Yuanyuan Zhou

List of Publications by Year in Descending Order

115 papers	7,530 citations	48 h-index	85 g-index
127 ext. papers	8,948 ext. citations	12.7 avg, IF	6.63 L-index

#	Paper	IF	Citations
115	Atomically Resolved Electrically Active Intragrain Interfaces in Perovskite Semiconductors.. *Journal of the American Chemical Society*, **2022**,	16.4	7
114	Chemo-thermal surface dedoping for high-performance tin perovskite solar cells. *Matter*, **2022**, 5, 683-693	12.7	23
113	Harnessing chemical functions of ionic liquids for perovskite solar cells. *Journal of Energy Chemistry*, **2022**, 68, 797-810	12	3
112	Microstructures and Grain Boundaries of Halide Perovskite Thin Films **2022**, 81-105		
111	Critical Role of Organoamines in the Irreversible Degradation of a Metal Halide Perovskite Precursor Colloid: Mechanism and Inhibiting Strategy. *ACS Energy Letters*, **2022**, 7, 481-489	20.1	4
110	Bridging the Interfacial Contact for Improved Stability and Efficiency of Inverted Perovskite Solar Cells.. *Small*, **2022**, e2201694	11	1
109	Perovskite: An inspiring piece of matter. *Matter*, **2021**, 4, 3802-3803	12.7	
108	Machine learning for high-throughput experimental exploration of metal halide perovskites. *Joule*, **2021**,	27.8	7
107	In-situ observation of trapped carriers in organic metal halide perovskite films with ultra-fast temporal and ultra-high energetic resolutions. *Nature Communications*, **2021**, 12, 1636	17.4	3
106	A patterned titania nanorod array enables high fill factor in perovskite solar cells. *Journal of Energy Chemistry*, **2021**, 63, 391-391	12	
105	High-performance methylammonium-free ideal-band-gap perovskite solar cells. *Matter*, **2021**, 4, 1365-1376	12.7	23
104	Tailoring quasi-2D perovskite thin films via nanocrystals mediation for enhanced electroluminescence. *Chemical Engineering Journal*, **2021**, 411, 128511	14.7	3
103	Advances in cesium lead iodide perovskite solar cells: Processing science matters. *Materials Today*, **2021**, 47, 156-169	21.8	9
102	Correlations between Electrochemical Ion Migration and Anomalous Device Behaviors in Perovskite Solar Cells. *ACS Energy Letters*, **2021**, 6, 1003-1014	20.1	11
101	Tin Halide Perovskite Solar Cells: An Emerging Thin-Film Photovoltaic Technology. *Accounts of Materials Research*, **2021**, 2, 210-219	7.5	48
100	3D structure‐property correlations of electronic and energy materials by tomographic atomic force microscopy. *Applied Physics Letters*, **2021**, 118, 080501	3.4	4
99	Interpenetrating interfaces for efficient perovskite solar cells with high operational stability and mechanical robustness. *Nature Communications*, **2021**, 12, 973	17.4	75

