

Kai Yao

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59
ext. papers

2,671
ext. citations

10.6
avg, IF

5.21
L-index

#	Paper	IF	Citations
57	Toward Perovskite Solar Cell Commercialization: A Perspective and Research Roadmap Based on Interfacial Engineering. <i>Advanced Materials</i> , 2018 , 30, e1800455	24	244
56	Non-halogenated solvents for environmentally friendly processing of high-performance bulk-heterojunction polymer solar cells. <i>Energy and Environmental Science</i> , 2013 , 6, 3241	35.4	160
55	Multilayered Perovskite Materials Based on Polymeric-Ammonium Cations for Stable Large-Area Solar Cell. <i>Chemistry of Materials</i> , 2016 , 28, 3131-3138	9.6	154
54	Molecular Weight Effect on the Absorption, Charge Carrier Mobility, and Photovoltaic Performance of an Indacenodiselenophene-Based Ladder-Type Polymer. <i>Chemistry of Materials</i> , 2013 , 25, 3188-3195	9.6	137
53	Room-Temperature and Solution-Processable Cu-Doped Nickel Oxide Nanoparticles for Efficient Hole-Transport Layers of Flexible Large-Area Perovskite Solar Cells. <i>ACS Applied Materials & Interfaces</i> , 2017 , 9, 41887-41897	9.5	130
52	Highly Efficient Inverted Organic Solar Cells Through Material and Interfacial Engineering of Indacenodithieno[3,2-b]thiophene-Based Polymers and Devices. <i>Advanced Functional Materials</i> , 2014 , 24, 1465-1473	15.6	120
51	A copper-doped nickel oxide bilayer for enhancing efficiency and stability of hysteresis-free inverted mesoporous perovskite solar cells. <i>Nano Energy</i> , 2017 , 40, 155-162	17.1	112
50	A General Route to Enhance Polymer Solar Cell Performance using Plasmonic Nanoprisms. <i>Advanced Energy Materials</i> , 2014 , 4, 1400206	21.8	106
49	Eleven-Membered Fused-Ring Low Band-Gap Polymer with Enhanced Charge Carrier Mobility and Photovoltaic Performance. <i>Advanced Functional Materials</i> , 2014 , 24, 3631-3638	15.6	94
48	Mixed perovskite based on methyl-ammonium and polymeric-ammonium for stable and reproducible solar cells. <i>Chemical Communications</i> , 2015 , 51, 15430-3	5.8	74
47	A general fabrication procedure for efficient and stable planar perovskite solar cells: Morphological and interfacial control by in-situ-generated layered perovskite. <i>Nano Energy</i> , 2015 , 18, 165-175	17.1	73
46	Improving the efficiency and environmental stability of inverted planar perovskite solar cells via silver-doped nickel oxide hole-transporting layer. <i>Applied Surface Science</i> , 2018 , 427, 782-790	6.7	62
45	Plasmonic Metal Nanoparticles with Core-Shell Structure for High-Performance Organic and Perovskite Solar Cells. <i>ACS Nano</i> , 2019 , 13, 5397-5409	16.7	61
44	Enhanced Performance of Organic Solar Cells with Increased End Group Dipole Moment in Indacenodithieno[3,2-b]thiophene-Based Molecules. <i>Advanced Functional Materials</i> , 2015 , 25, 4889-4897	15.6	54
43	Self-Organized Hole Transport Layers Based on Polythiophene Diblock Copolymers for Inverted Organic Solar Cells with High Efficiency. <i>Chemistry of Materials</i> , 2013 , 25, 897-904	9.6	51
42	Influence of water-soluble polythiophene as an interfacial layer on the P3HT/PCBM bulk heterojunction organic photovoltaics. <i>Journal of Materials Chemistry</i> , 2011 , 21, 13780		50
41	Fullerene-Anchored Core-Shell ZnO Nanoparticles for Efficient and Stable Dual-Sensitized Perovskite Solar Cells. <i>Joule</i> , 2019 , 3, 417-431	27.8	44

