Jiang Liu

List of Publications by Year
in descending order

93 papers	4,340 citations	109321 35 h-index	114465 63 g-index
93 all docs	93 docs citations	93 times ranked	5128 citing authors

#	Article	IF	Citations
1	Damp heatâ€“stable perovskite solar cells with tailored-dimensionality 2D/3D heterojunctions. Science, 2022, 376, 73-77.	12.6	366
2	Double-Walled Carbon Nanotube Solar Cells. Nano Letters, 2007, 7, 2317-2321.	9.1	321
3	Improved Crystallization of Perovskite Films by Optimized Solvent Annealing for High Efficiency Solar Cell. ACS Applied Materials & Interfaces, 2015, 7, 24008-24015.	8.0	257
4	Tin Oxide Electronâ€Selective Layers for Efficient, Stable, and Scalable Perovskite Solar Cells. Advanced Materials, 2021, 33, e2005504.	21.0	196
5	Highly efficient fullerene/perovskite planar heterojunction solar cells via cathode modification with an amino-functionalized polymer interlayer. Journal of Materials Chemistry A, 2014, 2, 19598-19603.	10.3	186
6	Uncovering the Veil of the Degradation in Perovskite CH₃NH₃PbI₃ upon Humidity Exposure: A First-Principles Study. Journal of Physical Chemistry Letters, 2015, 6, 3289-3295.	4.6	171
7	Efficient bifacial monolithic perovskite/silicon tandem solar cells via bandgap engineering. Nature Energy, 2021, 6, 167-175.	39.5	164
8	Efficient and stable perovskite-silicon tandem solar cells through contact displacement by MgF <i>_x </i>. Science, 2022, 377, 302-306.	12.6	141
9	High-Performance Perovskite Single-Junction and Textured Perovskite/Silicon Tandem Solar Cells via Slot-Die-Coating. ACS Energy Letters, 2020, 5, 3034-3040.	17.4	134
10	Low-temperature, solution processed metal sulfide as an electron transport layer for efficient planar perovskite solar cells. Journal of Materials Chemistry A, 2015, 3, 11750-11755.	10.3	122
11	Concurrent cationic and anionic perovskite defect passivation enables 27.4% perovskite/silicon tandems with suppression of halide segregation. Joule, 2021, 5, 1566-1586.	24.0	119
12	Responses of soil carbon pool and soil aggregates associated organic carbon to straw and straw-derived biochar addition in a dryland cropping mesocosm system. Agriculture, Ecosystems and Environment, 2018, 265, 576-586.	5.3	115
13	A Review of the Role of Solvents in Formation of High-Quality Solution-Processed Perovskite Films. ACS Applied Materials & Interfaces, 2019, 11, 7639-7654.	8.0	113
14	28.2%-efficient, outdoor-stable perovskite/silicon tandem solar cell. Joule, 2021, 5, 3169-3186.	24.0	99
15	Defect Passivation in Perovskite Solar Cells by Cyanoâ€Based Ï€â€Conjugated Molecules for Improved Performance and Stability. Advanced Functional Materials, 2020, 30, 2002861.	14.9	87
16	Ligand-bridged charge extraction and enhanced quantum efficiency enable efficient nâ€“iâ€“p perovskite/silicon tandem solar cells. Energy and Environmental Science, 2021, 14, 4377-4390.	30.8	79
17	Linked Nickel Oxide/Perovskite Interface Passivation for Highâ€Performance Textured Monolithic Tandem Solar Cells. Advanced Energy Materials, 2021, 11, 2101662.	19.5	77
18	Soil aggregate and organic carbon distribution at dry land soil and paddy soil: the role of different straws returning. Environmental Science and Pollution Research, 2017, 24, 27942-27952.	5.3	76

