Huifeng Yao

List of Publications by Year
in descending order

124 papers	22,130 citations	20759 60 h-index	18606 119 g-index
125 all docs	125 docs citations	125 times ranked	8663 citing authors

#	Article	IF	Citations
1	Molecular Optimization Enables over 13% Efficiency in Organic Solar Cells. Journal of the American Chemical Society, 2017, 139, 7148-7151.	6.6	2,524
2	Over 16% efficiency organic photovoltaic cells enabled by a chlorinated acceptor with increased open-circuit voltages. Nature Communications, 2019, 10, 2515.	5.8	1,431
3	Singleâ€Junction Organic Photovoltaic Cells with Approaching 18% Efficiency. Advanced Materials, 2020, 32, e1908205.	11.1	1,407
4	Singleâ€Junction Organic Photovoltaic Cell with 19% Efficiency. Advanced Materials, 2021, 33, e2102420.	11.1	1,072
5	Molecular Design of Benzodithiophene-Based Organic Photovoltaic Materials. Chemical Reviews, 2016, 116, 7397-7457.	23.0	998
6	Design, Synthesis, and Photovoltaic Characterization of a Small Molecular Acceptor with an Ultraâ€Narrow Band Gap. Angewandte Chemie - International Edition, 2017, 56, 3045-3049.	7.2	711
7	Design rules for minimizing voltage losses in high-efficiency organic solar cells. Nature Materials, 2018, 17, 703-709.	13.3	701
8	Over 14% Efficiency in Organic Solar Cells Enabled by Chlorinated Nonfullerene Smallâ€Molecule Acceptors. Advanced Materials, 2018, 30, e1800613.	11.1	623
9	Highly Efficient 2D-Conjugated Benzodithiophene-Based Photovoltaic Polymer with Linear Alkylthio Side Chain. Chemistry of Materials, 2014, 26, 3603-3605.	3.2	531
10	Ecoâ€Compatible Solventâ€Processed Organic Photovoltaic Cells with Over 16% Efficiency. Advanced Materials, 2019, 31, e1903441.	11.1	445
11	Organic photovoltaic cell with 17% efficiency and superior processability. National Science Review, 2020, 7, 1239-1246.	4.6	443
12	Fine-Tuned Photoactive and Interconnection Layers for Achieving over 13% Efficiency in a Fullerene-Free Tandem Organic Solar Cell. Journal of the American Chemical Society, 2017, 139, 7302-7309.	6.6	427
13	Design and Synthesis of a Low Bandgap Small Molecule Acceptor for Efficient Polymer Solar Cells. Advanced Materials, 2016, 28, 8283-8287.	11.1	421
14	Wide-gap non-fullerene acceptor enabling high-performance organic photovoltaic cells for indoor applications. Nature Energy, 2019, 4, 768-775.	19.8	407
15	Achieving Over 15% Efficiency in Organic Photovoltaic Cells via Copolymer Design. Advanced Materials, 2019, 31, e1808356.	11.1	388
16	14.7% Efficiency Organic Photovoltaic Cells Enabled by Active Materials with a Large Electrostatic Potential Difference. Journal of the American Chemical Society, 2019, 141, 7743-7750.	6.6	379
17	Improved Charge Transport and Reduced Nonradiative Energy Loss Enable Over 16% Efficiency in Ternary Polymer Solar Cells. Advanced Materials, 2019, 31, e1902302.	11.1	364
18	Achieving Highly Efficient Nonfullerene Organic Solar Cells with Improved Intermolecular Interaction and Openâ€Circuit Voltage. Advanced Materials, 2017, 29, 1700254.	11.1	363

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19	A Highâ€Efficiency Organic Solar Cell Enabled by the Strong Intramolecular Electron Pushâ€“Pull Effect of the Nonfullerene Acceptor. Advanced Materials, 2018, 30, e1707170.	11.1	351
20	Efficient Semitransparent Organic Solar Cells with Tunable Color enabled by an Ultralowâ€Bandgap Nonfullerene Acceptor. Advanced Materials, 2017, 29, 1703080.	11.1	325
