Huanping Zhou

List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

128 papers	21,990 citations	54 h-index	138 g-index
138 ext. papers	24,907 ext. citations	15.6 avg, IF	6.96 L-index

#	Paper	IF	Citations
128	Temperature-Insensitive Efficient Inorganic Perovskite Photovoltaics by Bulk Heterojunctions.. *Advanced Materials*, **2022**, e2108357	24	5
127	Strain Modulation for Light-Stable n-i-p Perovskite/Silicon Tandem Solar Cells.. *Advanced Materials*, **2022**, e2201315	24	5
126	Avoiding Structural Collapse to Reduce Lead Leakage in Perovskite Photovoltaics.. *Angewandte Chemie - International Edition*, **2022**,	16.4	5
125	Phase transformation barrier modulation of CsPbI3 films via PbI3□complex for efficient all-inorganic perovskite photovoltaics. *Nano Energy*, **2022**, 99, 107388	17.1	0
124	Interface charge accumulation dynamics in 3D and quasi-2D perovskite solar cells. *Journal Physics D: Applied Physics*, **2021**, 54, 014004	3	1
123	Progress in flexible perovskite solar cells with improved efficiency. *Journal of Semiconductors*, **2021**, 42, 101605	2.3	4
122	Mobile Media Promotes Orientation of 2D/3D Hybrid Lead Halide Perovskite for Efficient Solar Cells. *ACS Nano*, **2021**, 15, 8350-8362	16.7	5
121	Liquid medium annealing for fabricating durable perovskite solar cells with improved reproducibility. *Science*, **2021**, 373, 561-567	33.3	60
120	Insights into Large-Scale Fabrication Methods in Perovskite Photovoltaics. *Advanced Energy and Sustainability Research*, **2021**, 2, 2000046	1.6	9
119	An overview of rare earth coupled lead halide perovskite and its application in photovoltaics and light emitting devices. *Progress in Materials Science*, **2021**, 120, 100737	42.2	10
118	Integrated Tapping Mode Kelvin Probe Force Microscopy with Photoinduced Force Microscopy for Correlative Chemical and Surface Potential Mapping. *Small*, **2021**, 17, e2102495	11	2
117	Thermal Management Enables More Efficient and Stable Perovskite Solar Cells. *ACS Energy Letters*, **2021**, 6, 3029-3036	20.1	5
116	Synergistic Effects of Eu-MOF on Perovskite Solar Cells with Improved Stability. *Advanced Materials*, **2021**, 33, e2102947	24	29
115	Ion migration in halide perovskite solar cells: mechanism, characterization, impact and suppression. *Journal of Energy Chemistry*, **2021**,	12	8
114	Sandwiched electrode buffer for efficient and stable perovskite solar cells with dual back surface fields. *Joule*, **2021**, 5, 2148-2163	27.8	18
113	Promoting Energy Transfer via Manipulation of Crystallization Kinetics of Quasi-2D Perovskites for Efficient Green Light-Emitting Diodes. *Advanced Materials*, **2021**, 33, e2102246	24	25
112	Repair Strategies for Perovskite Solar Cells. *Chemical Research in Chinese Universities*, **2021**, 37, 1055	2.2	1