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19	Structures and Electronic Properties of Different CH3NH3PbI3/TiO2 Interface: A First-Principles Study. Scientific Reports, 2016, 6, 20131.	3.3	69
20	Variation in N2O emission and N2O related microbial functional genes in straw- and biochar-amended and non-amended soils. Applied Soil Ecology, 2019, 137, 57-68.	4.3	65
21	Preparation of Cu(In,Ga)Se2 thin film by sputtering from Cu(In,Ga)Se2 quaternary target. Progress in Natural Science: Materials International, 2013, 23, 133-138.	4.4	59
22	FAPb_{1âˆ'x}Sn_xI₃mixed metal halide perovskites with improved light harvesting and stability for efficient planar heterojunction solar cells. Journal of Materials Chemistry A, 2017, 5, 9097-9106.	10.3	56
23	Earth-abundant and low-cost CZTS solar cell on flexible molybdenum foil. RSC Advances, 2014, 4, 23666-23669.	3.6	54
24	Electrodeposited CZTS solar cells from Reline electrolyte. Green Chemistry, 2014, 16, 3841-3845.	9.0	54
25	Fermi level alignment by copper doping for efficient ITO/perovskite junction solar cells. Journal of Materials Chemistry A, 2017, 5, 25211-25219.	10.3	53
26	Formation of organicâ€"inorganic mixed halide perovskite films by thermal evaporation of PbCl₂ and CH₃NH₃I compounds. RSC Advances, 2015, 5, 26175-26180.	3.6	47
27	Solution-Processable Small Molecules for High-Performance Organic Solar Cells with Rigidly Fluorinated 2,2â€²-Bithiophene Central Cores. ACS Applied Materials & Interfaces, 2016, 8, 11639-11648.	8.0	46
28	Scaling-up perovskite solar cells on hydrophobic surfaces. Nano Energy, 2021, 81, 105633.	16.0	46
29	Understanding the Role of the Electronâ€Transport Layer in Highly Efficient Planar Perovskite Solar Cells. ChemPhysChem, 2017, 18, 617-625.	2.1	44
30	Toward Stable Monolithic Perovskite/Silicon Tandem Photovoltaics: A Six-Month Outdoor Performance Study in a Hot and Humid Climate. ACS Energy Letters, 2021, 6, 2944-2951.	17.4	42
31	Cu2ZnSnSe4 thin film solar cells prepared by rapid thermal annealing of co-electroplated Cuâ€"Znâ€"Sn precursors. Solar Energy, 2013, 94, 1-7.	6.1	41
32	Polysilicon Passivating Contacts for Silicon Solar Cells: Interface Passivation and Carrier Transport Mechanism. ACS Applied Energy Materials, 2019, 2, 4609-4617.	5.1	41
33	Growth and evolution of solution-processed CH3NH3PbI3-xClx layer for highly efficient planar-heterojunction perovskite solar cells. Journal of Power Sources, 2016, 301, 242-250.	7.8	39
34	Cu(In,Ga)Se₂solar cell with 16.7% active-area efficiency achieved by sputtering from a quaternary target. Physica Status Solidi (A) Applications and Materials Science, 2015, 212, 1774-1778.	1.8	38
35	Lewis-Acid Doping of Triphenylamine-Based Hole Transport Materials Improves the Performance and Stability of Perovskite Solar Cells. ACS Applied Materials & Interfaces, 2020, 12, 23874-23884.	8.0	38
36	Cu(In,Ga)Se2-based solar cells prepared from Se-containing precursors. Vacuum, 2014, 102, 26-30.	3.5	32

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37	Potassium Thiocyanateâ€Assisted Enhancement of Slotâ€Dieâ€Coated Perovskite Films for Highâ€Performance Solar Cells. Small Science, 2021, 1, 2000044.	9.9	26
38	Large band-gap copolymers based on a 1,2,5,6-naphthalenediimide unit for polymer solar cells with high open circuit voltages and power conversion efficiencies. Journal of Materials Chemistry A, 2016, 4, 7372-7381.	10.3	25
39	The role of Na incorporation in the low-temperature processed CIGS thin film solar cells using post deposition treatment. Journal of Alloys and Compounds, 2016, 658, 12-18.	5.5	25
40	Nitrous oxide emission and the related denitrifier community: A short-term response to organic manure substituting chemical fertilizer. Ecotoxicology and Environmental Safety, 2020, 192, 110291.	6.0	25
41	Partial substitution of chemical fertilizer by organic materials changed the abundance, diversity, and activity of nirS-type denitrifying bacterial communities in a vegetable soil. Applied Soil Ecology, 2020, 152, 103589.	4.3	25
42	Annealing treatment of Cu(In,Ga)Se2 absorbers prepared by sputtering a quaternary target for 13.5% conversion efficiency device. Solar Energy, 2015, 118, 375-383.	6.1	24
43	Solutionâ€Processed MAPbBr₃ and CsPbBr₃ Singleâ€Crystal Detectors with Improved Xâ€Ray Sensitivity via Interfacial Engineering. Physica Status Solidi (A) Applications and Materials Science, 2020, 217, 2000104.	1.8	24
44	Raman and XPS studies of CIGS/Mo interfaces under various annealing temperatures. Materials Letters, 2014, 136, 278-281.	2.6	23
45	Reduced mineral fertilization coupled with straw return in field mesocosm vegetable cultivation helps to coordinate greenhouse gas emissions and vegetable production. Journal of Soils and Sediments, 2020, 20, 1834-1845.	3.0	23
46	Highly efficient random terpolymers for photovoltaic applications with enhanced absorption and molecular aggregation. Chinese Journal of Polymer Science (English Edition), 2017, 35, 249-260.	3.8	21
47	Monolithic Perovskite/Silicon Tandem Photovoltaics with Minimized Cell-to-Module Losses by Refractive-Index Engineering. ACS Energy Letters, 2022, 7, 2370-2372.	17.4	20
48	Multi-layer strategy to enhance the grain size of CIGS thin film fabricating by single quaternary CIGS target. Journal of Alloys and Compounds, 2017, 710, 172-176.	5.5	19
49	The relationships between electronic properties and microstructure of Cu(In,Ga)Se2 films prepared by sputtering from a quaternary target. Materials Letters, 2014, 137, 249-251.	2.6	18
50	Unleashing the Full Power of Perovskite/Silicon Tandem Modules with Solar Trackers. ACS Energy Letters, 2022, 7, 1604-1610.	17.4	18
51	A 16.5% Efficient Perovskite Solar Cells With Inorganic NiO Film as Hole Transport Material. IEEE Journal of Photovoltaics, 2018, 8, 1039-1043.	2.5	17
52	Copper Incorporation in Organicâ€Inorganic Hybrid Halide Perovskite Solar Cells. ChemistrySelect, 2018, 3, 12198-12204.	1.5	16
53	Triarylphosphine Oxide as Cathode Interfacial Material for Inverted Perovskite Solar Cells. Advanced Materials Interfaces, 2019, 6, 1900434.	3.7	16
54	Mixedâ€Cation MA_{<i>x</i>}Cs_{1âˆ’<i>x</i>}PbBr₃ Perovskite Single Crystals with Composition Management for Highâ€Sensitivity Xâ€Ray Detection. Physica Status Solidi - Rapid Research Letters, 2020, 14, 2000226.	2.4	14

