Bin Kan

List of Publications by Year
in descending order

76 papers	8,519 citations	81839 39 h-index	71651 76 g-index
77 all docs	77 docs citations	77 times ranked	6002 citing authors

#	Article	IF	Citations
1	A Series of Simple Oligomer-like Small Molecules Based on Oligothiophenes for Solution-Processed Solar Cells with High Efficiency. Journal of the American Chemical Society, 2015, 137, 3886-3893.	6.6	788
2	Small-molecule solar cells with efficiency over 9%. Nature Photonics, 2015, 9, 35-41.	15.6	769
3	Solution-Processed and High-Performance Organic Solar Cells Using Small Molecules with a Benzodithiophene Unit. Journal of the American Chemical Society, 2013, 135, 8484-8487.	6.6	675
4	Solution-Processed Organic Solar Cells Based on Dialkylthiol-Substituted Benzodithiophene Unit with Efficiency near 10%. Journal of the American Chemical Society, 2014, 136, 15529-15532.	6.6	670
5	Solution-processed organic tandem solar cells with power conversion efficiencies >12%. Nature Photonics, 2017, 11, 85-90.	15.6	510
6	Small-Molecule Acceptor Based on the Heptacyclic Benzodi(cyclopentadithiophene) Unit for Highly Efficient Nonfullerene Organic Solar Cells. Journal of the American Chemical Society, 2017, 139, 4929-4934.	6.6	459
7	Two-Dimensional Ruddlesdenâ€“Popper Perovskite with Nanorod-like Morphology for Solar Cells with Efficiency Exceeding 15%. Journal of the American Chemical Society, 2018, 140, 11639-11646.	6.6	397
8	A New Nonfullerene Electron Acceptor with a Ladder Type Backbone for Highâ€Performance Organic Solar Cells. Advanced Materials, 2017, 29, 1604964.	11.1	289
9	Over 12% Efficiency Nonfullerene Allâ€Smallâ€Molecule Organic Solar Cells with Sequentially Evolved Multilength Scale Morphologies. Advanced Materials, 2019, 31, e1807842.	11.1	272
10	Fineâ€Tuning the Energy Levels of a Nonfullerene Smallâ€Molecule Acceptor to Achieve a High Shortâ€Circuit Current and a Power Conversion Efficiency over 12% in Organic Solar Cells. Advanced Materials, 2018, 30, 1704904.	11.1	214
11	A chlorinated low-bandgap small-molecule acceptor for organic solar cells with 14.1% efficiency and low energy loss. Science China Chemistry, 2018, 61, 1307-1313.	4.2	210
12	Nonfullerene Tandem Organic Solar Cells with High Performance of 14.11%. Advanced Materials, 2018, 30, e1707508.	11.1	184
13	Subtle Balance Between Length Scale of Phase Separation and Domain Purification in Smallâ€Molecule Bulkâ€Heterojunction Blends under Solvent Vapor Treatment. Advanced Materials, 2015, 27, 6296-6302.	11.1	159
14	A Halogenation Strategy for over 12% Efficiency Nonfullerene Organic Solar Cells. Advanced Energy Materials, 2018, 8, 1702870.	10.2	159
15	Lowâ€Bandgap Porphyrins for Highly Efficient Organic Solar Cells: Materials, Morphology, and Applications. Advanced Materials, 2020, 32, e1906129.	11.1	143
16	An A-D-A Type Small-Molecule Electron Acceptor with End-Extended Conjugation for High Performance Organic Solar Cells. Chemistry of Materials, 2017, 29, 7908-7917.	3.2	139
17	Benzo[1,2-b:4,5-bâ€²]dithiophene (BDT)-based small molecules for solution processed organic solar cells. Journal of Materials Chemistry A, 2015, 3, 4765-4776.	5.2	117
18	Evaluation of Electron Donor Materials for Solutionâ€Processed Organic Solar Cells via a Novel Figure of Merit. Advanced Energy Materials, 2017, 7, 1700465.	10.2	114

