Hairen Tan

List of Publications by Year
in descending order

103 papers	15,118 citations	41323 49 h-index	37183 96 g-index
104 all docs	104 docs citations	104 times ranked	14579 citing authors

#	Article	IF	Citations
1	All-perovskite tandem solar cells with improved grain surface passivation. Nature, 2022, 603, 73-78.	13.7	544
2	Efficient and Stable Wideâ€Bandgap Perovskite Solar Cells Derived from a Thermodynamic Phaseâ€Pure Intermediate. Solar Rrl, 2022, 6, .	3.1	11
3	Steric Engineering Enables Efficient and Photostable Wideâ€Bandgap Perovskites for Allâ€Perovskite Tandem Solar Cells. Advanced Materials, 2022, 34, e2110356.	11.1	48
4	Decarboxylative tandem C-N coupling with nitroarenes via SH2 mechanism. Nature Communications, 2022, 13, 2432.	5.8	32
5	Scalable processing for realizing 21.7%-efficient all-perovskite tandem solar modules. Science, 2022, 376, 762-767.	6.0	127
6	Cesium acetate-assisted crystallization for high-performance inverted CsPbI₃ perovskite solar cells. Nanotechnology, 2022, 33, 375205.	1.3	7
7	Flexible all-perovskite tandem solar cells approaching 25% efficiency with molecule-bridged hole-selective contact. Nature Energy, 2022, 7, 708-717.	19.8	171
8	Simultaneously enhanced moisture tolerance and defect passivation of perovskite solar cells with cross-linked grain encapsulation. Journal of Energy Chemistry, 2021, 56, 455-462.	7.1	31
9	Perovskite-based tandem solar cells. Science Bulletin, 2021, 66, 621-636.	4.3	91
10	Vapor treatment enables efficient and stable FAPbI3 perovskite solar cells. Science China Chemistry, 2021, 64, 5-6.	4.2	3
11	Cross-linked hole transport layers for high-efficiency perovskite tandem solar cells. Science China Chemistry, 2021, 64, 2025-2034.	4.2	23
12	Polymerâ€Supported Liquid Layer Electrolyzer Enabled Electrochemical CO₂ Reduction to CO with High Energy Efficiency. ChemistryOpen, 2021, 10, 639-644.	0.9	9
13	The Main Progress of Perovskite Solar Cells in 2020â€"2021. Nano-Micro Letters, 2021, 13, 152.	14.4	250
14	Photonics for enhanced perovskite optoelectronics. Nanophotonics, 2021, 10, 1941-1942.	2.9	3
15	Thermally Stable Allâ€Perovskite Tandem Solar Cells Fully Using Metal Oxide Charge Transport Layers and Tunnel Junction. Solar Rrl, 2021, 5, 2100814.	3.1	24
16	Synergistic Tandem Solar Electricity-Water Generators. Joule, 2020, 4, 347-358.	11.7	91
17	Edge stabilization in reduced-dimensional perovskites. Nature Communications, 2020, 11, 170.	5.8	147
18	Simultaneous Contact and Grainâ€Boundary Passivation in Planar Perovskite Solar Cells Using SnO₂â€KCl Composite Electron Transport Layer. Advanced Energy Materials, 2020, 10, 1903083.	10.2	323