21	PBDB-T and its derivatives: A family of polymer donors enables over 17% efficiency in organic photovoltaics. Materials Today, 2020, 35, 115-130.	8.3	269
22	Manipulating Aggregation and Molecular Orientation in Allâ€Polymer Photovoltaic Cells. Advanced Materials, 2015, 27, 6046-6054.	11.1	264
23	New Wide Band Gap Donor for Efficient Fullerene-Free All-Small-Molecule Organic Solar Cells. Journal of the American Chemical Society, 2017, 139, 1958-1966.	6.6	260
24	Side Chain Selection for Designing Highly Efficient Photovoltaic Polymers with 2D-Conjugated Structure. Macromolecules, 2014, 47, 4653-4659.	2.2	259
25	Controlling Blend Morphology for Ultrahigh Current Density in Nonfullerene Acceptor-Based Organic Solar Cells. ACS Energy Letters, 2018, 3, 669-676.	8.8	242
26	A unified description of non-radiative voltage losses in organic solar cells. Nature Energy, 2021, 6, 799-806.	19.8	235
27	Realizing Ultrahigh Mechanical Flexibility and >15% Efficiency of Flexible Organic Solar Cells via a â€œWeldingâ€•Flexible Transparent Electrode. Advanced Materials, 2020, 32, e1908478.	11.1	216
28	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
29	Design and application of volatilizable solid additives in non-fullerene organic solar cells. Nature Communications, 2018, 9, 4645.	5.8	205
30	Recent Progress in Chlorinated Organic Photovoltaic Materials. Accounts of Chemical Research, 2020, 53, 822-832.	7.6	198
31	A Printable Organic Cathode Interlayer Enables over 13% Efficiency for 1-cm2 Organic Solar Cells. Joule, 2019, 3, 227-239.	11.7	193
32	Fluorination vs. chlorination: a case study on high performance organic photovoltaic materials. Science China Chemistry, 2018, 61, 1328-1337.	4.2	177
33	Heat-Insulating Multifunctional Semitransparent Polymer Solar Cells. Joule, 2018, 2, 1816-1826.	11.7	173
34	Recent Progress in Ternary Organic Solar Cells Based on Nonfullerene Acceptors. Advanced Energy Materials, 2018, 8, 1702814.	10.2	170
35	Critical Role of Molecular Electrostatic Potential on Charge Generation in Organic Solar Cells. Chinese Journal of Chemistry, 2018, 36, 491-494.	2.6	163
36	Greenâ€Solventâ€Processed Allâ€Polymer Solar Cells Containing a Perylene Diimideâ€Based Acceptor with an Efficiency over 6.5%. Advanced Energy Materials, 2016, 6, 1501991.	10.2	157

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37	Two Wellâ€Miscible Acceptors Work as One for Efficient Fullereneâ€Free Organic Solar Cells. Advanced Materials, 2017, 29, 1700437.	11.1	157
38	Exceptionally low charge trapping enables highly efficient organic bulk heterojunction solar cells. Energy and Environmental Science, 2020, 13, 2422-2430.	15.6	152
39	Tuning the Hybridization of Local Exciton and Chargeâ€Transfer States in Highly Efficient Organic Photovoltaic Cells. Angewandte Chemie - International Edition, 2020, 59, 9004-9010.	7.2	144
40	1 cm² Organic Photovoltaic Cells for Indoor Application with over 20% Efficiency. Advanced Materials, 2019, 31, e1904512.	11.1	140
41	15.3% efficiency all-small-molecule organic solar cells enabled by symmetric phenyl substitution. Science China Materials, 2020, 63, 1142-1150.	3.5	140
42	18.5% Efficiency Organic Solar Cells with a Hybrid Planar/Bulk Heterojunction. Advanced Materials, 2021, 33, e2103091.	11.1	136
43	A New Conjugated Polymer that Enables the Integration of Photovoltaic and Lightâ€Emitting Functions in One Device. Advanced Materials, 2021, 33, e2101090.	11.1	129
44	Toward Efficient Polymer Solar Cells Processed by a Solutionâ€Processed Layerâ€Byâ€Layer Approach. Advanced Materials, 2018, 30, e1802499.	11.1	116