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19	Recent progress on <scp>allâ€small</scp> molecule organic solar cells using <scp>smallâ€molecule</scp> nonfullerene acceptors. InformaÄnÃ-MateriÃ¡ly, 2021, 3, 175-200.	8.5	113
20	A New Nonfullerene Acceptor with Near Infrared Absorption for High Performance Ternaryâ€Blend Organic Solar Cells with Efficiency over 13%. Advanced Science, 2018, 5, 1800307.	5.6	111
21	A simple small molecule as an acceptor for fullerene-free organic solar cells with efficiency near 8%. Journal of Materials Chemistry A, 2016, 4, 10409-10413.	5.2	104
22	Extended Conjugation Length of Nonfullerene Acceptors with Improved Planarity via Noncovalent Interactions for Highâ€Performance Organic Solar Cells. Advanced Energy Materials, 2018, 8, 1801618.	10.2	102
23	Efficient and thermally stable organic solar cells based on small molecule donor and polymer acceptor. Nature Communications, 2019, 10, 3271.	5.8	94
24	Dithienosilole-Based Small-Molecule Organic Solar Cells with an Efficiency over 8%: Investigation of the Relationship between the Molecular Structure and Photovoltaic Performance. Chemistry of Materials, 2015, 27, 6077-6084.	3.2	92
25	Ternary Organic Solar Cells With 12.8% Efficiency Using Two Nonfullerene Acceptors With Complementary Absorptions. Advanced Energy Materials, 2018, 8, 1800424.	10.2	90
26	Fullerene-free small molecule organic solar cells with a high open circuit voltage of 1.15 V. Chemical Communications, 2016, 52, 465-468.	2.2	79
27	Highâ€Performance Allâ€Smallâ€Molecule Solar Cells Based on a New Type of Small Molecule Acceptors with Chlorinated End Groups. Advanced Energy Materials, 2018, 8, 1802021.	10.2	76
28	Small Molecules Based on Alkyl/Alkylthio-thieno[3,2-<i>b</i>]thiophene-Substituted Benzo[1,2-<i>b</i>:4,5-bâ€²]dithiophene for Solution-Processed Solar Cells with High Performance. Chemistry of Materials, 2015, 27, 8414-8423.	3.2	71
29	Effect of thermal annealing on active layer morphology and performance for small molecule bulk heterojunction organic solar cells. Journal of Materials Chemistry C, 2014, 2, 7247-7255.	2.7	70
30	Small Molecule Acceptors with a Nonfused Architecture for High-Performance Organic Photovoltaics. Chemistry of Materials, 2019, 31, 904-911.	3.2	66
31	Investigation of Quinquethiophene Derivatives with Different End Groups for High Open Circuit Voltage Solar Cells. Advanced Energy Materials, 2013, 3, 639-646.	10.2	65
32	High efficiency and stability small molecule solar cells developed by bulk microstructure fine-tuning. Nano Energy, 2016, 28, 241-249.	8.2	57
33	Triperylene Hexaimides Based Allâ€Smallâ€Molecule Solar Cells with an Efficiency over 6% and Open Circuit Voltage of 1.04 V. Advanced Energy Materials, 2017, 7, 1601664.	10.2	57
34	A high-performance photovoltaic small molecule developed by modifying the chemical structure and optimizing the morphology of the active layer. RSC Advances, 2014, 4, 31977-31980.	1.7	54
35	Efficient non-fullerene organic solar cells employing sequentially deposited donorâ€“acceptor layers. Journal of Materials Chemistry A, 2018, 6, 18225-18233.	5.2	49
36	A solution-processed high performance organic solar cell using a small molecule with the thieno[3,2-b]thiophene central unit. Chemical Communications, 2015, 51, 15268-15271.	2.2	48

