Hairen Tan

List of Publications by Year in Descending Order

96 papers	10,080 citations	41 h-index	100 g-index
104 ext. papers	12,345 ext. citations	15 avg, IF	6.27 L-index

#	Paper	IF	Citations
96	All-perovskite tandem solar cells with improved grain surface passivation.. *Nature*, **2022**,	50.4	112
95	Efficient and Stable Wide-Bandgap Perovskite Solar Cells Derived from a Thermodynamic Phase-Pure Intermediate. *Solar Rrl*, **2022**, 6, 2100906	7.1	4
94	Steric Engineering Enables Efficient and Photostable wide-bandgap Perovskites for all-perovskite Tandem Solar Cells.. *Advanced Materials*, **2022**, e2110356	24	7
93	Decarboxylative tandem C-N coupling with nitroarenes via S2 mechanism.. *Nature Communications*, **2022**, 13, 2432	17.4	2
92	Scalable processing for realizing 21.7%-efficient all-perovskite tandem solar modules.. *Science*, **2022**, 376, 762-767	33.3	18
91	Photonics for enhanced perovskite optoelectronics. *Nanophotonics*, **2021**, 10, 1941-1942	6.3	1
90	Thermally Stable All-Perovskite Tandem Solar Cells Fully Using Metal Oxide Charge Transport Layers and Tunnel Junction. *Solar Rrl*, **2021**, 5, 2100814	7.1	9
89	Cross-linked hole transport layers for high-efficiency perovskite tandem solar cells. *Science China Chemistry*, **2021**, 64, 2025	7.9	4
88	Polymer-Supported Liquid Layer Electrolyzer Enabled Electrochemical CO Reduction to CO with High Energy Efficiency. *ChemistryOpen*, **2021**, 10, 639-644	2.3	2
87	Simultaneously enhanced moisture tolerance and defect passivation of perovskite solar cells with cross-linked grain encapsulation. *Journal of Energy Chemistry*, **2021**, 56, 455-462	12	18
86	Perovskite-based tandem solar cells. *Science Bulletin*, **2021**, 66, 621-636	10.6	23
85	Vapor treatment enables efficient and stable FAPbI3 perovskite solar cells. *Science China Chemistry*, **2021**, 64, 5-6	7.9	2
84	The Main Progress of Perovskite Solar Cells in 2020-2021. *Nano-Micro Letters*, **2021**, 13, 152	19.5	78
83	Ultrasensitive and stable X-ray detection using zero-dimensional lead-free perovskites. *Journal of Energy Chemistry*, **2020**, 49, 299-306	12	75
82	Combining Efficiency and Stability in Mixed Tin-Lead Perovskite Solar Cells by Capping Grains with an Ultrathin 2D Layer. *Advanced Materials*, **2020**, 32, e1907058	24	92
81	Toward stable and efficient Sn-containing perovskite solar cells. *Science Bulletin*, **2020**, 65, 786-790	10.6	14
80	Tin and Mixed Lead-Tin Halide Perovskite Solar Cells: Progress and their Application in Tandem Solar Cells. *Advanced Materials*, **2020**, 32, e1907392	24	97

79	Efficient and Stable Thin-Film Luminescent Solar Concentrators Enabled by Near-Infrared Emission Perovskite Nanocrystals. *Angewandte Chemie - International Edition*, **2020**, 59, 7738-7742	16.4	35
78	Efficient and Stable Thin-Film Luminescent Solar Concentrators Enabled by Near-Infrared Emission Perovskite Nanocrystals. *Angewandte Chemie*, **2020**, 132, 7812-7816	3.6	4
77	Recent progress in developing efficient monolithic all-perovskite tandem solar cells. *Journal of Semiconductors*, **2020**, 41, 051201	2.3	10
76	Synergistic Tandem Solar Electricity-Water Generators. *Joule*, **2020**, 4, 347-358	27.8	40
75	Edge stabilization in reduced-dimensional perovskites. *Nature Communications*, **2020**, 11, 170	17.4	79
74	Simultaneous Contact and Grain-Boundary Passivation in Planar Perovskite Solar Cells Using SnO2-KCl Composite Electron Transport Layer. *Advanced Energy Materials*, **2020**, 10, 1903083	21.8	178
73	A 2.16□eV bandgap polymer donor gives 16% power conversion efficiency. *Science Bulletin*, **2020**, 65, 179-181	10.6	61
72	All-perovskite tandem solar cells with 24.2% certified efficiency and area over 1 cm2 using surface-anchoring zwitterionic antioxidant. *Nature Energy*, **2020**, 5, 870-880	62.3	233
71	Solution-Processed Monolithic All-Perovskite Triple-Junction Solar Cells with Efficiency Exceeding 20%. *ACS Energy Letters*, **2020**, 5, 2819-2826	20.1	30
70	Dual Coordination of Ti and Pb Using Bilinkable Ligands Improves Perovskite Solar Cell Performance and Stability. *Advanced Functional Materials*, **2020**, 30, 2005155	15.6	11
69	Record Photocurrent Density over 26 mA cm□ in Planar Perovskite Solar Cells Enabled by Antireflective Cascaded Electron Transport Layer. *Solar Rrl*, **2020**, 4, 2000169	7.1	11
68	Photo-oxidative degradation of methylammonium lead iodide perovskite: mechanism and protection. *Journal of Materials Chemistry A*, **2019**, 7, 2275-2282	13	60
67	Suppressed Ion Migration in Reduced-Dimensional Perovskites Improves Operating Stability. *ACS Energy Letters*, **2019**, 4, 1521-1527	20.1	89
66	Lattice anchoring stabilizes solution-processed semiconductors. *Nature*, **2019**, 570, 96-101	50.4	149
65	Anchored Ligands Facilitate Efficient B-Site Doping in Metal Halide Perovskites. *Journal of the American Chemical Society*, **2019**, 141, 8296-8305	16.4	32
64	In Situ Back-Contact Passivation Improves Photovoltage and Fill Factor in Perovskite Solar Cells. *Advanced Materials*, **2019**, 31, e1807435	24	112
63	CsPb(I Br1)3 solar cells. *Science Bulletin*, **2019**, 64, 1532-1539	10.6	92
62	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	10.6	42

