Xiaopeng Xu

List of Publications by Year
in descending order

91 papers	5,729 citations	81743 39 h-index	76769 74 g-index
93 all docs	93 docs citations	93 times ranked	3439 citing authors

#	Article	IF	Citations
1	Singleâ€Junction Polymer Solar Cells with 16.35% Efficiency Enabled by a Platinum(II) Complexation Strategy. Advanced Materials, 2019, 31, e1901872.	11.1	498
2	Realizing 19.05% Efficiency Polymer Solar Cells by Progressively Improving Charge Extraction and Suppressing Charge Recombination. Advanced Materials, 2022, 34, e2109516.	11.1	394
3	Realizing Over 13% Efficiency in Greenâ€Solventâ€Processed Nonfullerene Organic Solar Cells Enabled by 1,3,4â€Thiadiazoleâ€Based Wideâ€Bandgap Copolymers. Advanced Materials, 2018, 30, 1703973.	11.1	387
4	Development of Large Band-Gap Conjugated Copolymers for Efficient Regular Single and Tandem Organic Solar Cells. Journal of the American Chemical Society, 2013, 135, 13549-13557.	6.6	289
5	Highly efficient halogen-free solvent processed small-molecule organic solar cells enabled by material design and device engineering. Energy and Environmental Science, 2017, 10, 1739-1745.	15.6	285
6	Pronounced Effects of a Triazine Core on Photovoltaic Performanceâ€"Efficient Organic Solar Cells Enabled by a PDI Trimerâ€Based Small Molecular Acceptor. Advanced Materials, 2017, 29, 1605115.	11.1	235
7	Highly Efficient Ternaryâ€Blend Polymer Solar Cells Enabled by a Nonfullerene Acceptor and Two Polymer Donors with a Broad Composition Tolerance. Advanced Materials, 2017, 29, 1704271.	11.1	221
8	Efficient Nonfullerene Polymer Solar Cells Enabled by a Novel Wide Bandgap Small Molecular Acceptor. Advanced Materials, 2017, 29, 1606054.	11.1	181
9	Fine-tuning of side-chain orientations on nonfullerene acceptors enables organic solar cells with 17.7% efficiency. Energy and Environmental Science, 2021, 14, 3469-3479.	15.6	158
10	18.77â€‰% Efficiency Organic Solar Cells Promoted by Aqueous Solution Processed Cobalt(II) Acetate Hole Transporting Layer. Angewandte Chemie - International Edition, 2021, 60, 22554-22561.	7.2	152
11	Highly efficient non-fullerene organic solar cells enabled by a delayed processing method using a non-halogenated solvent. Energy and Environmental Science, 2020, 13, 4381-4388.	15.6	150
12	P3HTâ€Based Polymer Solar Cells with 8.25% Efficiency Enabled by a Matched Molecular Acceptor and Smart Greenâ€Solvent Processing Technology. Advanced Materials, 2019, 31, e1906045.	11.1	118
13	Polymer Solar Cells with 18.74% Efficiency: From Bulk Heterojunction to Interdigitated Bulk Heterojunction. Advanced Functional Materials, 2022, 32, 2108797.	7.8	116
14	Ternary Blend Organic Solar Cells: Understanding the Morphology from Recent Progress. Advanced Materials, 2022, 34, e2107476.	11.1	100
15	Subtle Polymer Donor and Molecular Acceptor Design Enable Efficient Polymer Solar Cells with a Very Small Energy Loss. Advanced Functional Materials, 2020, 30, 1907570.	7.8	89
16	Wide Bandgap Copolymers Based on Quinoxalino[6,5â€f].quinoxaline for Highly Efficient Nonfullerene Polymer Solar Cells. Advanced Functional Materials, 2017, 27, 1701491.	7.8	85
17	Wide Bandgap Molecular Acceptors with a Truxene Core for Efficient Nonfullerene Polymer Solar Cells: Linkage Position on Molecular Configuration and Photovoltaic Properties. Advanced Functional Materials, 2018, 28, 1707493.	7.8	83
18	Achieving Efficient Ternary Organic Solar Cells Using Structurally Similar Nonâ€Fullerene Acceptors with Varying Flanking Side Chains. Advanced Energy Materials, 2021, 11, 2100079.	10.2	80