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37	A Tandem Organic Solar Cell with PCE of 14.52% Employing Subcells with the Same Polymer Donor and Two Absorption Complementary Acceptors. Advanced Materials, 2019, 31, e1804723.	11.1	48
38	Evaluation of Small Molecules as Front Cell Donor Materials for Highâ€Efficiency Tandem Solar Cells. Advanced Materials, 2016, 28, 7008-7012.	11.1	43
39	Asâ€Cast Ternary Organic Solar Cells Based on an Asymmetric Sideâ€Chains Featured Acceptor with Reduced Voltage Loss and 14.0% Efficiency. Advanced Functional Materials, 2020, 30, 1909535.	7.8	43
40	Impact of the Electronâ€Transport Layer on the Performance of Solutionâ€Processed Smallâ€Molecule Organic Solar Cells. ChemSusChem, 2014, 7, 2358-2364.	3.6	40
41	Sequentially Deposited versus Conventional Nonfullerene Organic Solar Cells: Interfacial Trap States, Vertical Stratification, and Exciton Dissociation. Advanced Energy Materials, 2019, 9, 1902145.	10.2	36
42	Asymmetrical side-chain engineering of small-molecule acceptors enable high-performance nonfullerene organic solar cells. Nano Energy, 2020, 67, 104209.	8.2	35
43	New Insights into the Correlation between Morphology, Excited State Dynamics, and Device Performance of Small Molecule Organic Solar Cells. Advanced Energy Materials, 2016, 6, 1600961.	10.2	34
44	Open-circuit voltage up to 1.07V for solution processed small molecule based organic solar cells. Organic Electronics, 2014, 15, 2285-2294.	1.4	32
45	The design of quinoxaline based unfused non-fullerene acceptors for high performance and stable organic solar cells. Chemical Engineering Journal, 2022, 427, 131473.	6.6	32
46	Assessing the stability of high performance solution processed small molecule solar cells. Solar Energy Materials and Solar Cells, 2017, 161, 368-376.	3.0	31
47	Design and synthesis of low band gap non-fullerene acceptors for organic solar cells with impressively high Jsc over 21 mA cm_2. Science China Materials, 2017, 60, 819-828.	3.5	29
48	All-Small-Molecule Organic Solar Cells Based on Pentathiophene Donor and Alkylated Indacenodithiophene-Based Acceptors with Efficiency over 8%. ACS Applied Energy Materials, 2018, 1, 2150-2156.	2.5	29
49	Investigation of the enhanced performance and lifetime of organic solar cells using solution-processed carbon dots as the electron transport layers. Journal of Materials Chemistry C, 2015, 3, 12403-12409.	2.7	28
50	Investigation of the effect of large aromatic fusion in the small molecule backbone on the solar cell device fill factor. Journal of Materials Chemistry A, 2015, 3, 16679-16687.	5.2	26
51	Medium-Bandgap Small-Molecule Donors Compatible with Both Fullerene and Nonfullerene Acceptors. ACS Applied Materials & Interfaces, 2018, 10, 9587-9594.	4.0	25
52	Manipulating active layer morphology of molecular donor/polymer acceptor based organic solar cells through ternary blends. Science China Chemistry, 2018, 61, 1025-1033.	4.2	25
53	Artificial neuromorphic cognitive skins based on distributed biaxially stretchable elastomeric synaptic transistors. Proceedings of the National Academy of Sciences of the United States of America, 2022, 119, .	3.3	25
54	A new oligobenzodithiophene end-capped with 3-ethyl-rhodanine groups for organic solar cells with high open-circuit voltage. Science China Chemistry, 2015, 58, 339-346.	4.2	23