98	Zooming In on Metal Halide Perovskites: New Energy Frontiers Emerge. *ACS Energy Letters*, **2021**, 6, 2750-2754	20.1	2
97	p-p orbital interaction via magnesium isovalent doping enhances optoelectronic properties of halide perovskites. *Chemical Communications*, **2020**, 56, 15639-15642	5.8	3
96	Mechanisms of exceptional grain growth and stability in formamidinium lead triiodide thin films for perovskite solar cells. *Acta Materialia*, **2020**, 193, 10-18	8.4	14
95	Electron-beam-induced cracking in organic-inorganic halide perovskite thin films. *Scripta Materialia*, **2020**, 187, 88-92	5.6	8
94	Encapsulated X-Ray Detector Enabled by All-Inorganic Lead-Free Perovskite Film With High Sensitivity and Low Detection Limit. *IEEE Transactions on Electron Devices*, **2020**, 67, 3191-3198	2.9	15
93	Decisive Structural and Functional Characterization of Halide Perovskites with Synchrotron. *Matter*, **2020**, 2, 360-377	12.7	21
92	Anomalous 3D nanoscale photoconduction in hybrid perovskite semiconductors revealed by tomographic atomic force microscopy. *Nature Communications*, **2020**, 11, 3308	17.4	27
91	The Synergism of DMSO and Diethyl Ether for Highly Reproducible and Efficient MA0.5FA0.5PbI3 Perovskite Solar Cells. *Advanced Energy Materials*, **2020**, 10, 2001300	21.8	17
90	Facile healing of cracks in organic□inorganic halide perovskite thin films. *Acta Materialia*, **2020**, 187, 112-121	8.4	27
89	Effect of Grain Size on the Fracture Behavior of Organic-Inorganic Halide Perovskite Thin Films for Solar Cells. *Scripta Materialia*, **2020**, 185, 47-50	5.6	18
88	Enhanced Thermoelectric Performance in Lead-Free Inorganic CsSn1□GexI3 Perovskite Semiconductors. *Journal of Physical Chemistry C*, **2020**, 124, 11749-11753	3.8	24
87	Understanding and Engineering Grain Boundaries for High-Performance Halide Perovskite Photovoltaics **2020**,		1
86	Enhancing Chemical Stability and Suppressing Ion Migration in CH3NH3PbI3 Perovskite Solar Cells via Direct Backbone Attachment of Polyesters on Grain Boundaries. *Chemistry of Materials*, **2020**, 32, 5104-5117	9.6	37
85	AgBiS2 as a low-cost and eco-friendly all-inorganic photovoltaic material: nanoscale morphology□property relationship. *Nanoscale Advances*, **2020**, 2, 770-776	5.1	4
84	transfer of CHNHPbI single crystals in mesoporous scaffolds for efficient perovskite solar cells. *Chemical Science*, **2020**, 11, 474-481	9.4	13
83	Sub-1.4eV bandgap inorganic perovskite solar cells with long-term stability. *Nature Communications*, **2020**, 11, 151	17.4	55
82	Visualizing the Invisible in Perovskites. *Joule*, **2020**, 4, 2545-2548	27.8	3
81	Perovskite Solar Cells with Enhanced Fill Factors Using Polymer-Capped Solvent Annealing. *ACS Applied Energy Materials*, **2020**, 3, 7231-7238	6.1	7

80	Direct Characterization of Carrier Diffusion in Halide-Perovskite Thin Films Using Transient Photoluminescence Imaging. *ACS Photonics*, **2019**, 6, 2375-2380	6.3	10
79	Carrier lifetime enhancement in halide perovskite via remote epitaxy. *Nature Communications*, **2019** , 10, 4145	17.4	45
78	Comprehensive Elucidation of Ion Transport and Its Relation to Hysteresis in Methylammonium Lead Iodide Perovskite Thin Films. *Journal of Physical Chemistry C*, **2019**, 123, 4029-4034	3.8	11
77	Lead-free low-dimensional tin halide perovskites with functional organic spacers: breaking the charge-transport bottleneck. *Journal of Materials Chemistry A*, **2019**, 7, 16742-16747	13	17
76	Improved SnO2 Electron Transport Layers Solution-Deposited at Near Room Temperature for Rigid or Flexible Perovskite Solar Cells with High Efficiencies. *Advanced Energy Materials*, **2019**, 9, 1900834	21.8	67
75	Fusing Nanowires into Thin Films: Fabrication of Graded-Heterojunction Perovskite Solar Cells with Enhanced Performance. *Advanced Energy Materials*, **2019**, 9, 1900243	21.8	36
74	The Bloom of Perovskite Optoelectronics: Fundamental Science Matters. *ACS Energy Letters*, **2019**, 4, 861-865	20.1	16
73	Chemical stability and instability of inorganic halide perovskites. *Energy and Environmental Science*, **2019**, 12, 1495-1511	35.4	335
72	Effect of Grain Boundaries on Charge Transport in Methylammonium Lead Iodide Perovskite Thin Films. *Journal of Physical Chemistry C*, **2019**, 123, 5321-5325	3.8	20
71	A polar-hydrophobic ionic liquid induces grain growth and stabilization in halide perovskites. *Chemical Communications*, **2019**, 55, 11059-11062	5.8	19
70	Two-Stage Melt Processing of Phase-Pure Selenium for Printable Triple-Mesoscopic Solar Cells. *ACS Applied Materials & Interfaces*, **2019**, 11, 33879-33885	9.5	9
69	Quantum-Dot-Induced Cesium-Rich Surface Imparts Enhanced Stability to Formamidinium Lead Iodide Perovskite Solar Cells. *ACS Energy Letters*, **2019**, 4, 1970-1975	20.1	58
68	Highly stable and efficient all-inorganic lead-free perovskite solar cells with native-oxide passivation. *Nature Communications*, **2019**, 10, 16	17.4	283
67	Transmission Electron Microscopy of Halide Perovskite Materials and Devices. *Joule*, **2019**, 3, 641-661	27.8	63
66	Synthetic Approaches for Halide Perovskite Thin Films. *Chemical Reviews*, **2019**, 119, 3193-3295	68.1	293
65	Lead-Free Dion▯acobson Tin Halide Perovskites for Photovoltaics. *ACS Energy Letters*, **2019**, 4, 276-277	20.1	73
64	Continuous Grain-Boundary Functionalization for High-Efficiency Perovskite Solar Cells with Exceptional Stability. *CheM*, **2018**, 4, 1404-1415	16.2	124
63	Cesium Titanium(IV) Bromide Thin Films Based Stable Lead-free Perovskite Solar Cells. *Joule*, **2018**, 2, 558-570	27.8	260