#	Article	IF	Citations
19	A 2.16ÂeV bandgap polymer donor gives 16% power conversion efficiency. Science Bulletin, 2020, 65, 179-181.	4.3	75
20	All-perovskite tandem solar cells with 24.2% certified efficiency and area over 1â€‰cm2 using surface-anchoring zwitterionic antioxidant. Nature Energy, 2020, 5, 870-880.	19.8	497
21	Solution-Processed Monolithic All-Perovskite Triple-Junction Solar Cells with Efficiency Exceeding 20%. ACS Energy Letters, 2020, 5, 2819-2826.	8.8	69
22	Dual Coordination of Ti and Pb Using Bilinkable Ligands Improves Perovskite Solar Cell Performance and Stability. Advanced Functional Materials, 2020, 30, 2005155.	7.8	33
23	Ultrasensitive and stable X-ray detection using zero-dimensional lead-free perovskites. Journal of Energy Chemistry, 2020, 49, 299-306.	7.1	148
24	Combining Efficiency and Stability in Mixed Tinâ€“Lead Perovskite Solar Cells by Capping Grains with an Ultrathin 2D Layer. Advanced Materials, 2020, 32, e1907058.	11.1	148
25	Toward stable and efficient Sn-containing perovskite solar cells. Science Bulletin, 2020, 65, 786-790.	4.3	21
26	Tin and Mixed Leadâ€“Tin Halide Perovskite Solar Cells: Progress and their Application in Tandem Solar Cells. Advanced Materials, 2020, 32, e1907392.	11.1	203
27	Efficient and Stable Thinâ€Film Luminescent Solar Concentrators Enabled by Nearâ€Infrared Emission Perovskite Nanocrystals. Angewandte Chemie - International Edition, 2020, 59, 7738-7742.	7.2	64
28	Efficient and Stable Thinâ€Film Luminescent Solar Concentrators Enabled by Nearâ€Infrared Emission Perovskite Nanocrystals. Angewandte Chemie, 2020, 132, 7812-7816.	1.6	6
29	Record Photocurrent Density over 26â€‰mAâ€‰cm âˆ’2 in Planar Perovskite Solar Cells Enabled by Antireflective Cascaded Electron Transport Layer. Solar Rrl, 2020, 4, 2000169.	3.1	17
30	Recent progress in developing efficient monolithic all-perovskite tandem solar cells. Journal of Semiconductors, 2020, 41, 051201.	2.0	19
31	Combining Efficiency and Stability in Mixed Tin-Lead Perovskite Solar Cells by Capping Grains with an Ultra-thin 2D layer. , 2020, , .		4
32	An Ultraâ€low Concentration of Gold Nanoparticles Embedded in the NiO Hole Transport Layer Boosts the Performance of pâ€iâ€n Perovskite Solar Cells. Solar Rrl, 2019, 3, 1800278.	3.1	38
33	CsPb(I Br1âˆ’)3 solar cells. Science Bulletin, 2019, 64, 1532-1539.	4.3	114
34	Low-temperature processed inorganic hole transport layer for efficient and stable mixed Pb-Sn low-bandgap perovskite solar cells. Science Bulletin, 2019, 64, 1399-1401.	4.3	66
35	Thermal unequilibrium of strained black CsPbI ₃ thin films. Science, 2019, 365, 679-684.	6.0	444
36	Photo-oxidative degradation of methylammonium lead iodide perovskite: mechanism and protection. Journal of Materials Chemistry A, 2019, 7, 2275-2282.	5.2	105

#	Article	IF	Citations
37	Suppressed Ion Migration in Reduced-Dimensional Perovskites Improves Operating Stability. ACS Energy Letters, 2019, 4, 1521-1527.	8.8	130
38	Lattice anchoring stabilizes solution-processed semiconductors. Nature, 2019, 570, 96-101.	13.7	208
39	Anchored Ligands Facilitate Efficient B-Site Doping in Metal Halide Perovskites. Journal of the American Chemical Society, 2019, 141, 8296-8305.	6.6	53
40	In Situ Backâ€Contact Passivation Improves Photovoltage and Fill Factor in Perovskite Solar Cells. Advanced Materials, 2019, 31, e1807435.	11.1	143
41	Monolithic all-perovskite tandem solar cells with 24.8% efficiency exploiting comproportionation to suppress Sn(ii) oxidation in precursor ink. Nature Energy, 2019, 4, 864-873.	19.8	736
42	Modeling and analyses of energy performances of photovoltaic greenhouses with sun-tracking functionality. Applied Energy, 2019, 233-234, 424-442.	5.1	53
43	Chemical Stability and Performance of Doped Silicon Oxide Layers for Use in Thin-Film Silicon Solar Cells. IEEE Journal of Photovoltaics, 2019, 9, 3-11.	1.5	8
44	Perovskite seeding growth of formamidinium-lead-iodide-based perovskites for efficient and stable solar cells. Nature Communications, 2018, 9, 1607.	5.8	309
45	2D matrix engineering for homogeneous quantum dot coupling in photovoltaic solids. Nature Nanotechnology, 2018, 13, 456-462.	15.6	252
46	Synthetic Control over Quantum Well Width Distribution and Carrier Migration in Low-Dimensional Perovskite Photovoltaics. Journal of the American Chemical Society, 2018, 140, 2890-2896.	6.6	288
47	Amideâ€Catalyzed Phaseâ€Selective Crystallization Reduces Defect Density in Wideâ€Bandgap Perovskites. Advanced Materials, 2018, 30, e1706275.	11.1	80
48	Chemical stability and performance of doped silicon oxide layers for use in thin film silicon solar cells. , 2018, , .		0
49	Precise Control of Thermal and Redox Properties of Organic Holeâ€Transport Materials. Angewandte Chemie - International Edition, 2018, 57, 15529-15533.	7.2	41
50	Precise Control of Thermal and Redox Properties of Organic Holeâ€Transport Materials. Angewandte Chemie, 2018, 130, 15755-15759.	1.6	15
51	Multibandgap quantum dot ensembles for solar-matched infrared energy harvesting. Nature Communications, 2018, 9, 4003.	5.8	56
52	Copper nanocavities confine intermediates for efficient electrosynthesis of C3 alcohol fuels from carbon monoxide. Nature Catalysis, 2018, 1, 946-951.	16.1	354
53	Copper-on-nitride enhances the stable electrosynthesis of multi-carbon products from CO2. Nature Communications, 2018, 9, 3828.	5.8	279
54	Challenges for commercializing perovskite solar cells. Science, 2018, 361, .	6.0	1,327