45	17% efficiency all-small-molecule organic solar cells enabled by nanoscale phase separation with a hierarchical branched structure. Energy and Environmental Science, 2021, 14, 5903-5910.	15.6	116
46	Perylene Diimide Trimers Based Bulk Heterojunction Organic Solar Cells with Efficiency over 7%. Advanced Energy Materials, 2016, 6, 1600060.	10.2	111
47	Enhanced Efficiency in Fullerene-Free Polymer Solar Cell by Incorporating Fine-designed Donor and Acceptor Materials. ACS Applied Materials & Interfaces, 2015, 7, 9274-9280.	4.0	110
48	Achieving 12.8% Efficiency by Simultaneously Improving Openâ€Circuit Voltage and Shortâ€Circuit Current Density in Tandem Organic Solar Cells. Advanced Materials, 2017, 29, 1606340.	11.1	100
49	Enhanced Ï€â€“Ï€ Interactions of Nonfullerene Acceptors by Volatilizable Solid Additives in Efficient Polymer Solar Cells. Advanced Materials, 2019, 31, e1900477.	11.1	99
50	High Performance Organic Solar Cells Processed by Blade Coating in Air from a Benign Food Additive Solution. Chemistry of Materials, 2016, 28, 7451-7458.	3.2	91
51	Highâ€Efficiency Polymer Solar Cells Enabled by Environmentâ€Friendly Singleâ€Solvent Processing. Advanced Energy Materials, 2016, 6, 1502177.	10.2	91
52	Fullerene-free polymer solar cell based on a polythiophene derivative with an unprecedented energy loss of less than 0.5 eV. Journal of Materials Chemistry A, 2016, 4, 18043-18049.	5.2	88
53	Manipulation of Domain Purity and Orientational Ordering in High Performance All-Polymer Solar Cells. Chemistry of Materials, 2016, 28, 6178-6185.	3.2	87
54	Effects of energy-level offset between a donor and acceptor on the photovoltaic performance of non-fullerene organic solar cells. Journal of Materials Chemistry A, 2019, 7, 18889-18897.	5.2	87

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55	A Wide Bandgap Polymer with Strong Ï€â€“Ï€ Interaction for Efficient Fullereneâ€Free Polymer Solar Cells. Advanced Energy Materials, 2016, 6, 1600742.	10.2	76
56	PBDT-TSR: a highly efficient conjugated polymer for polymer solar cells with a regioregular structure. Journal of Materials Chemistry A, 2016, 4, 1708-1713.	5.2	75
57	High-Efficiency Nonfullerene Organic Solar Cells Enabled by 1000 nm Thick Active Layers with a Low Trap-State Density. ACS Applied Materials & Interfaces, 2020, 12, 18777-18784.	4.0	74
58	Reduced Nonradiative Energy Loss Caused by Aggregation of Nonfullerene Acceptor in Organic Solar Cells. Advanced Energy Materials, 2019, 9, 1901823.	10.2	72
59	2D-Conjugated Benzodithiophene-Based Polymer Acceptor: Design, Synthesis, Nanomorphology, and Photovoltaic Performance. Macromolecules, 2015, 48, 7156-7163.	2.2	70
60	A Novel pH Neutral Self-Doped Polymer for Anode Interfacial Layer in Efficient Polymer Solar Cells. Macromolecules, 2016, 49, 8126-8133.	2.2	69
61	Design, Synthesis, and Photovoltaic Characterization of a Small Molecular Acceptor with an Ultraâ€Narrow Band Gap. Angewandte Chemie, 2017, 129, 3091-3095.	1.6	61
62	Enhanced efficiency of polymer photovoltaic cells via the incorporation of a water-soluble naphthalene diimide derivative as a cathode interlayer. Journal of Materials Chemistry C, 2015, 3, 9565-9571.	2.7	60
63	Impact of Electrostatic Interaction on Bulk Morphology in Efficient Donorâ€“Acceptor Photovoltaic Blends. Angewandte Chemie - International Edition, 2021, 60, 15988-15994.	7.2	60