62	Earth-Abundant Nontoxic Titanium(IV)-based Vacancy-Ordered Double Perovskite Halides with Tunable 1.0 to 1.8 eV Bandgaps for Photovoltaic Applications. *ACS Energy Letters*, **2018**, 3, 297-304	20.1	192
61	Thermo-mechanical behavior of organic-inorganic halide perovskites for solar cells. *Scripta Materialia*, **2018**, 150, 36-41	5.6	60
60	Perovskite Solar Cells: Stable Formamidinium-Based Perovskite Solar Cells via In Situ Grain Encapsulation (Adv. Energy Mater. 22/2018). *Advanced Energy Materials*, **2018**, 8, 1870101	21.8	1
59	Lewis-Adduct Mediated Grain-Boundary Functionalization for Efficient Ideal-Bandgap Perovskite Solar Cells with Superior Stability. *Advanced Energy Materials*, **2018**, 8, 1800997	21.8	63
58	Zero-Dimensional Organic-Inorganic Perovskite Variant: Transition between Molecular and Solid Crystal. *Journal of the American Chemical Society*, **2018**, 140, 10456-10463	16.4	54
57	Toward Eco-friendly and Stable Perovskite Materials for Photovoltaics. *Joule*, **2018**, 2, 1231-1241	27.8	126
56	Integration of a functionalized graphene nano-network into a planar perovskite absorber for high-efficiency large-area solar cells. *Materials Horizons*, **2018**, 5, 868-873	14.4	21
55	Exceptional Grain Growth in Formamidinium Lead Iodide Perovskite Thin Films Induced by the □to-□Phase Transformation. *ACS Energy Letters*, **2018**, 3, 63-64	20.1	29
54	Bandgap Optimization of Perovskite Semiconductors for Photovoltaic Applications. *Chemistry - A European Journal*, **2018**, 24, 2305-2316	4.8	76
53	Subgrain Special Boundaries in Halide Perovskite Thin Films Restrict Carrier Diffusion. *ACS Energy Letters*, **2018**, 3, 2669-2670	20.1	52
52	Building bridges between halide perovskite nanocrystals and thin-film solar cells. *Sustainable Energy and Fuels*, **2018**, 2, 2381-2397	5.8	31
51	Stable Formamidinium-Based Perovskite Solar Cells via In Situ Grain Encapsulation. *Advanced Energy Materials*, **2018**, 8, 1800232	21.8	59
50	Methylammonium-Mediated Evolution of Mixed-Organic-Cation Perovskite Thin Films: A Dynamic Composition-Tuning Process. *Angewandte Chemie*, **2017**, 129, 7782-7786	3.6	12
49	Methylammonium-Mediated Evolution of Mixed-Organic-Cation Perovskite Thin Films: A Dynamic Composition-Tuning Process. *Angewandte Chemie - International Edition*, **2017**, 56, 7674-7678	16.4	53
48	Fabrication of compact and stable perovskite films with optimized precursor composition in the fast-growing procedure. *Science China Materials*, **2017**, 60, 608-616	7.1	11
47	Ions Matter: Description of the Anomalous Electronic Behavior in Methylammonium Lead Halide Perovskite Devices. *Advanced Functional Materials*, **2017**, 27, 1606584	15.6	49
46	High-Performance Formamidinium-Based Perovskite Solar Cells via Microstructure-Mediated □to-□ Phase Transformation. *Chemistry of Materials*, **2017**, 29, 3246-3250	9.6	79
45	Long Minority-Carrier Diffusion Length and Low Surface-Recombination Velocity in Inorganic Lead-Free CsSnI3 Perovskite Crystal for Solar Cells. *Advanced Functional Materials*, **2017**, 27, 1604818	15.6	124