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19	Isoindigo fluorination to enhance photovoltaic performance of donorâ€“acceptor conjugated copolymers. Chemical Communications, 2014, 50, 439-441.	2.2	79
20	Highly Efficient Nonfullerene Polymer Solar Cells Enabled by a Copper(I) Coordination Strategy Employing a 1,3,4â€Oxadiazoleâ€Containing Wideâ€Bandgap Copolymer Donor. Advanced Materials, 2018, 30, e1800737.	11.1	77
21	The recent progress of wide bandgap donor polymers towards non-fullerene organic solar cells. Chinese Chemical Letters, 2019, 30, 809-825.	4.8	69
22	10.20% Efficiency polymer solar cells via employing bilaterally hole-cascade diazaphenanthrobisthiadiazole polymer donors and electron-cascade indene-C70 bisadduct acceptor. Nano Energy, 2016, 25, 170-183.	8.2	68
23	Polymer Solar Cells Exceeding 10% Efficiency Enabled via a Facile Starâ€Shaped Molecular Cathode Interlayer with Variable Counterions. Advanced Functional Materials, 2016, 26, 4643-4652.	7.8	67
24	Recent development of perylene diimide-based small molecular non-fullerene acceptors in organic solar cells. Chinese Chemical Letters, 2017, 28, 2105-2115.	4.8	67
25	Fluorinated and Alkylthiolated Polymeric Donors Enable both Efficient Fullerene and Nonfullerene Polymer Solar Cells. Advanced Functional Materials, 2018, 28, 1706404.	7.8	63
26	Perylene Diimideâ€Based Nonfullerene Polymer Solar Cells with over 11% Efficiency Fabricated by Smart Molecular Design and Supramolecular Morphology Optimization. Advanced Functional Materials, 2019, 29, 1906587.	7.8	63
27	Low-Energy-Loss Polymer Solar Cells with 14.52% Efficiency Enabled by Wide-Band-Gap Copolymers. IScience, 2019, 12, 1-12.	1.9	62
28	Solutionâ€Processed Organic Solar Cells with 9.8% Efficiency Based on a New Small Molecule Containing a 2D Fluorinated Benzodithiophene Central Unit. Advanced Electronic Materials, 2016, 2, 1600061.	2.6	58
29	Recent progress towards fluorinated copolymers for efficient photovoltaic applications. Chinese Chemical Letters, 2016, 27, 1241-1249.	4.8	56
30	Recent advances in morphology optimizations towards highly efficient ternary organic solar cells. Nano Select, 2020, 1, 30-58.	1.9	56
31	Highly Efficient All-Polymer Solar Cells Enabled by <i>p</i>-Doping of the Polymer Donor. ACS Energy Letters, 2020, 5, 2434-2443.	8.8	53
32	A bromine and chlorine concurrently functionalized end group for benzo[1,2-<i>b</i>:4,5-<i>b</i>â€²]diselenophene-based non-fluorinated acceptors: a new hybrid strategy to balance the crystallinity and miscibility of blend films for enabling highly efficient polymer solar cells. Journal of Materials Chemistry A, 2020, 8, 4856-4867.	5.2	51
33	Panchromatic Ternary Organic Solar Cells with Porphyrin Dimers and Absorption-Complementary Benzodithiophene-based Small Molecules. ACS Applied Materials & Interfaces, 2019, 11, 6283-6291.	4.0	49
34	Achieving high-performance non-halogenated nonfullerene acceptor-based organic solar cells with 13.7% efficiency<i>via</i>a synergistic strategy of an indacenodithieno[3,2-<i>b</i>]selenophene core unit and non-halogenated thiophene-based terminal group. Journal of Materials Chemistry A, 2019, 7, 24389-24399.	5.2	47
35	Green solvent-processed efficient non-fullerene organic solar cells enabled by low-bandgap copolymer donors with EDOT side chains. Journal of Materials Chemistry A, 2019, 7, 716-726.	5.2	45
36	Stable large area organic solar cells realized by using random terpolymers donors combined with a ternary blend. Journal of Materials Chemistry A, 2019, 7, 14199-14208.	5.2	45