61	Thermal unequilibrium of strained black CsPbI thin films. *Science*, **2019**, 365, 679-684	33.3	272
60	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	62.3	463
59	Modeling and analyses of energy performances of photovoltaic greenhouses with sun-tracking functionality. *Applied Energy*, **2019**, 233-234, 424-442	10.7	32
58	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	3.7	6
57	Perovskite seeding growth of formamidinium-lead-iodide-based perovskites for efficient and stable solar cells. *Nature Communications*, **2018**, 9, 1607	17.4	218
56	2D matrix engineering for homogeneous quantum dot coupling in photovoltaic solids. *Nature Nanotechnology*, **2018**, 13, 456-462	28.7	196
55	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	16.4	211
54	Amide-Catalyzed Phase-Selective Crystallization Reduces Defect Density in Wide-Bandgap Perovskites. *Advanced Materials*, **2018**, 30, e1706275	24	62
53	Dipolar cations confer defect tolerance in wide-bandgap metal halide perovskites. *Nature Communications*, **2018**, 9, 3100	17.4	171
52	A photovoltaic window with sun-tracking shading elements towards maximum power generation and non-glare daylighting. *Applied Energy*, **2018**, 228, 1454-1472	10.7	21
51	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	62.3	355
50	An Ultra-low Concentration of Gold Nanoparticles Embedded in the NiO Hole Transport Layer Boosts the Performance of p-i-n Perovskite Solar Cells. *Solar Rrl*, **2018**, 3, 1800278	7.1	17
49	Precise Control of Thermal and Redox Properties of Organic Hole-Transport Materials. *Angewandte Chemie - International Edition*, **2018**, 57, 15529-15533	16.4	26
48	Precise Control of Thermal and Redox Properties of Organic Hole-Transport Materials. *Angewandte Chemie*, **2018**, 130, 15755-15759	3.6	7
47	Multibandgap quantum dot ensembles for solar-matched infrared energy harvesting. *Nature Communications*, **2018**, 9, 4003	17.4	39
46	Copper nanocavities confine intermediates for efficient electrosynthesis of C3 alcohol fuels from carbon monoxide. *Nature Catalysis*, **2018**, 1, 946-951	36.5	205
45	Copper-on-nitride enhances the stable electrosynthesis of multi-carbon products from CO. *Nature Communications*, **2018**, 9, 3828	17.4	164
44	Challenges for commercializing perovskite solar cells. *Science*, **2018**, 361,	33.3	853

