Shanshan Chen

List of Publications by Year
in descending order

81 papers	8,691 citations	87843 38 h-index	60583 81 g-index
81 all docs	81 docs citations	81 times ranked	4794 citing authors

#	Article	IF	Citations
1	11.4% Efficiency non-fullerene polymer solar cells with trialkylsilyl substituted 2D-conjugated polymer as donor. Nature Communications, 2016, 7, 13651.	5.8	917
2	Side-Chain Isomerization on an n-type Organic Semiconductor ITIC Acceptor Makes 11.77% High Efficiency Polymer Solar Cells. Journal of the American Chemical Society, 2016, 138, 15011-15018.	6.6	826
3	Non-Fullerene Polymer Solar Cells Based on Alkylthio and Fluorine Substituted 2D-Conjugated Polymers Reach 9.5% Efficiency. Journal of the American Chemical Society, 2016, 138, 4657-4664.	6.6	743
4	Constructing a Strongly Absorbing Lowâ€Bandgap Polymer Acceptor for Highâ€Performance Allâ€Polymer Solar Cells. Angewandte Chemie - International Edition, 2017, 56, 13503-13507.	7.2	468
5	Cathode engineering with perylene-diimide interlayer enabling over 17% efficiency single-junction organic solar cells. Nature Communications, 2020, 11, 2726.	5.8	467
6	High Efficiency Polymer Solar Cells with Efficient Hole Transfer at Zero Highest Occupied Molecular Orbital Offset between Methylated Polymer Donor and Brominated Acceptor. Journal of the American Chemical Society, 2020, 142, 1465-1474.	6.6	344
7	Tuning the electron-deficient core of a non-fullerene acceptor to achieve over 17% efficiency in a single-junction organic solar cell. Energy and Environmental Science, 2020, 13, 2459-2466.	15.6	324
8	Ternary solar cells with a mixed face-on and edge-on orientation enable an unprecedented efficiency of 12.1%. Energy and Environmental Science, 2017, 10, 258-265.	15.6	318
9	Subtle Molecular Tailoring Induces Significant Morphology Optimization Enabling over 16% Efficiency Organic Solar Cells with Efficient Charge Generation. Advanced Materials, 2020, 32, e1906324.	11.1	312
10	9.73% Efficiency Nonfullerene All Organic Small Molecule Solar Cells with Absorption-Complementary Donor and Acceptor. Journal of the American Chemical Society, 2017, 139, 5085-5094.	6.6	303
11	All-Small-Molecule Organic Solar Cells with an Ordered Liquid Crystalline Donor. Joule, 2019, 3, 3034-3047.	11.7	257
12	A guest-assisted molecular-organization approach for >17% efficiency organic solar cells using environmentally friendly solvents. Nature Energy, 2021, 6, 1045-1053.	19.8	230
13	Simultaneous Interfacial Modification and Crystallization Control by Biguanide Hydrochloride for Stable Perovskite Solar Cells with PCE of 24.4%. Advanced Materials, 2022, 34, e2106118.	11.1	211
14	Highly Flexible and Efficient Allâ€Polymer Solar Cells with Highâ€Viscosity Processing Polymer Additive toward Potential of Stretchable Devices. Angewandte Chemie - International Edition, 2018, 57, 13277-13282.	7.2	166
15	Achieving Fast Charge Separation and Low Nonradiative Recombination Loss by Rational Fluorination for Highâ€Efficiency Polymer Solar Cells. Advanced Materials, 2019, 31, e1905480.	11.1	162
16	Balancing hydrogen adsorption/desorption by orbital modulation for efficient hydrogen evolution catalysis. Nature Communications, 2019, 10, 4060.	5.8	131
17	Recent Progress in Flexible and Stretchable Organic Solar Cells. Advanced Functional Materials, 2020, 30, 2002529.	7.8	123
18	Sideâ€Chain Impact on Molecular Orientation of Organic Semiconductor Acceptors: High Performance Nonfullerene Polymer Solar Cells with Thick Active Layer over 400 nm. Advanced Energy Materials, 2018, 8, 1800856.	10.2	118