64	Control of Mesoscale Morphology and Photovoltaic Performance in Diketopyrrolopyrroleâ€Based Small Band Gap Terpolymers. Advanced Energy Materials, 2017, 7, 1601138.	10.2	59
65	Quadrupole Moment Induced Morphology Control Via a Highly Volatile Small Molecule in Efficient Organic Solar Cells. Advanced Functional Materials, 2021, 31, 2010535.	7.8	55
66	From Binary to Ternary: Improving the External Quantum Efficiency of Smallâ€Molecule Acceptorâ€Based Polymer Solar Cells with a Minute Amount of Fullerene Sensitization. Advanced Energy Materials, 2017, 7, 1700328.	10.2	54
67	Molecular Design and Application of a Photovoltaic Polymer with Improved Optical Properties and Molecular Energy Levels. Macromolecules, 2015, 48, 3493-3499.	2.2	52
68	Subtle side-chain tuning on terminal groups of small molecule electron acceptors for efficient fullerene-free polymer solar cells. Journal of Materials Chemistry A, 2017, 5, 15175-15182.	5.2	52
69	Polyamino acid interlayer facilitates electron extraction in narrow band gap fullerene-free organic solar cells with an outstanding short-circuit current. Nano Energy, 2018, 50, 169-175.	8.2	50
70	Strong polymer molecular weight-dependent material interactions: impact on the formation of the polymer/fullerene bulk heterojunction morphology. Journal of Materials Chemistry A, 2017, 5, 13176-13188.	5.2	49
71	Tunable Electron Donating and Accepting Properties Achieved by Modulating the Steric Hindrance of Side Chains in A-D-A Small-Molecule Photovoltaic Materials. Chemistry of Materials, 2018, 30, 619-628.	3.2	49
72	Multi-component non-fullerene acceptors with tunable bandgap structures for efficient organic solar cells. Journal of Materials Chemistry A, 2018, 6, 23644-23649.	5.2	47

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73	Recent Advances in Fullereneâ€free Polymer Solar Cells: Materials and Devices. Chinese Journal of Chemistry, 2019, 37, 207-215.	2.6	46
74	Potential of Nonfullerene Small Molecules with High Photovoltaic Performance. Chemistry - an Asian Journal, 2017, 12, 2160-2171.	1.7	45
75	Exceeding 14% Efficiency for Solution-Processed Tandem Organic Solar Cells Combining Fullerene- and Nonfullerene-Based Subcells with Complementary Absorption. ACS Energy Letters, 2018, 3, 2566-2572.	8.8	45
76	Recent advances in high-efficiency organic solar cells fabricated by eco-compatible solvents at relatively large-area scale. APL Materials, 2020, 8, .	2.2	45
77	The Critical Role of Anode Work Function in Non-Fullerene Organic Solar Cells Unveiled by Counterion-Size-Controlled Self-Doping Conjugated Polymers. Chemistry of Materials, 2018, 30, 1078-1084.	3.2	44
78	Hybrid Perovskite Quantum Dot/Nonâ€Fullerene Molecule Solar Cells with Efficiency Over 15%. Advanced Functional Materials, 2021, 31, 2101272.	7.8	44
79	Dialkylthio Substitution: An Effective Method to Modulate the Molecular Energy Levels of 2D-BDT Photovoltaic Polymers. ACS Applied Materials & Interfaces, 2016, 8, 3575-3583.	4.0	43
80	A Selfâ€Organized Poly(vinylpyrrolidone)â€Based Cathode Interlayer in Inverted Fullereneâ€Free Organic Solar Cells. Advanced Materials, 2019, 31, e1804657.	11.1	43
81	Efficient charge generation at low energy losses in organic solar cells: a key issues review. Reports on Progress in Physics, 2020, 83, 082601.	8.1	43
82	Recent progress in reducing voltage loss in organic photovoltaic cells. Materials Chemistry Frontiers, 2021, 5, 709-722.	3.2	41
83	Toward Visibly Transparent Organic Photovoltaic Cells Based on a Near-Infrared Harvesting Bulk Heterojunction Blend. ACS Applied Materials & Interfaces, 2020, 12, 32764-32770.	4.0	40
