance Modulation for Largeâ€Area Fully Printable Mesoscopic Perovskite Solar Cells. Solar Rrl, 2022, 6, 2100554.	3.1	13
100	A multifunctional piperidine-based modulator for printable mesoscopic perovskite solar cells. Chemical Engineering Journal, 2022, 446, 136967.	6.6	13
101	Modeling the edge effect for measuring the performance of mesoscopic solar cells with shading masks. Journal of Materials Chemistry A, 2019, 7, 10942-10948.	5.2	11
102	Influence of precursor concentration on printable mesoscopic perovskite solar cells. Frontiers of Optoelectronics, 2020, 13, 256-264.	1.9	11
103	Revealing the Role of Bifunctional Molecules in Crystallizing Methylammonium Lead Iodide through Geometric Isomers. Chemistry of Materials, 2021, 33, 4014-4022.	3.2	10
104	Interfacial Energy Band Alignment Enables the Reduction of Potential Loss for Hole-Conductor-Free Printable Mesoscopic Perovskite Solar Cells. Journal of Physical Chemistry Letters, 2022, 13, 2144-2149.	2.1	10
105	Synergy effect of electronic characteristics and spatial configurations of electron donors on photovoltaic performance of organic dyes. Journal of Materials Chemistry C, 2020, 8, 14453-14461.	2.7	9
106	Cl-Assisted Perovskite Crystallization Pathway in the Confined Space of Mesoporous Metal Oxides Unveiled by In Situ Grazing Incidence Wide-Angle X-ray Scattering. Chemistry of Materials, 2022, 34, 2231-2237.	3.2	9
107	Investigating the iodide and bromide ion exchange in metal halide perovskite single crystals and thin films. Chemical Communications, 2021, 57, 6125-6128.	2.2	7
108	Improving Holeâ€Conductorâ€Free Fully Printable Mesoscopic Perovskite Solar Cellsâ€™ Performance with Enhanced Openâ€Circuit Voltage via the Octyltrimethylammonium Chloride Additive. Solar Rrl, 2021, 5, 2000825.	3.1	6

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109	Trivalent Europium Ions Doped CsPbBr₃ for Highly Efficient and Stable Printable Mesoscopic Perovskite Solar Cells and Driving Water Electrolysis. Solar Rrl, 2022, 6, .	3.1	6
110	Hole-conductor-free perovskite solar cells. MRS Bulletin, 2020, 45, 449-457.	1.7	5
111	Thiocyanate-Mediated Dimensionality Transformation of Low-Dimensional Perovskites for Photovoltaics. Chemistry of Materials, 2022, 34, 6331-6338.	3.2	5
112	Oxygen Vacancy Management for Highâ€Temperature Mesoporous SnO₂ Electron Transport Layers in Printable Perovskite Solar Cells. Angewandte Chemie, 2022, 134, .	1.6	3
113	Aiming at the industrialization of perovskite solar cells: Coping with stability challenge. Applied Physics Letters, 2021, 119, .	1.5	3
114	Recent multiple evidences for high stability of perovskite optoelectronic devices. Science Bulletin, 2019, 64, 1731-1732.	4.3	2
115	Modeling and Balancing the Solvent Evaporation of Thermal Annealing Process for Metal Halide Perovskites and Solar Cells. Small Methods, 2022, 6, e2200161.	4.6	2
116	Solar Cells: Crystallization Control of Ternaryâ€Cation Perovskite Absorber in Tripleâ€Mesoscopic Layer for Efficient Solar Cells (Adv. Energy Mater. 5/2020). Advanced Energy Materials, 2020, 10, 2070022.	10.2	1
117	Guanineâ€Stabilized Formamidinium Lead Iodide Perovskites. Angewandte Chemie, 2020, 132, 4721-4727.	1.6	0
118	Efficient hole-conductor-free printable mesoscopic perovskite solar cells based on hybrid carbon electrodes. , 2018, , .		0