#	Article	IF	Citations
55	Color-stable highly luminescent sky-blue perovskite light-emitting diodes. Nature Communications, 2018, 9, 3541.	5.8	536
56	Dipolar cations confer defect tolerance in wide-bandgap metal halide perovskites. Nature Communications, 2018, 9, 3100.	5.8	237
57	A photovoltaic window with sun-tracking shading elements towards maximum power generation and non-glare daylighting. Applied Energy, 2018, 228, 1454-1472.	5.1	34
58	Suppression of atomic vacancies via incorporation of isovalent small ions to increase the stability of halide perovskite solar cells in ambient air. Nature Energy, 2018, 3, 648-654.	19.8	552
59	Compound Homojunction:Heterojunction Reduces Bulk and Interface Recombination in ZnO Photoanodes for Water Splitting. Small, 2017, 13, 1603527.	5.2	29
60	Efficient and stable solution-processed planar perovskite solar cells via contact passivation. Science, 2017, 355, 722-726.	6.0	2,019
61	Pseudohalideâ€Exchanged Quantum Dot Solids Achieve Record Quantum Efficiency in Infrared Photovoltaics. Advanced Materials, 2017, 29, 1700749.	11.1	79
62	Tailoring the Energy Landscape in Quasi-2D Halide Perovskites Enables Efficient Green-Light Emission. Nano Letters, 2017, 17, 3701-3709.	4.5	409
63	Ultra-bright and highly efficient inorganic based perovskite light-emitting diodes. Nature Communications, 2017, 8, 15640.	5.8	669
64	Quadrupleâ€Junction Thinâ€Film Silicon Solar Cells Using Four Different Absorber Materials. Solar Rrl, 2017, 1, 1700036.	3.1	6
65	Nanoimprint-Transfer-Patterned Solids Enhance Light Absorption in Colloidal Quantum Dot Solar Cells. Nano Letters, 2017, 17, 2349-2353.	4.5	46
66	Conductive layer protected and oxide catalyst-coated thin-film silicon solar cell as an efficient photoanode. Catalysis Science and Technology, 2017, 7, 5608-5613.	2.1	7
67	Identification of the physical origin behind disorder, heterogeneity, and reconstruction and their correlation with the photoluminescence lifetime in hybrid perovskite thin films. Journal of Materials Chemistry A, 2017, 5, 21002-21015.	5.2	10
68	Chemically Addressable Perovskite Nanocrystals for Lightâ€Emitting Applications. Advanced Materials, 2017, 29, 1701153.	11.1	139
69	Mobile-Ion-Induced Degradation of Organic Hole-Selective Layers in Perovskite Solar Cells. Journal of Physical Chemistry C, 2017, 121, 14517-14523.	1.5	117
70	A thin-film silicon/silicon hetero-junction hybrid solar cell for photoelectrochemical water-reduction applications. Solar Energy Materials and Solar Cells, 2016, 150, 82-87.	3.0	17
71	Optical Resonance Engineering for Infrared Colloidal Quantum Dot Photovoltaics. ACS Energy Letters, 2016, 1, 852-857.	8.8	27
72	A thin-film silicon based photocathode with a hydrogen doped TiO₂ protection layer for solar hydrogen evolution. Journal of Materials Chemistry A, 2016, 4, 16841-16848.	5.2	38