44	Gas-Induced Formation/Transformation of Organic–Inorganic Halide Perovskites. *ACS Energy Letters*, **2017**, 2, 2166-2176	20.1	45
43	Rücktitelbild: Homogenous Alloys of Formamidinium Lead Triiodide and Cesium Tin Triiodide for Efficient Ideal-Bandgap Perovskite Solar Cells (Angew. Chem. 41/2017). *Angewandte Chemie*, **2017**, 129, 12966-12966	3.6	
42	Homogenous Alloys of Formamidinium Lead Triiodide and Cesium Tin Triiodide for Efficient Ideal-Bandgap Perovskite Solar Cells. *Angewandte Chemie - International Edition*, **2017**, 56, 12658-12662	16.4	56
41	Homogenous Alloys of Formamidinium Lead Triiodide and Cesium Tin Triiodide for Efficient Ideal-Bandgap Perovskite Solar Cells. *Angewandte Chemie*, **2017**, 129, 12832-12836	3.6	3
40	Simultaneous Evolution of Uniaxially Oriented Grains and Ultralow-Density Grain-Boundary Network in CH3NH3PbI3 Perovskite Thin Films Mediated by Precursor Phase Metastability. *ACS Energy Letters*, **2017**, 2, 2727-2733	20.1	63
39	Direct Synthesis of Carbon Sheathed Tungsten Oxide Nanoparticles via Self-Assembly Route for High Performance Electrochemical Charge Storage Electrode. *Journal of Nanoscience and Nanotechnology*, **2017**, 17, 389-97	1.3	2
38	Heterojunction-Depleted Lead-Free Perovskite Solar Cells with Coarse-Grained B-γ-CsSnI3 Thin Films. *Advanced Energy Materials*, **2016**, 6, 1601130	21.8	162
37	Doping and alloying for improved perovskite solar cells. *Journal of Materials Chemistry A*, **2016**, 4, 17623-17635	13	126
36	Thin-Film Transformation of NH PbI to CH NH PbI Perovskite: A Methylamine-Induced Conversion-Healing Process. *Angewandte Chemie - International Edition*, **2016**, 55, 14723-14727	16.4	74
35	Thin-Film Transformation of NH4PbI3 to CH3NH3PbI3 Perovskite: A Methylamine-Induced Conversion‐Healing Process. *Angewandte Chemie*, **2016**, 128, 14943-14947	3.6	15
34	Challenges in the ambient Raman spectroscopy characterization of methylammonium lead triiodide perovskite thin films. *Frontiers of Optoelectronics*, **2016**, 9, 81-86	2.8	20
33	Transformative Evolution of Organolead Triiodide Perovskite Thin Films from Strong Room-Temperature Solid-Gas Interaction between HPbI3-CH3NH2 Precursor Pair. *Journal of the American Chemical Society*, **2016**, 138, 750-3	16.4	141
32	Hybrid Perovskite Quantum Nanostructures Synthesized by Electrospray Antisolvent-Solvent Extraction and Intercalation. *ACS Applied Materials & Interfaces*, **2016**, 8, 854-61	9.5	44
31	Manipulating Crystallization of Organolead Mixed-Halide Thin Films in Antisolvent Baths for Wide-Bandgap Perovskite Solar Cells. *ACS Applied Materials & Interfaces*, **2016**, 8, 2232-7	9.5	72
30	Intercalation crystallization of phase-pure α-HC(NH2)2PbI3 upon microstructurally engineered PbI2 thin films for planar perovskite solar cells. *Nanoscale*, **2016**, 8, 6265-70	7.7	33
29	Exceptional Morphology-Preserving Evolution of Formamidinium Lead Triiodide Perovskite Thin Films via Organic-Cation Displacement. *Journal of the American Chemical Society*, **2016**, 138, 5535-8	16.4	153
28	Observation of phase-retention behavior of the HC(NH2)2PbI3 black perovskite polymorph upon mesoporous TiO2 scaffolds. *Chemical Communications*, **2016**, 52, 7273-5	5.8	37
27	Mapping the Photoresponse of CH3NH3PbI3 Hybrid Perovskite Thin Films at the Nanoscale. *Nano Letters*, **2016**, 16, 3434-41	11.5	101