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37	Sideâ€Chain Engineering of Benzodithiopheneâ€Fluorinated Quinoxaline Lowâ€Bandâ€Gap Coâ€polymers for Highâ€Performance Polymer Solar Cells. Chemistry - A European Journal, 2014, 20, 13259-13271.	1.7	44
38	Recent Advances in Wide Bandgap Polymer Donors and Their Applications in Organic Solar Cells. Chinese Journal of Chemistry, 2021, 39, 243-254.	2.6	43
39	Aminoâ€Functionalized Graphene Quantum Dots as Cathode Interlayer for Efficient Organic Solar Cells: Quantum Dot Size on Interfacial Modification Ability and Photovoltaic Performance. Advanced Materials Interfaces, 2019, 6, 1801480.	1.9	42
40	Synergistic effect of halogenation on molecular energy level and photovoltaic performance modulations of highly efficient small molecular materials. Nano Energy, 2017, 40, 214-223.	8.2	39
41	Benzo[1,2-<i>b</i>:4,5-<i>b</i>â€²]diselenophene-fused nonfullerene acceptors with alternative aromatic ring-based and monochlorinated end groups: a new synergistic strategy to simultaneously achieve highly efficient organic solar cells with the energy loss of 0.49 eV. Journal of Materials Chemistry A, 2019, 7, 11802-11813.	5.2	38
42	Naphthobistriazole-based wide bandgap donor polymers for efficient non-fullerene organic solar cells: Significant fine-tuning absorption and energy level by backbone fluorination. Nano Energy, 2018, 53, 258-269.	8.2	37
43	Highâ€Performance Wide Bandgap Copolymers Using an EDOT Modified Benzodithiophene Donor Block with 10.11% Efficiency. Advanced Energy Materials, 2018, 8, 1602773.	10.2	35
44	Achieving a High Fill Factor and Stability in Perylene Diimideâ€"Based Polymer Solar Cells Using the Molecular Lock Effect between 4,4â€²â€Bipyridine and a Tri(8â€hydroxyquinoline)aluminum(III) Core. Advanced Functional Materials, 2019, 29, 1902079.	7.8	33
45	Synthesis and photovoltaic properties of two-dimensional benzodithiophene-thiophene copolymers with pendent rational naphtho[1,2-c:5,6-c]bis[1,2,5]thiadiazole side chains. Journal of Materials Chemistry A, 2015, 3, 23149-23161.	5.2	31
46	Self-doping small molecular conjugated electrolytes enabled by n-type side chains for highly efficient non-fullerene polymer solar cells. Journal of Materials Chemistry A, 2018, 6, 22503-22507.	5.2	31
47	Phenylene-bridged perylenediimide-porphyrin acceptors for non-fullerene organic solar cells. Sustainable Energy and Fuels, 2018, 2, 2616-2624.	2.5	30
48	Highly Efficient Non-Fused-Ring Electron Acceptors Enabled by the Conformational Lock and Structural Isomerization Effects. ACS Applied Materials & Interfaces, 2021, 13, 25214-25223.	4.0	30
49	Low band gap benzothiopheneâ€"thienothiophene copolymers with conjugated alkylthiothieyl and alkoxycarbonyl cyanovinyl side chains for photovoltaic applications. Chemical Communications, 2015, 51, 6290-6292.	2.2	29
50	18.77â€‰% Efficiency Organic Solar Cells Promoted by Aqueous Solution Processed Cobalt(II) Acetate Hole Transporting Layer. Angewandte Chemie, 2021, 133, 22728-22735.	1.6	28
51	Asymmetric Siloxane Functional Side Chains Enable High-Performance Donor Copolymers for Photovoltaic Applications. ACS Applied Materials & Interfaces, 2020, 12, 17760-17768.	4.0	27
52	Chalcogenâ€Atomâ€Annulated Perylene Diimide Trimers for Highly Efficient Nonfullerene Polymer Solar Cells. Macromolecular Rapid Communications, 2017, 38, 1700405.	2.0	23
53	Dithienothiapyran: An Excellent Donor Block for Building High-Performance Copolymers in Nonfullerene Polymer Solar Cells. ACS Applied Materials & Interfaces, 2019, 11, 3308-3316.	4.0	23