43	Color-stable highly luminescent sky-blue perovskite light-emitting diodes. *Nature Communications*, **2018**, 9, 3541	17.4	370
42	Compound Homojunction:Heterojunction Reduces Bulk and Interface Recombination in ZnO Photoanodes for Water Splitting. *Small*, **2017**, 13, 1603527	11	21
41	Efficient and stable solution-processed planar perovskite solar cells via contact passivation. *Science*, **2017**, 355, 722-726	33.3	1667
40	Pseudohalide-Exchanged Quantum Dot Solids Achieve Record Quantum Efficiency in Infrared Photovoltaics. *Advanced Materials*, **2017**, 29, 1700749	24	61
39	Tailoring the Energy Landscape in Quasi-2D Halide Perovskites Enables Efficient Green-Light Emission. *Nano Letters*, **2017**, 17, 3701-3709	11.5	309
38	Ultra-bright and highly efficient inorganic based perovskite light-emitting diodes. *Nature Communications*, **2017**, 8, 15640	17.4	557
37	Quadruple-Junction Thin-Film Silicon Solar Cells Using Four Different Absorber Materials. *Solar Rrl*, **2017**, 1, 1700036	7.1	5
36	Nanoimprint-Transfer-Patterned Solids Enhance Light Absorption in Colloidal Quantum Dot Solar Cells. *Nano Letters*, **2017**, 17, 2349-2353	11.5	39
35	Conductive layer protected and oxide catalyst-coated thin-film silicon solar cell as an efficient photoanode. *Catalysis Science and Technology*, **2017**, 7, 5608-5613	5.5	4
34	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	13	9
33	Chemically Addressable Perovskite Nanocrystals for Light-Emitting Applications. *Advanced Materials*, **2017**, 29, 1701153	24	106
32	Mobile-Ion-Induced Degradation of Organic Hole-Selective Layers in Perovskite Solar Cells. *Journal of Physical Chemistry C*, **2017**, 121, 14517-14523	3.8	83
31	10.6% Certified Colloidal Quantum Dot Solar Cells via Solvent-Polarity-Engineered Halide Passivation. *Nano Letters*, **2016**, 16, 4630-4	11.5	275
30	Highly Efficient Hybrid Polymer and Amorphous Silicon Multijunction Solar Cells with Effective Optical Management. *Advanced Materials*, **2016**, 28, 2170-7	24	34
29	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	6.4	15
28	Optical Resonance Engineering for Infrared Colloidal Quantum Dot Photovoltaics. *ACS Energy Letters*, **2016**, 1, 852-857	20.1	19
27	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	13	26
26	Modulated surface textured glass as substrate for high efficiency microcrystalline silicon solar cells. *Solar Energy Materials and Solar Cells*, **2015**, 133, 156-162	6.4	19

25	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	6.4	66
24	Highly transparent modulated surface textured front electrodes for high-efficiency multijunction thin-film silicon solar cells. *Progress in Photovoltaics: Research and Applications*, **2015**, 23, 949-963	6.8	40
23	High pressure processing of hydrogenated amorphous silicon solar cells: Relation between nanostructure and high open-circuit voltage. *Applied Physics Letters*, **2015**, 106, 043905	3.4	18
22	Enhancing the driving field for plasmonic nanoparticles in thin-film solar cells. *Optics Express*, **2014**, 22 Suppl 4, A1023-8	3.3	19
21	Quadruple-junction thin-film silicon-based solar cells with high open-circuit voltage. *Applied Physics Letters*, **2014**, 105, 063902	3.4	39
20	Plasmonic Nanoparticle Films for Solar Cell Applications Fabricated by Size-selective Aerosol Deposition. *Energy Procedia*, **2014**, 60, 3-12	2.3	22
19	Towards Lambertian internal light scattering in solar cells using coupled plasmonic and dielectric nanoparticles as back reflector **2013**,		2
18	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, 153902	3.4	50
17	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	3.7	23
16	Polystyrene-microsphere-assisted patterning of ZnO nanostructures: growth and characterization. *Journal of Nanoscience and Nanotechnology*, **2013**, 13, 1101-5	1.3	3
15	Micro-textures for efficient light trapping and improved electrical performance in thin-film nanocrystalline silicon solar cells. *Applied Physics Letters*, **2013**, 103, 173905	3.4	58
14	Plasmonic light trapping in thin-film silicon solar cells with improved self-assembled silver nanoparticles. *Nano Letters*, **2012**, 12, 4070-6	11.5	347
13	Plasmon enhanced polymer solar cells by spin-coating Au nanoparticles on indium-tin-oxide substrate. *Applied Physics Letters*, **2012**, 101, 133903	3.4	27
12	Plasmonic Solar Cells with Embedded Silver Nanoparticles from Vapor Condensation. *Materials Research Society Symposia Proceedings*, **2012**, 1391, 52		2
11	Plasmonic polymer tandem solar cell. *ACS Nano*, **2011**, 5, 6210-7	16.7	304
10	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	1.6	9
9	Controllable growth of highly ordered ZnO nanorod arrays via inverted self-assembled monolayer template. *ACS Applied Materials & Interfaces*, **2011**, 3, 4388-95	9.5	41
8	Electrical transport properties of the Si-doped cubic boron nitride thin films prepared by in situ cosputtering. *Journal of Applied Physics*, **2011**, 109, 023716	2.5	39

7	Enhancement of ZnO ultraviolet emission by surface plasmon coupling using a rough NiSi2layer synthesized by ion implantation. *Journal of Semiconductors*, **2011**, 32, 102002	2.3	
6	Improved electroluminescence from n-ZnO/AlN/p-GaN heterojunction light-emitting diodes. *Applied Physics Letters*, **2010**, 96, 201102	3.4	75
5	Effects of silicon incorporation on composition, structure and electric conductivity of cubic boron nitride thin films. *Diamond and Related Materials*, **2010**, 19, 1371-1376	3.5	10
4	Electroluminescence behavior of ZnO/Si heterojunctions: Energy band alignment and interfacial microstructure. *Journal of Applied Physics*, **2010**, 107, 083701	2.5	66
3	Electrical bistability and negative differential resistance in diodes based on silver nanoparticle-poly(N-vinylcarbazole) composites. *Journal of Applied Physics*, **2010**, 108, 094320	2.5	13
2	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	4.4	12
1	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	3.1	14