#	Article	IF	Citations
73	10.6% Certified Colloidal Quantum Dot Solar Cells via Solvent-Polarity-Engineered Halide Passivation. Nano Letters, 2016, 16, 4630-4634.	4.5	312
74	Highly Efficient Hybrid Polymer and Amorphous Silicon Multijunction Solar Cells with Effective Optical Management. Advanced Materials, 2016, 28, 2170-2177.	11.1	36
75	Highly transparent modulated surface textured front electrodes for highâ€efficiency multijunction thinâ€film silicon solar cells. Progress in Photovoltaics: Research and Applications, 2015, 23, 949-963.	4.4	46
76	High pressure processing of hydrogenated amorphous silicon solar cells: Relation between nanostructure and high open-circuit voltage. Applied Physics Letters, 2015, 106, .	1.5	21
77	Modulated surface textured glass as substrate for high efficiency microcrystalline silicon solar cells. Solar Energy Materials and Solar Cells, 2015, 133, 156-162.	3.0	23
78	Wide bandgap p-type nanocrystalline silicon oxide as window layer for high performance thin-film silicon multi-junction solar cells. Solar Energy Materials and Solar Cells, 2015, 132, 597-605.	3.0	71
79	Enhancing the driving field for plasmonic nanoparticles in thin-film solar cells. Optics Express, 2014, 22, A1023.	1.7	24
80	Quadruple-junction thin-film silicon-based solar cells with high open-circuit voltage. Applied Physics Letters, 2014, 105, 063902.	1.5	44
81	Plasmonic Nanoparticle Films for Solar Cell Applications Fabricated by Size-selective Aerosol Deposition. Energy Procedia, 2014, 60, 3-12.	1.8	29
82	Towards Lambertian internal light scattering in solar cells using coupled plasmonic and dielectric nanoparticles as back reflector. , 2013, , .		3
83	Improved light trapping in microcrystalline silicon solar cells by plasmonic back reflector with broad angular scattering and low parasitic absorption. Applied Physics Letters, 2013, 102, .	1.5	58
84	Combined Optical and Electrical Design of Plasmonic Back Reflector for High-Efficiency Thin-Film Silicon Solar Cells. IEEE Journal of Photovoltaics, 2013, 3, 53-58.	1.5	25
85	Polystyrene-Microsphere-Assisted Patterning of ZnO Nanostructures: Growth and Characterization. Journal of Nanoscience and Nanotechnology, 2013, 13, 1101-1105.	0.9	4
86	Micro-textures for efficient light trapping and improved electrical performance in thin-film nanocrystalline silicon solar cells. Applied Physics Letters, 2013, 103, .	1.5	63
87	Combined optical and electrical design of plasmonic back reflector for high-efficiency thin-film silicon solar cells. , 2013, , .		0
88	Plasmonic Solar Cells with Embedded Silver Nanoparticles from Vapor Condensation. Materials Research Society Symposia Proceedings, 2012, 1391, 52.	0.1	4
89	Plasmonic Light Trapping in Thin-film Silicon Solar Cells with Improved Self-Assembled Silver Nanoparticles. Nano Letters, 2012, 12, 4070-4076.	4.5	395
90	Combined optical and electrical design of plasmonic back reflector for high-efficiency thin-film silicon solar cells. , 2012, , .		0

#	Article	IF	Citations
91	Plasmon enhanced polymer solar cells by spin-coating Au nanoparticles on indium-tin-oxide substrate. Applied Physics Letters, 2012, 101, 133903.	1.5	27
92	Controllable Growth of Highly Ordered ZnO Nanorod Arrays via Inverted Self-Assembled Monolayer Template. ACS Applied Materials & Interfaces, 2011, 3, 4388-4395.	4.0	43
93	Plasmonic Polymer Tandem Solar Cell. ACS Nano, 2011, 5, 6210-6217.	7.3	326
94	Performance improvement of conjugated polymer and ZnO hybrid solar cells using nickel oxide as anode buffer layer. Physica Status Solidi (A) Applications and Materials Science, 2011, 208, 2865-2870.	0.8	9
95	Electrical transport properties of the Si-doped cubic boron nitride thin films prepared by in situ cosputtering. Journal of Applied Physics, 2011, 109, 023716.	1.1	43
96	Enhancement of ZnO ultraviolet emission by surface plasmon coupling using a rough NiSi2layer synthesized by ion implantation. Journal of Semiconductors, 2011, 32, 102002.	2.0	0
97	Improved electroluminescence from n-ZnO/AlN/p-GaN heterojunction light-emitting diodes. Applied Physics Letters, 2010, 96, 201102.	1.5	77
98	Effects of silicon incorporation on composition, structure and electric conductivity of cubic boron nitride thin films. Diamond and Related Materials, 2010, 19, 1371-1376.	1.8	12
99	Electroluminescence behavior of ZnO/Si heterojunctions: Energy band alignment and interfacial microstructure. Journal of Applied Physics, 2010, 107, .	1.1	73
100	Electrical bistability and negative differential resistance in diodes based on silver nanoparticle-poly(N-vinylcarbazole) composites. Journal of Applied Physics, 2010, 108, 094320.	1.1	13
101	Comparison and combination of several stress relief methods for cubic boron nitride films deposited by ion beam assisted deposition. Surface and Coatings Technology, 2009, 203, 1452-1456.	2.2	12
102	Highly conductive Al-doped tetra-needle-like ZnO whiskers prepared by a solid state method. Materials Science and Engineering B: Solid-State Materials for Advanced Technology, 2008, 150, 203-207.	1.7	15
103	Efficient, stable and scalable all-perovskite tandem solar cells. , 0, , .		0