Mengjin Yang

List of Publications by Citations

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73 papers	9,906 citations	48 h-index	79 g-index
79 ext. papers	11,136 ext. citations	16.3 avg, IF	6.47 L-index

#	Paper	IF	Citations
73	Stabilizing Perovskite Structures by Tuning Tolerance Factor: Formation of Formamidinium and Cesium Lead Iodide Solid-State Alloys. *Chemistry of Materials*, **2016**, 28, 284-292	9.6	1186
72	Scalable fabrication of perovskite solar cells. *Nature Reviews Materials*, **2018**, 3,	73.3	532
71	Origin of J-V Hysteresis in Perovskite Solar Cells. *Journal of Physical Chemistry Letters*, **2016**, 7, 905-17	6.4	530
70	Perovskite ink with wide processing window for scalable high-efficiency solar cells. *Nature Energy*, **2017**, 2,	62.3	398
69	Facile fabrication of large-grain CH3NH3PbI3-xBrx films for high-efficiency solar cells via CH3NH3Br-selective Ostwald ripening. *Nature Communications*, **2016**, 7, 12305	17.4	358
68	Defect Tolerance in Methylammonium Lead Triiodide Perovskite. *ACS Energy Letters*, **2016**, 1, 360-366	20.1	357
67	Extrinsic ion migration in perovskite solar cells. *Energy and Environmental Science*, **2017**, 10, 1234-1242	35.4	336
66	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
65	Low surface recombination velocity in solution-grown CH3NH3PbBr3 perovskite single crystal. *Nature Communications*, **2015**, 6, 7961	17.4	329
64	Long-range hot-carrier transport in hybrid perovskites visualized by ultrafast microscopy. *Science*, **2017**, 356, 59-62	33.3	315
63	Impact of Capacitive Effect and Ion Migration on the Hysteretic Behavior of Perovskite Solar Cells. *Journal of Physical Chemistry Letters*, **2015**, 6, 4693-700	6.4	285
62	Comparison of Recombination Dynamics in CH3NH3PbBr3 and CH3NH3PbI3 Perovskite Films: Influence of Exciton Binding Energy. *Journal of Physical Chemistry Letters*, **2015**, 6, 4688-92	6.4	284
61	Top and bottom surfaces limit carrier lifetime in lead iodide perovskite films. *Nature Energy*, **2017**, 2,	62.3	275
60	Square-Centimeter Solution-Processed Planar CH3NH3PbI3 Perovskite Solar Cells with Efficiency Exceeding 15. *Advanced Materials*, **2015**, 27, 6363-70	24	272
59	Controllable Sequential Deposition of Planar CH□NH□PbI□Perovskite Films via Adjustable Volume Expansion. *Nano Letters*, **2015**, 15, 3959-63	11.5	217
58	Cooperative tin oxide fullerene electron selective layers for high-performance planar perovskite solar cells. *Journal of Materials Chemistry A*, **2016**, 4, 14276-14283	13	178
57	Carrier separation and transport in perovskite solar cells studied by nanometre-scale profiling of electrical potential. *Nature Communications*, **2015**, 6, 8397	17.4	172