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19	Highly Flexible and Efficient Allâ€Polymer Solar Cells with Highâ€Viscosity Processing Polymer Additive toward Potential of Stretchable Devices. Angewandte Chemie, 2018, 130, 13461-13466.	1.6	108
20	Organic Photovoltaics with Multiple Donorâ€"Acceptor Pairs. Advanced Materials, 2019, 31, e1804762.	11.1	106
21	A Nonâ€Conjugated Polymer Acceptor for Efficient and Thermally Stable Allâ€Polymer Solar Cells. Angewandte Chemie - International Edition, 2020, 59, 19835-19840.	7.2	105
22	Modulating the Molecular Packing and Nanophase Blending via a Random Terpolymerization Strategy toward 11% Efficiency Nonfullerene Polymer Solar Cells. Advanced Energy Materials, 2017, 7, 1701125.	10.2	98
23	A Facile Synthesized Polymer Featuring Bâ€N Covalent Bond and Small Singletâ€Triplet Gap for Highâ€Performance Organic Solar Cells. Angewandte Chemie - International Edition, 2021, 60, 8813-8817.	7.2	97
24	Multifunctional Polymer Framework Modified SnO₂ Enabling a Photostable Î±-FAPbI₃ Perovskite Solar Cell with Efficiency Exceeding 23%. ACS Energy Letters, 2021, 6, 3824-3830.	8.8	93
25	A Synergetic Effect of Molecular Weight and Fluorine in Allâ€Polymer Solar Cells with Enhanced Performance. Advanced Functional Materials, 2017, 27, 1603564.	7.8	92
26	Ultrafast Channel II process induced by a 3-D texture with enhanced acceptor order ranges for high-performance non-fullerene polymer solar cells. Energy and Environmental Science, 2018, 11, 2569-2580.	15.6	72
27	Volatile Solid Additiveâ€Assisted Sequential Deposition Enables 18.42% Efficiency in Organic Solar Cells. Advanced Science, 2022, 9, e2105347.	5.6	72
28	Eutectic phase behavior induced by a simple additive contributes to efficient organic solar cells. Nano Energy, 2021, 84, 105862.	8.2	70
29	Over 16% efficiency from thick-film organic solar cells. Science Bulletin, 2020, 65, 1979-1982.	4.3	62
30	Feasible D1â€"Aâ€"D2â€"A Random Copolymers for Simultaneous Highâ€Performance Fullerene and Nonfullerene Solar Cells. Advanced Energy Materials, 2018, 8, 1702166.	10.2	61
31	A â€œÏƒ-Holeâ€•Containing Volatile Solid Additive Enabling 16.5% Efficiency Organic Solar Cells. IScience, 2020, 23, 100965.	1.9	61
32	The Role of Mineral Acid Doping of PEDOT:PSS and Its Application in Organic Photovoltaics. Advanced Electronic Materials, 2020, 6, 1900648.	2.6	56
33	Performanceâ€Enhancing Approaches for PEDOT:PSSâ€Si Hybrid Solar Cells. Angewandte Chemie - International Edition, 2021, 60, 5036-5055.	7.2	54
34	Improving Molecular Planarity by Changing Alky Chain Position Enables 12.3% Efficiency Allâ€Smallâ€Molecule Organic Solar Cells with Enhanced Carrier Lifetime and Reduced Recombination. Solar Rrl, 2020, 4, 1900326.	3.1	53
35	Constructing a Strongly Absorbing Lowâ€Bandgap Polymer Acceptor for Highâ€Performance Allâ€Polymer Solar Cells. Angewandte Chemie, 2017, 129, 13688-13692.	1.6	51
36	A Simple Approach to Prepare Chlorinated Polymer Donors with Low-Lying HOMO Level for High Performance Polymer Solar Cells. Chemistry of Materials, 2019, 31, 6558-6567.	3.2	50