40	Enhanced Light-Harvesting by Integrating Synergetic Microcavity and Plasmonic Effects for High-Performance ITO-Free Flexible Polymer Solar Cells. <i>Advanced Functional Materials</i> , 2015 , 25, 567-574	15.6	43
39	Open-Circuit Voltage Losses in Selenium-Substituted Organic Photovoltaic Devices from Increased Density of Charge-Transfer States. <i>Chemistry of Materials</i> , 2015 , 27, 6583-6591	9.6	37
38	Mesogens Mediated Self-Assembly in Applications of Bulk Heterojunction Solar Cells Based on a Conjugated Polymer with Narrow Band Gap. <i>Macromolecules</i> , 2011 , 44, 2698-2706	5.5	34
37	Efficient all polymer solar cells from layer-evolved processing of a bilayer inverted structure. <i>Journal of Materials Chemistry C</i> , 2014 , 2, 416-420	7.1	33
36	Cooperative Assembly Donor-Acceptor System Induced by Intermolecular Hydrogen Bonds Leading to Oriented Nanomorphology for Optimized Photovoltaic Performance. <i>Journal of Physical Chemistry C</i> , 2012 , 116, 714-721	3.8	32
35	Ordered microstructure induced by orientation behavior of liquid-crystal polythiophene for performance improvement of hybrid solar cells. <i>Solar Energy Materials and Solar Cells</i> , 2012 , 96, 266-275	6.4	31
34	Coordination Engineering of Single-Crystal Precursor for Phase Control in Ruddlesden-Popper Perovskite Solar Cells. <i>Advanced Energy Materials</i> , 2020 , 10, 1904050	21.8	30
33	Interfacial engineering of front-contact with finely tuned polymer interlayers for high-performance large-area flexible perovskite solar cells. <i>Nano Energy</i> , 2019 , 62, 734-744	17.1	29
32	Unravelling the Mechanism of Ionic Fullerene Passivation for Efficient and Stable Methylammonium-Free Perovskite Solar Cells. <i>ACS Energy Letters</i> , 2020 , 5, 2015-2022	20.1	29
31	A Simple and Universal Method to Increase Light Absorption in Ternary Blend Polymer Solar Cells Based on Ladder-Type Polymers. <i>Advanced Optical Materials</i> , 2015 , 3, 321-327	8.1	27
30	Self-assembly of diblock polythiophenes with discotic liquid crystals on side chains for the formation of a highly ordered nanowire morphology. <i>ACS Applied Materials & Interfaces</i> , 2013 , 5, 8321-8	9.5	24
29	Synthesis and Helical Conformation of Novel Optically Active Liquid Crystalline Poly(p-phenylene)s Containing Cyanoterphenyl Mesogen as Pendant. <i>Macromolecules</i> , 2009 , 42, 5053-5061	5.5	23
28	Interfacial Nanostructuring of ZnO Nanoparticles by Fullerene Surface Functionalization for Annealing-Free Hybrid Bulk Heterojunction Solar Cells. <i>Journal of Physical Chemistry C</i> , 2012 , 116, 3486-3491	3.8	22
27	Photocrosslinkable liquid-crystalline polymers for stable photovoltaics by adjusting side-chains spacing and fullerene size to control intercalation. <i>Organic Electronics</i> , 2012 , 13, 1443-1455	3.5	18
26	Integration of light-harvesting complexes into the polymer bulk heterojunction P3HT/PCBM device for efficient photovoltaic cells. <i>Journal of Materials Chemistry</i> , 2012 , 22, 7342		17
25	Orientation Behavior of Bulk Heterojunction Solar Cells Based on Liquid-Crystalline Polyfluorene and Fullerene. <i>Journal of Physical Chemistry C</i> , 2010 , 114, 18001-18011	3.8	17
24	Performance limits of plasmon-enhanced organic photovoltaics. <i>Applied Physics Letters</i> , 2014 , 105, 033304	3.4	16
23	Can morphology tailoring based on functionalized fullerene nanostructures improve the performance of organic solar cells?. <i>Journal of Materials Chemistry</i> , 2012 , 22, 18768		16