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55	Photoactivated p-Doping of Organic Interlayer Enables Efficient Perovskite/Silicon Tandem Solar Cells. ACS Energy Letters, 2022, 7, 1987-1993.	17.4	14
56	An investigation on performance enhancement for KF post deposition treated CIGS solar cells fabricated by sputtering CIGS quaternary targets. Vacuum, 2018, 151, 233-236.	3.5	13
57	The effects of preheating temperature on CuInGaSe2/CdS interface and the device performances. Solar Energy, 2019, 194, 11-17.	6.1	13
58	Influences of Na on sintering of Cu(In,Ga)Se2 quaternary ceramic targets. Journal of Alloys and Compounds, 2015, 636, 335-340.	5.5	12
59	Understanding the Photovoltaic Performance of Perovskiteâ€“Spirobifluorene Solar Cells. ChemPhysChem, 2017, 18, 3030-3038.	2.1	12
60	Preparation and Characterization of Cu(In,Ga)Se₂Thin Films by Selenization of Cu_{0.8}Ga_{0.2}and In₂Se₃Precursor Films. International Journal of Photoenergy, 2012, 2012, 1-7.	2.5	11
61	Fabrication of Se-rich Cu(In1-XGaX)Se2 quaternary ceramic target. Vacuum, 2015, 119, 15-18.	3.5	11
62	Influences of Ga concentration on performances of CuInGaSe2 cells fabricated by sputtering-based method with ceramic quaternary target. Ceramics International, 2019, 45, 16405-16410.	4.8	11
63	Surface evolution of sputtered Cu(In,Ga)Se2 thin films under various annealing temperatures. Journal of Materials Science: Materials in Electronics, 2015, 26, 4840-4847.	2.2	10
64	Solution-processed bulk heterojunction solar cells based on interpenetrating CdS nanowires and carbon nanotubes. Nano Research, 2012, 5, 595-604.	10.4	9
65	Eliminating the excess Cu x Se phase in Cu-rich Cu(In,Ga)Se 2 by In 2 Se 3 treatment. Journal of Alloys and Compounds, 2017, 709, 31-35.	5.5	9
66	Investigation on Sb-doped induced Cu(InGa)Se2 films grain growth by sputtering process with Se-free annealing. Solar Energy, 2017, 157, 1074-1081.	6.1	9
67	Potassium Thiocyanateâ€Assisted Enhancement of Slotâ€Dieâ€Coated Perovskite Films for Highâ€Performance Solar Cells. Small Science, 2021, 1, 2170013.	9.9	9
68	Ga2Se3 treatment of Cu-rich CIGS thin films to fabricate Cu-poor CIGS thin films with large grains and U-shaped Ga distribution. Vacuum, 2018, 152, 184-187.	3.5	8
69	Fabrication of wide band-gap CuGaSe2 solar cells for tandem device applications by sputtering from a ternary target and post selenization treatment. Materials Letters, 2018, 230, 128-131.	2.6	8
70	Tuning Bandgap of Mixedâ€Halide Perovskite for Improved Photovoltaic Performance Under Monochromaticâ€Light Illumination. Physica Status Solidi (A) Applications and Materials Science, 2019, 216, 1800727.	1.8	8
71	The effects of annealing temperature on CIGSeS solar cells by sputtering from quaternary target with H2S post annealing. Applied Surface Science, 2019, 473, 848-854.	6.1	8
72	Optimization of CuInGaSSe properties and CuInGaSSe/CdS interface quality for efficient solar cells processed with CuInGa precursors. Journal of Power Sources, 2020, 479, 229105.	7.8	8