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37	Regulating the Surface Passivation and Residual Strain in Pure Tin Perovskite Films. ACS Energy Letters, 2021, 6, 3555-3562.	8.8	45
38	Dâ€“A Copolymer Donor Based on Bithienyl Benzodithiophene D-Unit and Monoalkoxy Bifluoroquinoxaline A-Unit for High-Performance Polymer Solar Cells. Chemistry of Materials, 2020, 32, 3254-3261.	3.2	43
39	Role of Ions in Hydrogels with an Ionic Seebeck Coefficient of 52.9 mV K^{â€“1}. Journal of Physical Chemistry Letters, 2022, 13, 4621-4627.	2.1	41
40	Backbone Fluorination of Polythiophenes Improves Device Performance of Non-Fullerene Polymer Solar Cells. ACS Applied Energy Materials, 2019, 2, 7572-7583.	2.5	38
41	Understanding the Effect of the Third Component PC₇₁BM on Nanoscale Morphology and Photovoltaic Properties of Ternary Organic Solar Cells. Solar Rrl, 2020, 4, 1900540.	3.1	37
42	Cathode interfacial layer-free all small-molecule solar cells with efficiency over 12%. Journal of Materials Chemistry A, 2019, 7, 15944-15950.	5.2	36
43	Molecular ordering and phase segregation induced by a volatile solid additive for highly efficient all-small-molecule organic solar cells. Journal of Materials Chemistry A, 2021, 9, 2857-2863.	5.2	36
44	Fluid Mechanics Inspired Sequential Bladeâ€Coating for Highâ€Performance Largeâ€Area Organic Solar Modules. Advanced Functional Materials, 2022, 32, .	7.8	36
45	One-pot synthesis of electron-acceptor composite enables efficient fullerene-free ternary organic solar cells. Journal of Materials Chemistry A, 2018, 6, 22519-22525.	5.2	35
46	Spatial Distribution Recast for Organic Bulk Heterojunctions for Highâ€Performance Allâ€Inorganic Perovskite/Organic Integrated Solar Cells. Advanced Energy Materials, 2020, 10, 2000851.	10.2	34
47	Molecular Lock Induced by Chloroplatinic Acid Doping of PEDOT:PSS for High-Performance Organic Photovoltaics. ACS Applied Materials & Interfaces, 2020, 12, 30954-30961.	4.0	33
48	Effects of incorporating different chalcogenophene comonomers into random acceptor terpolymers on the morphology and performance of all-polymer solar cells. Polymer Chemistry, 2018, 9, 593-602.	1.9	30
49	Highâ€Performance Polymer Solar Cells Achieved by Introducing Sideâ€Chain Heteroatom on Smallâ€Molecule Electron Acceptor. Macromolecular Rapid Communications, 2019, 40, e1800393.	2.0	30
50	Ring-perfluorinated non-volatile additives with a high dielectric constant lead to highly efficient and stable organic solar cells. Journal of Materials Chemistry C, 2019, 7, 4716-4724.	2.7	29
51	Highâ€Efficiency Nonâ€Fullerene Acceptors Developed by Machine Learning and Quantum Chemistry. Advanced Science, 2022, 9, e2104742.	5.6	28
52	A Designed Ladderâ€Type Heteroarene Benzodi(Thienopyran) for Highâ€Performance Fullereneâ€Free Organic Solar Cells. Solar Rrl, 2017, 1, 1700165.	3.1	25
53	High-efficiency organic solar cells based on a small-molecule donor and a low-bandgap polymer acceptor with strong absorption. Journal of Materials Chemistry A, 2018, 6, 9613-9622.	5.2	25
54	A Facile Synthesized Polymer Featuring Bâ€N Covalent Bond and Small Singletâ€Triplet Gap for Highâ€Performance Organic Solar Cells. Angewandte Chemie, 2021, 133, 8895-8899.	1.6	25