111	Integrated Tapping Mode Kelvin Probe Force Microscopy with Photoinduced Force Microscopy for Correlative Chemical and Surface Potential Mapping (Small 37/2021). *Small*, **2021**, 17, 2170194	11	
110	Interfacial-engineering enhanced performance and stability of ZnO nanowire-based perovskite solar cells. *Nanotechnology*, **2021**, 32,	3.4	9
109	The Role of Surface Termination in Halide Perovskites for Efficient Photocatalytic Synthesis. *Angewandte Chemie - International Edition*, **2020**, 59, 12931-12937	16.4	19
108	The Role of Surface Termination in Halide Perovskites for Efficient Photocatalytic Synthesis. *Angewandte Chemie*, **2020**, 132, 13031-13037	3.6	1
107	Defect suppression and passivation for perovskite solar cells: from the birth to the lifetime operation. *EnergyChem*, **2020**, 2, 100032	36.9	12
106	Carrier transport composites with suppressed glass-transition for stable planar perovskite solar cells. *Journal of Materials Chemistry A*, **2020**, 8, 14106-14113	13	13
105	Recent Advances in Improving Phase Stability of Perovskite Solar Cells. *Small Methods*, **2020**, 4, 1900877	12.8	35
104	Compositional Engineering for Compact Perovskite Absorber Fabrication Toward Efficient Photovoltaics. *IEEE Journal of Photovoltaics*, **2020**, 10, 765-770	3.7	1
103	Microscopic Degradation in Formamidinium-Cesium Lead Iodide Perovskite Solar Cells under Operational Stressors. *Joule*, **2020**, 4, 1743-1758	27.8	70
102	Cation Diffusion Guides Hybrid Halide Perovskite Crystallization during the Gel Stage. *Angewandte Chemie*, **2020**, 132, 6035-6043	3.6	2
101	1000 h Operational Lifetime Perovskite Solar Cells by Ambient Melting Encapsulation. *Advanced Energy Materials*, **2020**, 10, 1902472	21.8	60
100	Cation Diffusion Guides Hybrid Halide Perovskite Crystallization during the Gel Stage. *Angewandte Chemie - International Edition*, **2020**, 59, 5979-5987	16.4	19
99	Understanding the Defect Properties of Quasi-2D Halide Perovskites for Photovoltaic Applications. *Journal of Physical Chemistry Letters*, **2020**, 11, 3521-3528	6.4	29
98	The Spacer Cations Interplay for Efficient and Stable Layered 2D Perovskite Solar Cells. *Advanced Energy Materials*, **2020**, 10, 1901566	21.8	57
97	Probing Phase Distribution in 2D Perovskites for Efficient Device Design. *ACS Applied Materials & Interfaces*, **2020**, 12, 3127-3133	9.5	21
96	An in situ 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	35.4	68
95	Self-Elimination of Intrinsic Defects Improves the Low-Temperature Performance of Perovskite Photovoltaics. *Joule*, **2020**, 4, 1961-1976	27.8	82
94	Collective and individual impacts of the cascade doping of alkali cations in perovskite single crystals. *Journal of Materials Chemistry C*, **2020**, 8, 15351-15360	7.1	1

93	Defects chemistry in high-efficiency and stable perovskite solar cells. *Journal of Applied Physics*, **2020**, 128, 060903	2.5	43
92	Towards commercialization: the operational stability of perovskite solar cells. *Chemical Society Reviews*, **2020**, 49, 8235-8286	58.5	143
91	Electronic Tunability and Mobility Anisotropy of Quasi-2D Perovskite Single Crystals with Varied Spacer Cations. *Journal of Physical Chemistry Letters*, **2020**, 11, 7610-7616	6.4	13
90	Energy-Level Modulation in Diboron-Modified SnO2 for High-Efficiency Perovskite Solar Cells. *Solar Rrl*, **2020**, 4, 1900217	7.1	21
89	Integrated Perovskite/Organic Photovoltaics with Ultrahigh Photocurrent and Photoresponse Approaching 1000 nm. *Solar Rrl*, **2020**, 4, 2000140	7.1	10
88	Stacking Effects on Electron-Phonon Coupling in Layered Hybrid Perovskites Microstrain Manipulation. *ACS Nano*, **2020**, 14, 5806-5817	16.7	24
87	Cation and anion immobilization through chemical bonding enhancement with fluorides for stable halide perovskite solar cells. *Nature Energy*, **2019**, 4, 408-415	62.3	511
86	A Thermodynamically Favored Crystal Orientation in Mixed Formamidinium/Methylammonium Perovskite for Efficient Solar Cells. *Advanced Materials*, **2019**, 31, e1900390	24	62
85	Impacts of alkaline on the defects property and crystallization kinetics in perovskite solar cells. *Nature Communications*, **2019**, 10, 1112	17.4	124
84	30% Enhancement of Efficiency in Layered 2D Perovskites Absorbers by Employing Homo-Tandem Structures. *Solar Rrl*, **2019**, 3, 1900083	7.1	6
83	Interfacial Residual Stress Relaxation in Perovskite Solar Cells with Improved Stability. *Advanced Materials*, **2019**, 31, e1904408	24	126
82	Locally collective hydrogen bonding isolates lead octahedra for white emission improvement. *Nature Communications*, **2019**, 10, 5190	17.4	67
81	Temporal and spatial pinhole constraints in small-molecule hole transport layers for stable and efficient perovskite photovoltaics. *Journal of Materials Chemistry A*, **2019**, 7, 7338-7346	13	28
80	Strain engineering in perovskite solar cells and its impacts on carrier dynamics. *Nature Communications*, **2019**, 10, 815	17.4	286
79	Facet-Dependent Control of PbI2 Colloids for over 20% Efficient Perovskite Solar Cells. *ACS Energy Letters*, **2019**, 4, 358-367	20.1	27
78	A Eu-Eu ion redox shuttle imparts operational durability to Pb-I perovskite solar cells. *Science*, **2019**, 363, 265-270	33.3	533
77	A Strategy toward New Low-Dimensional Hybrid Halide Perovskites with Anionic Spacers. *Small*, **2019**, 15, e1804152	11	3
76	Extremely low trap-state energy level perovskite solar cells passivated using NH2-POSS with improved efficiency and stability. *Journal of Materials Chemistry A*, **2018**, 6, 6806-6814	13	34