26	Perovskite Solar Cells Shine in the "Valley of the Sun" *ACS Energy Letters*, **2016**, 1, 64-67	20.1	90
25	Growth control of compact CH3NH3PbI3 thin films via enhanced solid-state precursor reaction for efficient planar perovskite solar cells. *Journal of Materials Chemistry A*, **2015**, 3, 9249-9256	13	118
24	Room-temperature crystallization of hybrid-perovskite thin films via solvent-solvent extraction for high-performance solar cells. *Journal of Materials Chemistry A*, **2015**, 3, 8178-8184	13	336
23	Intrinsic defects in a photovoltaic perovskite variant Cs2SnI6. *Physical Chemistry Chemical Physics*, **2015**, 17, 18900-3	3.6	148
22	Carrier separation and transport in perovskite solar cells studied by nanometre-scale profiling of electrical potential. *Nature Communications*, **2015**, 6, 8397	17.4	172
21	Additive-Modulated Evolution of HC(NH2)2PbI3 Black Polymorph for Mesoscopic Perovskite Solar Cells. *Chemistry of Materials*, **2015**, 27, 7149-7155	9.6	164
20	Square-Centimeter Solution-Processed Planar CH3NH3PbI3 Perovskite Solar Cells with Efficiency Exceeding 15. *Advanced Materials*, **2015**, 27, 6363-70	24	272
19	Methylamine-Gas-Induced Defect-Healing Behavior of CH3NH3PbI3 Thin Films for Perovskite Solar Cells. *Angewandte Chemie - International Edition*, **2015**, 54, 9705-9	16.4	326
18	Methylamine-Gas-Induced Defect-Healing Behavior of CH3NH3PbI3 Thin Films for Perovskite Solar Cells. *Angewandte Chemie*, **2015**, 127, 9841-9845	3.6	35
17	Crystal Morphologies of Organolead Trihalide in Mesoscopic/Planar Perovskite Solar Cells. *Journal of Physical Chemistry Letters*, **2015**, 6, 2292-7	6.4	85
16	Ligand-Hole in [SnI6] Unit and Origin of Band Gap in Photovoltaic Perovskite Variant Cs2SnI6. *Bulletin of the Chemical Society of Japan*, **2015**, 88, 1250-1255	5.1	83
15	Microstructures of Organometal Trihalide Perovskites for Solar Cells: Their Evolution from Solutions and Characterization. *Journal of Physical Chemistry Letters*, **2015**, 6, 4827-39	6.4	283
14	Interconnected carbon-decorated Tio2 nanocrystals with enhanced lithium storage performance. *Electrochemistry Communications*, **2014**, 40, 54-57	5.1	5
13	Direct Observation of Ferroelectric Domains in Solution-Processed CH3NH3PbI3 Perovskite Thin Films. *Journal of Physical Chemistry Letters*, **2014**, 5, 3335-9	6.4	367
12	One-step, solution-processed formamidinium lead trihalide (FAPbI(3-x)Cl(x)) for mesoscopic perovskite-polymer solar cells. *Physical Chemistry Chemical Physics*, **2014**, 16, 19206-11	3.6	113
11	Vapour-based processing of hole-conductor-free CH3NH3PbI3 perovskite/C60 fullerene planar solar cells. *RSC Advances*, **2014**, 4, 28964-28967	3.7	113
10	Reproducible One-Step Fabrication of Compact MAPbI3-xClx Thin Films Derived from Mixed-Lead-Halide Precursors. *Chemistry of Materials*, **2014**, 26, 7145-7150	9.6	76
9	Ordered Mesoporous Carbon-MoO2Nanocomposite as High Performance Anode Material in Lithium Ion Batteries. *Bulletin of the Korean Chemical Society*, **2014**, 35, 257-260	1.2	8

8	Room temperature "one-pot" solution synthesis of nanoscale CsSnI3 orthorhombic perovskite thin films and particles. *Materials Letters*, **2013**, 110, 127-129	3.3	44
7	Enhanced charge storage by optimization of pore structure in nanocomposite between ordered mesoporous carbon and nanosized WO3. *Journal of Power Sources*, **2013**, 244, 777-782	8.9	35
6	Development of novel mesoporous C-TiO2-SnO2 nanocomposites and their application to anode materials in lithium ion secondary batteries. *Microporous and Mesoporous Materials*, **2012**, 151, 172-179	5.3	26
5	Ordered Mesoporous Carbon/MoO2 Nanocomposites as Stable Supercapacitor Electrodes. *ECS Electrochemistry Letters*, **2012**, 1, A17-A20		20
4	Crystallinity-controlled titanium oxide-carbon nanocomposites with enhanced lithium storage performance. *ChemSusChem*, **2012**, 5, 2376-82	8.3	16
3	A novel mesoporous carbon-silica-titania nanocomposite as a high performance anode material in lithium ion batteries. *Chemical Communications*, **2011**, 47, 4944-6	5.8	37
2	Development of an Ordered Mesoporous Carbon/MoO2 Nanocomposite for High Performance Supercapacitor Electrode. *Electrochemical and Solid-State Letters*, **2011**, 14, A157		24
1	Layered 2D Halide Perovskites beyond the Ruddlesden-Popper Phase: Tailored Interlayer Chemistries for High-Performance Solar Cells. *Angewandte Chemie*,e202112022	3.6	