84	Carbonyl Bridge-Based pâˆ'Ï€ Conjugated Polymers as High-Performance Electrodes of Organic Lithium-Ion Batteries. ACS Applied Materials & Interfaces, 2020, 12, 18457-18464.	4.0	39
85	Optimization of side chains in alkylthiothiophene-substituted benzo[1,2-b:4,5-bâ€²]dithiophene-based photovoltaic polymers. Polymer Chemistry, 2015, 6, 2752-2760.	1.9	37
86	Efficient and photostable ternary organic solar cells with a narrow band gap non-fullerene acceptor and fullerene additive. Journal of Materials Chemistry A, 2020, 8, 6682-6691.	5.2	37
87	Simultaneous Improvement of Efficiency and Stability of Organic Photovoltaic Cells by using a Crossâ€Linkable Fullerene Derivative. Small, 2021, 17, e2101133.	5.2	34
88	Investigation of Conjugated Polymers Based on Naphtho[2,3-<i>c</i>]thiophene-4,9-dione in Fullerene-Based and Fullerene-Free Polymer Solar Cells. Macromolecules, 2017, 50, 1453-1462.	2.2	32
89	Organic photovoltaic cells with high efficiencies for both indoor and outdoor applications. Materials Chemistry Frontiers, 2021, 5, 893-900.	3.2	32
90	Energy level modulation of ITIC derivatives: Effects on the photodegradation of conventional and inverted organic solar cells. Organic Electronics, 2019, 69, 255-262.	1.4	31

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91	An Easily Accessible Cathode Buffer Layer for Achieving Multiple High Performance Polymer Photovoltaic Cells. Journal of Physical Chemistry C, 2015, 119, 27322-27329.	1.5	30
92	Enhanced intermolecular interactions to improve twisted polymer photovoltaic performance. Science China Chemistry, 2019, 62, 370-377.	4.2	29
93	The crucial role of intermolecular Ï€â€“Ï€ interactions in Aâ€“Dâ€“A-type electron acceptors and their effective modulation. Journal of Materials Chemistry A, 2018, 6, 2664-2670.	5.2	26
94	Organic photovoltaic cells for low light applications offering new scope and orientation. Organic Electronics, 2020, 85, 105798.	1.4	26
95	Miscibility Control by Tuning Electrostatic Interactions in Bulk Heterojunction for Efficient Organic Solar Cells. , 2021, 3, 1276-1283.		26
96	Enhancing the Photovoltaic Performance of Nonfullerene Acceptors via Conjugated Rotatable End Groups. Advanced Energy Materials, 2018, 8, 1802131.	10.2	24
97	Investigating the Trade-Off between Device Performance and Energy Loss in Nonfullerene Organic Solar Cells. ACS Applied Materials & Interfaces, 2019, 11, 29124-29131.	4.0	24
98	Tuning the Hybridization of Local Exciton and Chargeâ€Transfer States in Highly Efficient Organic Photovoltaic Cells. Angewandte Chemie, 2020, 132, 9089-9095.	1.6	24
99	Low band-gap conjugated polymer based on diketopyrrolopyrrole units and its application in organic photovoltaic cells. Journal of Materials Chemistry A, 2017, 5, 10416-10423.	5.2	23
100	Influence of the alkyl substitution position on photovoltaic properties of 2D-BDT-based conjugated polymers. Science China Materials, 2015, 58, 213-222.	3.5	21
101	An inorganic molecule-induced electron transfer complex for highly efficient organic solar cells. Journal of Materials Chemistry A, 2020, 8, 5580-5586.	5.2	21
102	Organic cathode interfacial materials for non-fullerene organic solar cells. Journal of Materials Chemistry A, 2021, 9, 13506-13514.	5.2	21
103	Efficient Organic Solar Cells with a High Openâ€Circuit Voltage of 1.34 V. Chinese Journal of Chemistry, 2019, 37, 1153-1157.	2.6	20