75	Ligand engineering on CdTe quantum dots in perovskite solar cells for suppressed hysteresis. *Nano Energy*, **2018**, 46, 45-53	17.1	38
74	Unraveling the Growth of Hierarchical Quasi-2D/3D Perovskite and Carrier Dynamics. *Journal of Physical Chemistry Letters*, **2018**, 9, 1124-1132	6.4	41
73	Doping effects in SnO2 transport material for high performance planar perovskite solar cells. *Journal Physics D: Applied Physics*, **2018**, 51, 394001	3	20
72	Effects of Iodine Doping on Carrier Behavior at the Interface of Perovskite Crystals: Efficiency and Stability. *Crystals*, **2018**, 8, 185	2.3	6
71	Manipulation of facet orientation in hybrid perovskite polycrystalline films by cation cascade. *Nature Communications*, **2018**, 9, 2793	17.4	127
70	Grain-Boundary "Patches" by In Situ Conversion to Enhance Perovskite Solar Cells Stability. *Advanced Materials*, **2018**, 30, e1800544	24	170
69	Method for the Morphology Control and High Performance Solar Cells. *Materials and Energy*, **2018**, 199-239		2
68	Exploration of Crystallization Kinetics in Quasi Two-Dimensional Perovskite and High Performance Solar Cells. *Journal of the American Chemical Society*, **2018**, 140, 459-465	16.4	248
67	Congeneric Incorporation of CsPbBr3 Nanocrystals in a Hybrid Perovskite Heterojunction for Photovoltaic Efficiency Enhancement. *ACS Energy Letters*, **2018**, 3, 30-38	20.1	86
66	Low-temperature-processed inorganic perovskite solar cells via solvent engineering with enhanced mass transport. *Journal of Materials Chemistry A*, **2018**, 6, 23602-23609	13	49
65	Effect of High Dipole Moment Cation on Layered 2D Organic□horganic Halide Perovskite Solar Cells. *Advanced Energy Materials*, **2018**, 9, 1803024	21.8	65
64	Monolithic perovskite/Si tandem solar cells exceeding 22% efficiency via optimizing top cell absorber. *Nano Energy*, **2018**, 53, 798-807	17.1	56
63	High-Performance Fused Ring Electron Acceptor-Perovskite Hybrid. *Journal of the American Chemical Society*, **2018**, 140, 14938-14944	16.4	51
62	The Exploration of Carrier Behavior in the Inverted Mixed Perovskite Single-Crystal Solar Cells. *Advanced Materials Interfaces*, **2018**, 5, 1800224	4.6	38
61	Cost Analysis of Perovskite Tandem Photovoltaics. *Joule*, **2018**, 2, 1559-1572	27.8	150
60	Efficient Moisture-Resistant Perovskite Solar Cell With Nanostructure Featuring 3D Amine Motif. *Solar Rrl*, **2018**, 2, 1800069	7.1	8
59	Rationally Induced Interfacial Dipole in Planar Heterojunction Perovskite Solar Cells for Reduced J□V Hysteresis. *Advanced Energy Materials*, **2018**, 8, 1800568	21.8	19
58	Nickel oxide nanoparticles for efficient hole transport in p-i-n and n-i-p perovskite solar cells. *Journal of Materials Chemistry A*, **2017**, 5, 6597-6605	13	159