54	Rationalizing device performance of perylenediimide derivatives as acceptors for bulk-heterojunction organic solar cells. Organic Electronics, 2019, 65, 156-161.	1.4	23

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55	Recent Advances Toward Highly Efficient Tandem Organic Solar Cells. Small Structures, 2020, 1, 2000016.	6.9	23
56	Efficient Nonfullerene Polymer Solar Cells Enabled by Smallâ€Molecular Acceptors with a Decreased Fusedâ€Ring Core. Small Methods, 2018, 2, 1700373.	4.6	22
57	Tris(8â€hydroxyquinoline)aluminum(III)â€Cored Molecular Cathode Interlayer: Improving Electron Mobility and Photovoltaic Efficiency of Polymer Solar Cells. Solar Rrl, 2018, 2, 1800182.	3.1	22
58	The enhanced performance of fluorinated quinoxaline-containing polymers by replacing carbon with silicon bridging atoms on the dithiophene donor skeleton. Polymer Chemistry, 2015, 6, 2337-2347.	1.9	21
59	Highly Efficient Nonâ€Fullerene Polymer Solar Cells Enabled by Wide Bandgap Copolymers With Conjugated Selenyl Side Chains. Solar Rrl, 2018, 2, 1800186.	3.1	21
60	Enhancing the photovoltaic properties of low bandgap terpolymers based on benzodithiophene and phenanthrophenazine by introducing different second acceptor units. Polymer Chemistry, 2016, 7, 1747-1755.	1.9	20
61	Tuning the central donor core via intramolecular noncovalent interactions based on D(A-Ar)2 type small molecules for high performance organic solar cells. Solar Energy, 2018, 161, 138-147.	2.9	20
62	Hole/Electron Transporting Materials for Nonfullerene Organic Solar Cells. Chemistry - A European Journal, 2022, 28, .	1.7	20
63	Realizing high-efficiency Multiple blend polymer solar cells <i>via</i> a unique parallel-series working mechanism. Journal of Materials Chemistry A, 2019, 7, 24937-24946.	5.2	18
64	Side-Chain Influence of Wide-Bandgap Copolymers Based on Naphtho[1,2-<i>b</i>:5,6-<i>b</i>]bispyrazine and Benzo[1,2-<i>b</i>:4,5-<i>b</i>â€²]dithiophene for Efficient Photovoltaic Applications. ACS Applied Materials & Interfaces, 2017, 9, 18142-18150.	4.0	17
65	Fluorinated pyrazine-based Dâ€“A conjugated polymers for efficient non-fullerene polymer solar cells. Journal of Materials Chemistry A, 2020, 8, 7083-7089.	5.2	17
66	Efficient strategies to improve photovoltaic performance of A-D-A type small molecules by introducing rigidly fluorinated central cores. Dyes and Pigments, 2017, 147, 505-513.	2.0	16
67	Highly efficient polymer solar cells <i>via</i> multiple cascade energy level engineering. Journal of Materials Chemistry C, 2018, 6, 9119-9129.	2.7	16
68	Wide Bandgap Perylene Diimide Derivatives as an Effective Third Component for Parallel Connected Ternary Blend Polymer Solar Cells. Chemistry of Materials, 2021, 33, 7396-7407.	3.2	15
69	A comprehensively theoretical and experimental study of carrier generation and transport for achieving high performance ternary blend organic solar cells. Nano Energy, 2018, 51, 206-215.	8.2	14
70	Structure evolution from D-A-D type small molecule toward D-A-D-A-D type oligomer for high-efficiency photovoltaic donor materials. Dyes and Pigments, 2021, 186, 108950.	2.0	13
71	Two-dimensional photovoltaic copolymers with spatial D-A-D structures: synthesis, characterization and hetero-atom effect. Science China Chemistry, 2015, 58, 276-285.	4.2	12
72	Noncovalent interaction enables planar and efficient propeller-like perylene diimide acceptors for polymer solar cells. Chemical Engineering Journal, 2021, 426, 131910.	6.6	12