56	Impact of grain boundaries on efficiency and stability of organic-inorganic trihalide perovskites. *Nature Communications*, **2017**, 8, 2230	17.4	166
55	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
54	Do grain boundaries dominate non-radiative recombination in CHNHPbI perovskite thin films?. *Physical Chemistry Chemical Physics*, **2017**, 19, 5043-5050	3.6	141
53	Grain-Size-Limited Mobility in Methylammonium Lead Iodide Perovskite Thin Films. *ACS Energy Letters*, **2016**, 1, 561-565	20.1	141
52	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
51	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
50	Improved charge transport of Nb-doped TiO2 nanorods in methylammonium lead iodide bromide perovskite solar cells. *Journal of Materials Chemistry A*, **2014**, 2, 19616-19622	13	117
49	A facile solvothermal growth of single crystal mixed halide perovskite CH3NH3Pb(Br(1-x)Cl(x))3. *Chemical Communications*, **2015**, 51, 7820-3	5.8	114
48	Highly Efficient Perovskite Solar Modules by Scalable Fabrication and Interconnection Optimization. *ACS Energy Letters*, **2018**, 3, 322-328	20.1	111
47	Progress in light harvesting and charge injection of dye-sensitized solar cells. *Materials Science and Engineering B: Solid-State Materials for Advanced Technology*, **2011**, 176, 1142-1160	3.1	110
46	Efficient charge extraction and slow recombination in organicInorganic perovskites capped with semiconducting single-walled carbon nanotubes. *Energy and Environmental Science*, **2016**, 9, 1439-1449	35.4	109
45	Annealing-free efficient vacuum-deposited planar perovskite solar cells with evaporated fullerenes as electron-selective layers. *Nano Energy*, **2016**, 19, 88-97	17.1	109
44	Controlled Humidity Study on the Formation of Higher Efficiency Formamidinium Lead Triiodide-Based Solar Cells. *Chemistry of Materials*, **2015**, 27, 4814-4820	9.6	108
43	300% Enhancement of Carrier Mobility in Uniaxial-Oriented Perovskite Films Formed by Topotactic-Oriented Attachment. *Advanced Materials*, **2017**, 29, 1606831	24	101
42	Interface band structure engineering by ferroelectric polarization in perovskite solar cells. *Nano Energy*, **2015**, 13, 582-591	17.1	93
41	Acid Additives Enhancing the Conductivity of Spiro-OMeTAD Toward High-Efficiency and Hysteresis-Less Planar Perovskite Solar Cells. *Advanced Energy Materials*, **2017**, 7, 1601451	21.8	90
40	Crystal Morphologies of Organolead Trihalide in Mesoscopic/Planar Perovskite Solar Cells. *Journal of Physical Chemistry Letters*, **2015**, 6, 2292-7	6.4	85
39	Surface-Plasmon Assisted Energy Conversion in Dye-Sensitized Solar Cells. *Advanced Energy Materials*, **2011**, 1, 415-421	21.8	85

38	Polarization and Dielectric Study of Methylammonium Lead Iodide Thin Film to Reveal its Nonferroelectric Nature under Solar Cell Operating Conditions. *ACS Energy Letters*, **2016**, 1, 142-149	20.1	82
37	High-Performance Formamidinium-Based Perovskite Solar Cells via Microstructure-Mediated □-to-□ Phase Transformation. *Chemistry of Materials*, **2017**, 29, 3246-3250	9.6	79
36	Large polarization-dependent exciton optical Stark effect in lead iodide perovskites. *Nature Communications*, **2016**, 7, 12613	17.4	72
35	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
34	The Controlling Mechanism for Potential Loss in CH3NH3PbBr3 Hybrid Solar Cells. *ACS Energy Letters*, **2016**, 1, 424-430	20.1	70
33	Electron-Rotor Interaction in Organic-Inorganic Lead Iodide Perovskites Discovered by Isotope Effects. *Journal of Physical Chemistry Letters*, **2016**, 7, 2879-87	6.4	69
32	Charge Transfer Dynamics between Carbon Nanotubes and Hybrid Organic Metal Halide Perovskite Films. *Journal of Physical Chemistry Letters*, **2016**, 7, 418-25	6.4	69
31	Correlation between Photocatalytic Efficacy and Electronic Band Structure in Hydrothermally Grown TiO2 Nanoparticles. *Journal of Physical Chemistry C*, **2010**, 114, 15292-15297	3.8	66
30	Planar versus mesoscopic perovskite microstructures: The influence of CH3NH3PbI3 morphology on charge transport and recombination dynamics. *Nano Energy*, **2016**, 22, 439-452	17.1	64
29	In situ investigation of the formation and metastability of formamidinium lead tri-iodide perovskite solar cells. *Energy and Environmental Science*, **2016**, 9, 2372-2382	35.4	64
28	Carrier Transport in Dye-Sensitized Solar Cells Using Single Crystalline TiO2 Nanorods Grown by a Microwave-Assisted Hydrothermal Reaction. *Journal of Physical Chemistry C*, **2011**, 115, 14534-14541	3.8	61
27	Stable Formamidinium-Based Perovskite Solar Cells via In Situ Grain Encapsulation. *Advanced Energy Materials*, **2018**, 8, 1800232	21.8	59
26	Electron and hole drift mobility measurements on methylammonium lead iodide perovskite solar cells. *Applied Physics Letters*, **2016**, 108, 173505	3.4	51
25	Nickel Catalyst-Assisted Vertical Growth of Dense Carbon Nanotube Forests on Bulk Copper. *Journal of Physical Chemistry C*, **2011**, 115, 3534-3538	3.8	47
24	Methylammonium lead iodide grain boundaries exhibit depth-dependent electrical properties. *Energy and Environmental Science*, **2016**, 9, 3642-3649	35.4	42
23	Ultrafast Imaging of Carrier Transport across Grain Boundaries in Hybrid Perovskite Thin Films. *ACS Energy Letters*, **2018**, 3, 1402-1408	20.1	42
22	Divalent Anionic Doping in Perovskite Solar Cells for Enhanced Chemical Stability. *Advanced Materials*, **2018**, 30, e1800973	24	39
21	Intercalation crystallization of phase-pure □HC(NH□)□PbI□ upon microstructurally engineered PbI□ thin films for planar perovskite solar cells. *Nanoscale*, **2016**, 8, 6265-70	7.7	33