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55	Enhanced performance of ternary organic solar cells with a wide bandgap acceptor as the third component. Journal of Materials Chemistry A, 2019, 7, 27423-27431.	5.2	23
56	Solvent effect on the Seebeck coefficient of Fe²⁺/Fe³⁺ hydrogel thermogalvanic cells. Journal of Materials Chemistry A, 2022, 10, 19690-19698.	5.2	22
57	Recombination Pathways in Perovskite Solar Cells. Advanced Materials Interfaces, 2022, 9, .	1.9	20
58	Effects of Alkoxy and Fluorine Atom Substitution of Donor Molecules on the Morphology and Photovoltaic Performance of All Small Molecule Organic Solar Cells. Frontiers in Chemistry, 2018, 6, 413.	1.8	19
59	Improvement in the Efficiency of Alkylsilyl Functionalized Copolymer for Polymer Solar Cells: Faceâ€On Orientation Enhanced by Random Copolymerization. Solar Rrl, 2019, 3, 1900122.	3.1	17
60	Understanding the Morphology of High-Performance Solar Cells Based on a Low-Cost Polymer Donor. ACS Applied Materials & Interfaces, 2020, 12, 9537-9544.	4.0	17
61	Thickâ€Film Highâ€Performance Solar Cells with a C₆₀â€Containing Polystyrene Additive. Solar Rrl, 2019, 3, 1900033.	3.1	16
62	A Nonâ€Conjugated Polymer Acceptor for Efficient and Thermally Stable Allâ€Polymer Solar Cells. Angewandte Chemie, 2020, 132, 20007-20012.	1.6	16
63	â€œDouble-Acceptor-Typeâ€•Random Conjugated Terpolymer Donors for Additive-Free Non-Fullerene Organic Solar Cells. ACS Applied Materials & Interfaces, 2020, 12, 20741-20749.	4.0	15
64	Artificial Intelligence Designer for Highly-Efficient Organic Photovoltaic Materials. Journal of Physical Chemistry Letters, 2021, 12, 8847-8854.	2.1	15
65	A thieno[3,4-<i>b</i>]thiophene linker enables a low-bandgap fluorene-cored molecular acceptor for efficient non-fullerene solar cells. Materials Chemistry Frontiers, 2018, 2, 760-767.	3.2	12
66	Subnaphthalocyanine triimides: potential three-dimensional solution processable acceptors for organic solar cells. Journal of Materials Chemistry C, 2020, 8, 2186-2195.	2.7	12
67	Conjugationâ€Curtailing of Benzodithionopyranâ€Cored Molecular Acceptor Enables Efficient Airâ€Processed Small Molecule Solar Cells. Small, 2019, 15, e1902656.	5.2	11
68	Morphological optimization by rational matching of the donor and acceptor boosts the efficiency of alkylsilyl fused ring-based polymer solar cells. Journal of Materials Chemistry A, 2019, 7, 4847-4854.	5.2	10
69	A low boiling-point and low-cost fluorinated additive improves the efficiency and stability of organic solar cells. Journal of Materials Chemistry C, 2020, 8, 15296-15302.	2.7	10
70	Phase Transition Modulation and Defect Suppression in Perovskite Solar Cells Enabled by a Selfâ€Sacrificed Template. Solar Rrl, 2021, 5, 2100448.	3.1	10
71	Highly Skin-Compliant Polymeric Electrodes with Synergistically Boosted Conductivity toward Wearable Health Monitoring. ACS Applied Materials & Interfaces, 2022, 14, 20113-20121.	4.0	10
72	Modulating Structure Ordering via Side-Chain Engineering of Thieno[3,4-<i>b</i>]thiophene-Based Electron Acceptors for Efficient Organic Solar Cells with Reduced Energy Losses. ACS Applied Materials & Interfaces, 2019, 11, 35193-35200.	4.0	7

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73	High voltage all polymer solar cells with a polymer acceptor based on NDI and benzotriazole. Journal of Materials Chemistry C, 2019, 7, 9031-9037.	2.7	7
74	Efficiency Improvement of Allâ€Smallâ€Molecule Organic Solar Cells Through Fusedâ€Aromaticâ€Ring Sideâ€Chained Donors. Solar Rrl, 2021, 5, .	3.1	7
75	Hole Transfer Promoted by a Viscosity Additive in an All-Polymer Photovoltaic Blend. Journal of Physical Chemistry Letters, 2020, 11, 1384-1389.	2.1	6
76	Strategien zur Steigerung der Leistung von PEDOT:PSS/Siâ€Hybridâ€Solarzellen. Angewandte Chemie, 2021, 133, 5092-5112.	1.6	5
77	Block copolymers as efficient cathode interlayer materials for organic solar cells. Frontiers of Chemical Science and Engineering, 2021, 15, 571-578.	2.3	5
78	Significantly enhanced thermal stability from a new kind of n-type organic semiconductor DFA4: a fully fused F8IC. Journal of Materials Chemistry C, 2021, 9, 13625-13629.	2.7	4
79	Oxygen heterocycle-fused indacenodithiophenebithiophene enables an efficient non-fullerene molecular acceptor. Journal of Materials Chemistry C, 2019, 7, 15344-15349.	2.7	3
80	Simultaneous Interfacial Modification and Crystallization Control by Biguanide Hydrochloride for Stable Perovskite Solar Cells with PCE of 24.4% (Adv. Mater. 8/2022). Advanced Materials, 2022, 34, .	11.1	3
81	A dithienodisilacyclohexadiene (DTDS)-based conjugated model semiconductor: understanding unique features and monitoring structural transition. RSC Advances, 2016, 6, 11933-11936.	1.7	2