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73	Unique W-Shape Y6 isomer as effective solid additive for High-Performance PM6:Y6 polymer solar cells. Chemical Engineering Journal, 2022, 440, 135975.	6.6	12
74	Modeling Copper Plastic Deformation and Liner Viscoelastic Flow Effects on Performance and Reliability in Through Silicon Via (TSV) Fabrication Processes. IEEE Transactions on Device and Materials Reliability, 2019, 19, 642-653.	1.5	11
75	Diketopyrrolopyrrole linked porphyrin dimers for visible-near-infrared photoresponsive nonfullerene organic solar cells. Materials Advances, 2020, 1, 2520-2525.	2.6	11
76	Molecular packing modulation enabling optimized blend morphology and efficient all small molecule organic solar cells. Dyes and Pigments, 2021, 191, 109387.	2.0	10
77	Fine regulation of crystallisation tendency to optimize the BHJ nanostructure and performance of polymer solar cells. Nanoscale, 2020, 12, 12928-12941.	2.8	9
78	Developing Wide Bandgap Polymers Based on Sole Benzodithiophene Units for Efficient Polymer Solar Cells. Chemistry - A European Journal, 2020, 26, 11241-11249.	1.7	9
79	Fused ring non-fullerene acceptors with benzothiophene dioxide end groups and their side chain effect investigations. Dyes and Pigments, 2020, 180, 108452.	2.0	9
80	Highly Semitransparent Indoor Nonfullerene Organic Solar Cells Based on Benzodithiopheneâ€Bridged Porphyrin Dimers. Energy Technology, 2022, 10, .	1.8	9
81	Novel D(A-Ar) 2 type small molecules with oligothiophene, diketopyrrolopyrrole and benzo[4,5]thieno [2,3- b]indole units: investigation on relationship between structure and property for organic solar cells. Tetrahedron, 2016, 72, 7430-7437.	1.0	6
82	Tuning terminal units to improve the photovoltaic performance of small molecules based on a large planar fused-ring core in solution-processed organic solar cells. Organic Electronics, 2020, 78, 105566.	1.4	6
83	Propeller-Like All-Fused Perylene Diimide Based Electron Acceptors With Chalcogen Linkage for Efficient Polymer Solar Cells. Frontiers in Chemistry, 2020, 8, 350.	1.8	6
84	Efficient wide-band-gap copolymer donors for organic solar cells with perpendicularly placed benzodithiophene units. Journal of Power Sources, 2021, 499, 229961.	4.0	6
85	Core effect on indacenodithieno[3,2-b]thiophene dimer based small molecule acceptors for non-fullerene polymer solar cells. Synthetic Metals, 2021, 278, 116812.	2.1	6
86	Improving photovoltaic performance of the linear benzothienoindole-terminated molecules by tuning molecular framework and substituted position of terminals. Dyes and Pigments, 2017, 142, 406-415.	2.0	5
87	Aâ€"Dâ€"Aâ€"Dâ€"A-Type Oligomer versus Aâ€"Dâ€"A-Type Small Molecule: Synthesis and Advanced Effect of the Dâ€"A Repeat Unit on Morphology and Photovoltaic Properties. ACS Applied Energy Materials, 2022, 5, 3146-3155.	2.5	5
88	Regioisomerâ€Free Chlorinated Thiopheneâ€Based Ending Group for Thieno[3,2â€•b]thiophene Central Unitâ€Based Acceptor Enabling Highly Efficient Nonfullerene Polymer Solar Cells with High V oc Simultaneously. Solar Rrl, 2020, 4, 1900446.	3.1	4
89	Ploymer Solar Cells: Polymer Solar Cells Exceeding 10% Efficiency Enabled via a Facile Star-Shaped Molecular Cathode Interlayer with Variable Counterions (Adv. Funct. Mater. 26/2016). Advanced Functional Materials, 2016, 26, 4803-4803.	7.8	1
90	Benzotriazacycle Cored Perylene Diimide Non-fullerene Acceptors for High-performance Organic Solar Cells. Current Applied Materials, 2021, 01, .	0.4	1

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91	Design and preparation of D-A conjugated copolymers for polymer solar cells. , 2016, , .		0