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73	Smooth and highly-crystalline Ag-doped CIGS films sputtered from quaternary ceramic targets. Ceramics International, 2021, 47, 2288-2293.	4.8	8
74	Study on the performance of Tungstenâ€“Titanium alloy film as a diffusion barrier for iron in a flexible CIGS solar cell. Solar Energy, 2015, 120, 357-362.	6.1	7
75	Cu(In,Ga)Se2 solar cells fabricated by sputtering from copper-poor and selenium-rich ceramic target with selenium-free post treatment. Materials Letters, 2016, 184, 69-72.	2.6	7
76	10.3%-efficient submicron-thick Cu(In,Ga)Se2 solar cells with absorber fabricated by sputtering In2Se3, CuGaSe2 and Cu2Se targets. Applied Surface Science, 2018, 442, 308-312.	6.1	7
77	Fabricating Cu(In,Ga)Se2 (CIGS) thin films with large grains based on the quaternary CIGS targets. Vacuum, 2017, 146, 282-286.	3.5	6
78	Two-stage method to enhance the grain size of Cu(In,Ga)Se2 absorbers based on sputtering quaternary Cu(In,Ga)Se2 target. Materials Letters, 2018, 212, 165-167.	2.6	6
79	Effects of Soil Conditioners on Aggregate Stability in a Clay Loam Soil: A Comparison Study of Biomass Ash with Other Four Conditioners. Communications in Soil Science and Plant Analysis, 2017, 48, 2294-2313.	1.4	5
80	Effects of Different Soil Amendments Application on Soil Aggregate Stability and Soil Consistency under Wetting and Drying Altered Planting System. Communications in Soil Science and Plant Analysis, 2019, 50, 2263-2277.	1.4	5
81	Gamma-ray irradiation-induced oxidation and disproportionation at the amorphous SiO₂/Si interfaces. Journal of Materials Chemistry C, 2020, 8, 17065-17073.	5.5	5
82	Photo-induced enhancement of lattice fluctuations in metal-halide perovskites. Nature Communications, 2022, 13, 1019.	12.8	5
83	Probing Ultrafast Interfacial Carrier Dynamics in Metal Halide Perovskite Films and Devices by Transient Reflection Spectroscopy. ACS Applied Materials & Interfaces, 2022, 14, 34281-34290.	8.0	5
84	Study of Cuâ€“Inâ€“Ga precursor for Cu(In,Ga)Se2 thin film prepared by the two-stage process. Journal of Materials Research, 2012, 27, 2639-2643.	2.6	4
85	Locking the morphology with a green, fast and efficient physical cross-linking approach for organic electronic applications. Organic Electronics, 2016, 28, 53-58.	2.6	4
86	A study on mechanisms of Sb-doping induced grain growth for Cu(InGa)Se2 absorbers deposited from quaternary targets. Journal of Alloys and Compounds, 2017, 727, 572-578.	5.5	4
87	Study on how the content of selenium in the precursors influences the properties of CuInSe2 thin films. Applied Surface Science, 2018, 434, 452-455.	6.1	3
88	Pre-deposition of CdS layers to improve the diode quality of CZTSSe solar cells. Materials Letters, 2018, 229, 372-374.	2.6	3
89	Temperatureâ€Gradientâ€Controlled Method Enabling Shape Control of 2D Perovskite Single Crystals for Photodetection. Physica Status Solidi - Rapid Research Letters, 0, , 2100099.	2.4	3
90	Linked Nickel Oxide/Perovskite Interface Passivation for Highâ€Performance Textured Monolithic Tandem Solar Cells (Adv. Energy Mater. 40/2021). Advanced Energy Materials, 2021, 11, 2170160.	19.5	2

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91	Study on the Performance of Oxygen-Rich Zn(O,S) Buffers Fabricated by Sputtering Deposition and Zn(O,S)/Cu(In,Ga)(S,Se)₂ Interfaces. ACS Applied Materials & Interfaces, 2022, 14, 24435-24446.	8.0	2
92	The multiple ways of making perovskite/silicon tandem solar cells: Which way to go?. , 0, , .		0
93	Monolithic perovskite/silicon tandem solar cells: combining stability with high performance. , 0, , .		0