104	Non-fullerene acceptor pre-aggregates enable high efficiency pseudo-bulk heterojunction organic solar cells. Science China Chemistry, 2022, 65, 373-381.	4.2	20
105	Chlorinated Carbonâ€Bridged and Siliconâ€Bridged Carbazoleâ€Based Nonfullerene Acceptors Manifest Synergistic Enhancement in Ternary Organic Solar Cell with Efficiency over 15%. Solar Rrl, 2020, 4, 2000357.	3.1	19
106	Efficient Exciton Dissociation Enabled by the End Group Modification in Non-Fullerene Acceptors. Journal of Physical Chemistry C, 2020, 124, 7691-7698.	1.5	18
107	TCNQ as a volatilizable morphology modulator enables enhanced performance in non-fullerene organic solar cells. Journal of Materials Chemistry C, 2020, 8, 44-49.	2.7	16
108	Squaraine organic crystals with strong dipole effect toward stable lithium-organic batteries. Energy Storage Materials, 2021, 41, 240-247.	9.5	16

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109	Elucidating End-Group Modifications of Carbazole-Based Nonfullerene Acceptors in Indoor Applications for Achieving a PCE of over 20%. ACS Applied Materials & Interfaces, 2021, 13, 26247-26255.	4.0	14
110	Design of ultra-high luminescent polymers for organic photovoltaic cells with low energy loss. Chemical Communications, 2021, 57, 9132-9135.	2.2	12
111	Effectively Improving Extinction Coefficient of Benzodithiophene and Benzodithiophenedioneâ€based Photovoltaic Polymer by Grafting Alkylthio Functional Groups. Chemistry - an Asian Journal, 2016, 11, 2650-2655.	1.7	11
112	Impact of Electrostatic Interaction on Bulk Morphology in Efficient Donorâ€"Acceptor Photovoltaic Blends. Angewandte Chemie, 2021, 133, 16124-16130.	1.6	11
113	Modulation of Building Block Size in Conjugated Polymers with Dâ€"A Structure for Polymer Solar Cells. Macromolecules, 2019, 52, 7929-7938.	2.2	10
114	Enhanced photovoltaic effect from naphtho[2,3-<i>c</i>]thiophene-4,9-dione-based polymers through alkyl side chain induced backbone distortion. Journal of Materials Chemistry A, 2020, 8, 14706-14712.	5.2	10
115	Heatingâ€induced aggregation control for efficient sequentialâ€cast organic solar cells. Aggregate, 2022, 3, e104.	5.2	10
116	Design of ultranarrow-bandgap acceptors for efficient organic photovoltaic cells and highly sensitive organic photodetectors. Journal of Energy Chemistry, 2022, 72, 388-394.	7.1	10
117	Reduced Nonradiative Recombination Energy Loss Enabled Efficient Polymer Solar Cells via Tuning Alkyl Chain Positions on Pendent Benzene Units of Polymers. ACS Applied Materials & Interfaces, 2020, 12, 24184-24191.	4.0	7
118	Nonâ€Fullerene Molecules: Hybrid Perovskite Quantum Dot/Nonâ€Fullerene Molecule Solar Cells with Efficiency Over 15% (Adv. Funct. Mater. 27/2021). Advanced Functional Materials, 2021, 31, 2170196.	7.8	3
119	A Thiazole-Based Polymer Donor for Efficient Organic Solar Cells. Transactions of Tianjin University, 2022, 28, 398-405.	3.3	3
120	Realizing Green Solvent Processable Non-fullerene Organic Solar Cells by Modulating the Side Groups of Conjugated Polymers. Wuli Huaxue Xuebao/ Acta Physico - Chimica Sinica, 2019, 35, 1391-1398.	2.2	2
121	Squaraine Organic Crystals with Strong Dipole Effect Toward Stable Lithium-Organic Batteries. SSRN Electronic Journal, 0, , .	0.4	0
122	Modulation of Intramolecular Charge Transfer Effect in Highly Efficient Non-fullerene Acceptor. , 0, , .		0
123	Optimization of Active Layers in Highly Efficient Organic Solar Cells. , 0, , .		0
124	Optimization of Active Layers in Highly Efficient Organic Solar Cells. , 0, , .		0