57	High-Mobility p-Type Organic Semiconducting Interlayer Enhancing Efficiency and Stability of Perovskite Solar Cells. *Advanced Science*, **2017**, 4, 1700025	13.6	29
56	Chemical Reduction of Intrinsic Defects in Thicker Heterojunction Planar Perovskite Solar Cells. *Advanced Materials*, **2017**, 29, 1606774	24	267
55	Tailored Au@TiO2 nanostructures for the plasmonic effect in planar perovskite solar cells. *Journal of Materials Chemistry A*, **2017**, 5, 12034-12042	13	51
54	CsI Pre-Intercalation in the Inorganic Framework for Efficient and Stable FA Cs PbI (Cl) Perovskite Solar Cells. *Small*, **2017**, 13, 1700484	11	88
53	To probe the performance of perovskite memory devices: defects property and hysteresis. *Journal of Materials Chemistry C*, **2017**, 5, 5810-5817	7.1	46
52	The intrinsic properties of FA(1⊠)MAxPbI3 perovskite single crystals. *Journal of Materials Chemistry A*, **2017**, 5, 8537-8544	13	110
51	Toward Full Solution Processed Perovskite/Si Monolithic Tandem Solar Device With PCE Exceeding 20%. *Solar Rrl*, **2017**, 1, 1700149	7.1	54
50	Precise Composition Tailoring of Mixed-Cation Hybrid Perovskites for Efficient Solar Cells by Mixture Design Methods. *ACS Nano*, **2017**, 11, 8804-8813	16.7	44
49	Reduction of intrinsic defects in hybrid perovskite films via precursor purification. *Chemical Communications*, **2017**, 53, 10548-10551	5.8	24
48	Hybrid Organic-Inorganic Perovskite Photodetectors. *Small*, **2017**, 13, 1702107	11	206
47	A general approach for nanoparticle composite transport materials toward efficient perovskite solar cells. *Chemical Communications*, **2017**, 53, 11028-11031	5.8	2
46	Impact of H2O on organic□norganic hybrid perovskite solar cells. *Energy and Environmental Science*, **2017**, 10, 2284-2311	35.4	248
45	Photon management for efficient hybrid perovskite solar cells via synergetic localized grating and enhanced fluorescence effect. *Nano Energy*, **2017**, 40, 540-549	17.1	18
44	A-Site Cation Effect on Growth Thermodynamics and Photoconductive Properties in Ultrapure Lead Iodine Perovskite Monocrystalline Wires. *ACS Applied Materials & Interfaces*, **2017**, 9, 25985-25994	9.5	9
43	Microstructure variations induced by excess PbX or AX within perovskite thin films. *Chemical Communications*, **2017**, 53, 12966-12969	5.8	7
42	A low temperature processed fused-ring electron transport material for efficient planar perovskite solar cells. *Journal of Materials Chemistry A*, **2017**, 5, 24820-24825	13	36
41	An amino-substituted perylene diimide polymer for conventional perovskite solar cells. *Materials Chemistry Frontiers*, **2017**, 1, 2078-2084	7.8	15
40	Enhanced physical properties of pulsed laser deposited NiO films via annealing and lithium doping for improving perovskite solar cell efficiency. *Journal of Materials Chemistry C*, **2017**, 5, 7084-7094	7.1	92

39	Recent Development of Organic–Inorganic Perovskite-Based Tandem Solar Cells. *Solar Rrl*, **2017**, 1, 1700045	7.1	25
38	Improved air stability of perovskite solar cells via solution-processed metal oxide transport layers. *Nature Nanotechnology*, **2016**, 11, 75-81	28.7	1614
37	50% Sn-Based Planar Perovskite Solar Cell with Power Conversion Efficiency up to 13.6%. *Advanced Energy Materials*, **2016**, 6, 1601353	21.8	128
36	Guanidinium: A Route to Enhanced Carrier Lifetime and Open-Circuit Voltage in Hybrid Perovskite Solar Cells. *Nano Letters*, **2016**, 16, 1009-16	11.5	400
35	Interfacial Degradation of Planar Lead Halide Perovskite Solar Cells. *ACS Nano*, **2016**, 10, 218-24	16.7	357
34	The Progress of Interface Design in Perovskite-Based Solar Cells. *Advanced Energy Materials*, **2016**, 6, 1600460	21.8	121
33	Efficiency Enhancement of Cu2ZnSn(S,Se)4 Solar Cells via Alkali Metals Doping. *Advanced Energy Materials*, **2016**, 6, 1502386	21.8	91
32	Silver nanowires with semiconducting ligands for low-temperature transparent conductors. *Nano Research*, **2016**, 9, 392-400	10	25
31	Low-Temperature TiOx Compact Layer for Planar Heterojunction Perovskite Solar Cells. *ACS Applied Materials & Interfaces*, **2016**, 8, 11076-83	9.5	91
30	Large-area, high-quality organic–inorganic hybrid perovskite thin films via a controlled vapor–solid reaction. *Journal of Materials Chemistry A*, **2016**, 4, 9124-9132	13	39
29	The Additive Coordination Effect on Hybrids Perovskite Crystallization and High-Performance Solar Cell. *Advanced Materials*, **2016**, 28, 9862-9868	24	235
28	Solution processed inorganic V2O x as interfacial function materials for inverted planar-heterojunction perovskite solar cells with enhanced efficiency. *Nano Research*, **2016**, 9, 2960-2971	10	66
27	Improving the TiO2 electron transport layer in perovskite solar cells using acetylacetonate-based additives. *Journal of Materials Chemistry A*, **2015**, 3, 9108-9115	13	94
26	Perovskite solar cells: film formation and properties. *Journal of Materials Chemistry A*, **2015**, 3, 9032-9050	13	327
25	Under the spotlight: The organic–inorganic hybrid halide perovskite for optoelectronic applications. *Nano Today*, **2015**, 10, 355-396	17.9	700
24	Multilayer Transparent Top Electrode for Solution Processed Perovskite/Cu(In,Ga)(Se,S)2 Four Terminal Tandem Solar Cells. *ACS Nano*, **2015**, 9, 7714-21	16.7	139
23	The optoelectronic role of chlorine in CH3NH3PbI3(Cl)-based perovskite solar cells. *Nature Communications*, **2015**, 6, 7269	17.4	354
22	A dopant-free organic hole transport material for efficient planar heterojunction perovskite solar cells. *Journal of Materials Chemistry A*, **2015**, 3, 11940-11947	13	182