20	Surface electrochemical properties of niobium-doped titanium dioxide nanorods and their effect on carrier collection efficiency of dye sensitized solar cells. *Journal of Power Sources*, **2014**, 245, 301-307	8.9	32
19	Electrochemical impedance analysis of perovskite-electrolyte interfaces. *Chemical Communications*, **2017**, 53, 2467-2470	5.8	31
18	Toward Scalable Perovskite Solar Modules Using Blade Coating and Rapid Thermal Processing. *ACS Applied Energy Materials*, **2020**, 3, 3714-3720	6.1	26
17	Effect of non-stoichiometric solution chemistry on improving the performance of wide-bandgap perovskite solar cells. *Materials Today Energy*, **2018**, 7, 232-238	7	26
16	Observation of largely enhanced hardness in nanomultilayers of the Ag□Nb system with positive enthalpy of formation. *Applied Physics Letters*, **2007**, 90, 181917	3.4	26
15	High-performance methylammonium-free ideal-band-gap perovskite solar cells. *Matter*, **2021**, 4, 1365-1376	17.7	23
14	Electronic and Morphological Inhomogeneities in Pristine and Deteriorated Perovskite Photovoltaic Films. *Nano Letters*, **2017**, 17, 1796-1801	11.5	22
13	Mesoporous scaffolds based on TiO2 nanorods and nanoparticles for efficient hybrid perovskite solar cells. *Journal of Materials Chemistry A*, **2015**, 3, 24315-24321	13	22
12	Effect of Water Vapor, Temperature, and Rapid Annealing on Formamidinium Lead Triiodide Perovskite Crystallization. *ACS Energy Letters*, **2016**, 1, 155-161	20.1	21
11	Facile control of surface wettability in TiO2/poly(methyl methacrylate) composite films. *Journal of Colloid and Interface Science*, **2012**, 368, 603-7	9.3	20
10	Surface lattice engineering through three-dimensional lead iodide perovskitoid for high-performance perovskite solar cells. *CheM*, **2021**, 7, 774-785	16.2	18
9	Multiple step growth of single crystalline rutile nanorods with the assistance of self-assembled monolayer for dye sensitized solar cells. *ACS Applied Materials & Interfaces*, **2013**, 5, 9809-15	9.5	17
8	Observation of anatase nanograins crystallizing from anodic amorphous TiO2 nanotubes. *CrystEngComm*, **2015**, 17, 7346-7353	3.3	12
7	Determination of the True Lateral Grain Size in Organic-Inorganic Halide Perovskite Thin Films. *ACS Applied Materials & Interfaces*, **2017**, 9, 33565-33570	9.5	12
6	Multiple-Stage Structure Transformation of Organic-Inorganic Hybrid Perovskite CH3NH3PbI3. *Physical Review X*, **2016**, 6,	9.1	11
5	Tunable surface plasmons of dielectric core-metal shell particles for dye sensitized solar cells. *RSC Advances*, **2013**, 3, 9690	3.7	10
4	Fabrication of flexible perovskite solar cells via rapid thermal annealing. *Materials Letters*, **2020**, 276, 128215	3.3	7
3	In situ investigation of halide incorporation into perovskite solar cells. *MRS Communications*, **2017**, 7, 575-582	2.7	6

2	SMART Perovskite Growth: Enabling a Larger Range of Process Conditions. *ACS Energy Letters*, **2021**, 6, 650-658	20.1	4
1	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