22	Self-assembled mesogens modified fullerene for efficiently stable bulk heterojunction solar cells. <i>Solar Energy Materials and Solar Cells</i> , 2012 , 97, 34-42	6.4	13
21	Photocrosslinkable liquid-crystalline polythiophenes with oriented nanostructure and stabilization for photovoltaics. <i>Organic Electronics</i> , 2012 , 13, 104-113	3.5	13
20	Origin of the efficiency improvement in pre-annealed P3HT/PCBM solar cells with LiF/Al electrodes. <i>Chemical Physics Letters</i> , 2012 , 553, 36-40	2.5	13
19	A novel type of optically active helical liquid crystalline polymers: Synthesis and characterization of poly(p-phenylene)s containing terphenyl mesogen with different terminal groups. <i>Journal of Polymer Science Part A</i> , 2009 , 47, 4723-4735	2.5	13
18	Nano-bio hybrids of plasmonic metals/photosynthetic proteins for broad-band light absorption enhancement in organic solar cells. <i>Journal of Materials Chemistry A</i> , 2016 , 4, 13400-13406	13	13
17	The critical role of additives in binary halogen-free solvent systems for the general processing of highly efficient organic solar cells. <i>RSC Advances</i> , 2015 , 5, 93689-93696	3.7	12
16	Enhanced Photoluminescence, Mesomorphism and Conformation of Liquid-Crystalline Conjugated Polymers with Terphenyl Mesogen Pendants. <i>Macromolecular Chemistry and Physics</i> , 2011 , 212, 24-41	2.6	12
15	Tuning the photovoltaic parameters of thiophene-linked donor-acceptor liquid crystalline copolymers for organic photovoltaics. <i>Polymer Chemistry</i> , 2012 , 3, 710	4.9	9
14	Improvement of morphology and performance of P3HT/ZnO hybrid solar cells induced by liquid crystal molecules. <i>Chemical Physics Letters</i> , 2016 , 661, 119-124	2.5	8
13	Self-assembly of all-conjugated block copolymer nanoparticles with tailoring size and fluorescence for live cell imaging. <i>Journal of Materials Chemistry B</i> , 2016 , 4, 7882-7887	7.3	8
12	Photoluminescent, liquid-crystalline, and electrochemical properties of para-phenylene-based alternating conjugated copolymers. <i>Journal of Polymer Science Part A</i> , 2010 , 48, 434-442	2.5	8
11	Effects of substitution and terminal groups for liquid-crystallinity enhanced luminescence of disubstituted polyacetylenes carrying chromophoric terphenyl pendants. <i>Science China Chemistry</i> , 2010 , 53, 1302-1315	7.9	7
10	Tailoring Phase Purity in the 2D/3D Perovskite Heterostructures Using Lattice Mismatch. <i>ACS Energy Letters</i> , 550-559	20.1	6
9	Synergistic Effects of Selenophene and Extended Ladder-Type Donor Units for Efficient Polymer Solar Cells. <i>Macromolecular Rapid Communications</i> , 2018 , 39, 1700483	4.8	6
8	The Influence of Oxygen Atoms on Conformation and π -Stacking of Ladder-Type Donor-Based Polymers and Their Photovoltaic Properties. <i>Macromolecular Rapid Communications</i> , 2017 , 38, 1700156	4.8	5
7	Plasmon-induced trap filling at grain boundaries in perovskite solar cells. <i>Light: Science and Applications</i> , 2021 , 10, 219	16.7	5
6	Liquid crystallinity and enhanced photoluminescence of terphenyl-containing poly(1-alkynes) with tuning spacers and tails. <i>Synthetic Metals</i> , 2010 , 160, 892-905	3.6	3
5	Tailoring carrier dynamics in inverted mesoporous perovskite solar cells with interface-engineered plasmonics. <i>Journal of Materials Chemistry A</i> , 2021 , 9, 2394-2403	13	3

4	Searching for High-Quality Halide Perovskite Single Crystals toward X-ray Detection.. <i>Journal of Physical Chemistry Letters</i> , 2022 , 2851-2861	6.4	3
3	Improved microstructure and performance of PbS thin films via in-situ thermal decomposition of lead xanthate precursors using self-assembling monolayer. <i>Superlattices and Microstructures</i> , 2016 , 97, 378-385	2.8	2
2	Plasmon-Enhanced Photocatalytic Activity of Organic Heterostructure for Indoor-Light Antibacterial Therapy. <i>Advanced Therapeutics</i> , 2022 , 5, 2100202	4.9	1
1	2D Perovskites: Coordination Engineering of Single-Crystal Precursor for Phase Control in Ruddlesden-Popper Perovskite Solar Cells (Adv. Energy Mater. 16/2020). <i>Advanced Energy Materials</i> , 2020 , 10, 2070072	21.8	0