21	Hole selective NiO contact for efficient perovskite solar cells with carbon electrode. *Nano Letters*, **2015**, 15, 2402-8	11.5	357
20	Working Mechanism for Flexible Perovskite Solar Cells with Simplified Architecture. *Nano Letters*, **2015**, 15, 6514-20	11.5	82
19	Controlling Solid-Gas Reactions at Nanoscale for Enhanced Thin Film Morphologies and Device Performances in Solution-Processed Cu2ZnSn(S,Se)4 Solar Cells. *Journal of the American Chemical Society*, **2015**, 137, 11069-75	16.4	15
18	The identification and characterization of defect states in hybrid organic-inorganic perovskite photovoltaics. *Physical Chemistry Chemical Physics*, **2015**, 17, 112-6	3.6	285
17	Vapor-assisted solution process for perovskite materials and solar cells. *MRS Bulletin*, **2015**, 40, 667-673	3.2	32
16	Perovskite/polymer monolithic hybrid tandem solar cells utilizing a low-temperature, full solution process. *Materials Horizons*, **2015**, 2, 203-211	14.4	127
15	Benign Solutions and Innovative Sequential Annealing Processes for High Performance Cu2ZnSn(Se,S)4 Photovoltaics. *Advanced Energy Materials*, **2014**, 4, 1301287	21.8	48
14	Planar heterojunction perovskite solar cells via vapor-assisted solution process. *Journal of the American Chemical Society*, **2014**, 136, 622-5	16.4	1921
13	Low-temperature solution-processed perovskite solar cells with high efficiency and flexibility. *ACS Nano*, **2014**, 8, 1674-80	16.7	1216
12	Facile single-component precursor for Cu2ZnSnS4 with enhanced phase and composition controllability. *Energy and Environmental Science*, **2014**, 7, 998	35.4	25
11	Photovoltaics. Interface engineering of highly efficient perovskite solar cells. *Science*, **2014**, 345, 542-6	33.3	5272
10	Controllable self-induced passivation of hybrid lead iodide perovskites toward high performance solar cells. *Nano Letters*, **2014**, 14, 4158-63	11.5	1143
9	Moisture assisted perovskite film growth for high performance solar cells. *Applied Physics Letters*, **2014**, 105, 183902	3.4	598
8	CZTS nanocrystals: a promising approach for next generation thin film photovoltaics. *Energy and Environmental Science*, **2013**, 6, 2822	35.4	260
7	Rational defect passivation of Cu2ZnSn(S,Se)4 photovoltaics with solution-processed Cu2ZnSnS4:Na nanocrystals. *Journal of the American Chemical Society*, **2013**, 135, 15998-6001	16.4	127
6	Non-Hydrazine Solutions in Processing CuIn(S,Se)2 Photovoltaic Devices from Hydrazinium Precursors. *Advanced Energy Materials*, **2013**, 3, 328-336	21.8	18
5	Solution-Processed TiO2 Nanoparticles as the Window Layer for CuIn(S,Se)2 Devices. *Advanced Energy Materials*, **2012**, 2, 1368-1374	21.8	6
4	Spacer Organic Cation Engineering for Quasi Two-dimensional Metal Halide Perovskites and the Optoelectronic Application. *Small Structures*,	8.7	1

3	Molecular Hinges Stabilize Formamidinium-Based Perovskite Solar Cells with Compressive Strain. *Advanced Functional Materials*,2201193	15.6	13
2	Cost Analysis of Perovskite/Cu(In,Ga)Se2 Tandem Photovoltaic with Module Replacement. *ACS Energy Letters*,1920-1925	20.1	0
1	Improving Heat Transfer Enables Durable Perovskite Solar Cells. *Advanced Energy Materials*,2200869	21.8	2