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55	Developing high-performance small molecule organic solar cells via a large planar structure and an electron-withdrawing central unit. Chemical Communications, 2017, 53, 451-454.	2.2	22
56	Large active layer thickness toleration of high-efficiency small molecule solar cells. Journal of Materials Chemistry A, 2015, 3, 22274-22279.	5.2	19
57	Flexible organic solar cells for biomedical devices. Nano Research, 2021, 14, 2891-2903.	5.8	19
58	Diketopyrrolopyrrole based small molecules with near infrared absorption for solution processed organic solar cells. Dyes and Pigments, 2016, 126, 173-178.	2.0	18
59	Molecular Origin of Donor- and Acceptor-Rich Domain Formation in Bulk-Heterojunction Solar Cells with an Enhanced Charge Transport Efficiency. Journal of Physical Chemistry C, 2017, 121, 5864-5870.	1.5	18
60	Substituents on the end group subtle tuning the energy levels and absorptions of small-molecule nonfullerene acceptors. Dyes and Pigments, 2018, 155, 241-248.	2.0	18
61	Cathode interlayer-free organic solar cells with enhanced device performance upon alcohol treatment. Journal of Materials Chemistry C, 2019, 7, 7947-7952.	2.7	17
62	A low bandgap carbazole based small molecule for organic solar cells. Organic Electronics, 2015, 24, 89-95.	1.4	16
63	A series of dithienobenzodithiophene based small molecules for highly efficient organic solar cells. Science China Chemistry, 2017, 60, 552-560.	4.2	16
64	Dithienopyrrole Based Small Molecule with Low Band Gap for Organic Solar Cells. Chinese Journal of Chemistry, 2015, 33, 852-858.	2.6	15
65	Correlating Molecular Structures with Transport Dynamics in High-Efficiency Small-Molecule Organic Photovoltaics. ACS Applied Materials & Interfaces, 2015, 7, 13137-13141.	4.0	15
66	Enhancement of Performance and Mechanism Studies of All-Solution Processed Small-Molecule based Solar Cells with an Inverted Structure. ACS Applied Materials & Interfaces, 2015, 7, 21245-21253.	4.0	12
67	Alkylthio substituted thiophene modified benzodithiophene-based highly efficient photovoltaic small molecules. Organic Electronics, 2016, 28, 263-268.	1.4	12
68	Two Thieno[3,2â€•b]thiopheneâ€Based Small Molecules as Bifunctional Photoactive Materials for Organic Solar Cells. Solar Rrl, 2018, 2, 1700179.	3.1	12
69	3-Dimensional non-fullerene acceptors based on triptycene and perylene diimide for organic solar cells. Organic Electronics, 2017, 50, 458-465.	1.4	11
70	Oligothiophene-based small molecules with 3,3â€²-difluoro-2,2â€²-bithiophene central unit for solution-processed organic solar cells. Organic Electronics, 2016, 38, 172-179.	1.4	8
71	Enhancing efficiency for additiveâ€“free bladeâ€“coated smallâ€“molecule solar cells by thermal annealing. Organic Electronics, 2016, 37, 305-311.	1.4	7
72	Oligothiophene based small molecules with a new end group for solution processed organic photovoltaics. Organic Electronics, 2016, 33, 71-77.	1.4	5

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73	Unveiling the Molecular Symmetry Dependence of Exciton Dissociation Processes in Small-Molecular Heterojunctions. Journal of Physical Chemistry C, 2018, 122, 26851-26856.	1.5	5
74	Device characterization and optimization of small molecule organic solar cells assisted by modelling simulation of the currentâ€“voltage characteristics. Physical Chemistry Chemical Physics, 2015, 17, 19261-19267.	1.3	2
75	Organic Solar Cells: Sequentially Deposited versus Conventional Nonfullerene Organic Solar Cells: Interfacial Trap States, Vertical Stratification, and Exciton Dissociation (Adv. Energy Mater. 47/2019). Advanced Energy Materials, 2019, 9, 1970185.	10.2	1
76	Processability: Evaluation of Electron Donor Materials for Solutionâ€Processed Organic Solar Cells via a Novel Figure of Merit (Adv. Energy Mater. 18/2017). Advanced Energy Materials, 2017, 7, .	10.2	0