Xuechen Jiao

List of Publications by Year
in descending order

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		109321	79698
96	5,675	35	73
papers	citations	h-index	g-index

100	100	100	5909
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	An Alkylated Indacenodithieno[3,2â€b]thiopheneâ€Based Nonfullerene Acceptor with High Crystallinity Exhibiting Single Junction Solar Cell Efficiencies Greater than 13% with Low Voltage Losses. Advanced Materials, 2018, 30, 1705209.	21.0	474
2	Designing ternary blend bulk heterojunction solar cells with reduced carrier recombination and a fill factor of 77%. Nature Energy, 2016, 1, .	39.5	330
3	Oriented Quasiâ€2D Perovskites for High Performance Optoelectronic Devices. Advanced Materials, 2018, 30, e1804771.	21.0	268
4	Manipulating Aggregation and Molecular Orientation in Allâ€Polymer Photovoltaic Cells. Advanced Materials, 2015, 27, 6046-6054.	21.0	264
5	Highâ€Efficiency Nonfullerene Organic Solar Cells: Critical Factors that Affect Complex Multiâ€Length Scale Morphology and Device Performance. Advanced Energy Materials, 2017, 7, 1602000.	19.5	232
6	Miscibilityâ€"Function Relations in Organic Solar Cells: Significance of Optimal Miscibility in Relation to Percolation. Advanced Energy Materials, 2018, 8, 1703058.	19.5	223
7	Flexible, Printable Softâ€Xâ€Ray Detectors Based on Allâ€Inorganic Perovskite Quantum Dots. Advanced Materials, 2019, 31, e1901644.	21.0	221
8	A universal layer-by-layer solution-processing approach for efficient non-fullerene organic solar cells. Energy and Environmental Science, 2019, 12, 384-395.	30.8	193
9	Interface-enhanced organic solar cells with extrapolated T80 lifetimes of over 20â€¯years. Science Bulletin, 2020, 65, 208-216.	9.0	181
10	Incorporation of 2,6â€Connected Azulene Units into the Backbone of Conjugated Polymers: Towards Highâ€Performance Organic Optoelectronic Materials. Angewandte Chemie - International Edition, 2018, 57, 1322-1326.	13.8	160
11	Selfâ€Assembled 2D Perovskite Layers for Efficient Printable Solar Cells. Advanced Energy Materials, 2019, 9, 1803258.	19.5	149
12	Interfacial benzenethiol modification facilitates charge transfer and improves stability of cm-sized metal halide perovskite solar cells with up to 20% efficiency. Energy and Environmental Science, 2018, 11, 1880-1889.	30.8	148
13	A multi-objective optimization-based layer-by-layer blade-coating approach for organic solar cells: rational control of vertical stratification for high performance. Energy and Environmental Science, 2019, 12, 3118-3132.	30.8	142
14	Altering alkyl-chains branching positions for boosting the performance of small-molecule acceptors for highly efficient nonfullerene organic solar cells. Science China Chemistry, 2020, 63, 361-369.	8.2	128
15	Quantitative Morphologyâ€"Performance Correlations in Organic Solar Cells: Insights from Soft Xâ€Ray Scattering. Advanced Energy Materials, 2017, 7, 1700084.	19.5	123
16	Efficient and Mechanically Robust Ultraflexible Organic Solar Cells Based on Mixed Acceptors. Joule, 2020, 4, 128-141.	24.0	101
17	Timeâ€Dependent Morphology Evolution of Solutionâ€Processed Small Molecule Solar Cells during Solvent Vapor Annealing. Advanced Energy Materials, 2016, 6, 1502579.	19.5	96
18	Manipulation of Domain Purity and Orientational Ordering in High Performance All-Polymer Solar Cells. Chemistry of Materials, 2016, 28, 6178-6185.	6.7	87

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19	Charge Creation and Recombination in Multiâ€Length Scale Polymer:Fullerene BHJ Solar Cell Morphologies. Advanced Energy Materials, 2016, 6, 1600699.	19.5	85
20	Separating Crystallization Process of P3HT and Oâ€IDTBR to Construct Highly Crystalline Interpenetrating Network with Optimized Vertical Phase Separation. Advanced Functional Materials, 2019, 29, 1807591.	14.9	82
21	Cholesteric Aggregation at the Quinoidal-to-Diradical Border Enabled Stable n-Doped Conductor. CheM, 2019, 5, 964-976.	11.7	79
22	2D-Conjugated Benzodithiophene-Based Polymer Acceptor: Design, Synthesis, Nanomorphology, and Photovoltaic Performance. Macromolecules, 2015, 48, 7156-7163.	4.8	70
23	High-Performance Ternary Organic Solar Cells with Controllable Morphology via Sequential Layer-by-Layer Deposition. ACS Applied Materials & Interfaces, 2020, 12, 13077-13086.	8.0	69
24	A wide-bandgap Dâ€“A copolymer donor based on a chlorine substituted acceptor unit for high performance polymer solar cells. Journal of Materials Chemistry A, 2019, 7, 14070-14078.	10.3	68
25	Acene Ring Size Optimization in Fused Lactam Polymers Enabling High n-Type Organic Thermoelectric Performance. Journal of the American Chemical Society, 2021, 143, 260-268.	13.7	68
26	High-performance all-polymer solar cells with only 0.47 eV energy loss. Science China Chemistry, 2020, 63, 1449-1460.	8.2	62
27	Controlling the Microstructure of Conjugated Polymers in Highâ€Mobility Monolayer Transistors via the Dissolution Temperature. Angewandte Chemie - International Edition, 2020, 59, 846-852.	13.8	61
28	Charge Generation and Recombination in an Organic Solar Cell with Low Energetic Offsets. Advanced Energy Materials, 2018, 8, 1701073.	19.5	60
29	Control of Mesoscale Morphology and Photovoltaic Performance in Diketopyrrolopyrroleâ€Based Small Band Gap Terpolymers. Advanced Energy Materials, 2017, 7, 1601138.	19.5	59
30	High efficiency and stability small molecule solar cells developed by bulk microstructure fine-tuning. Nano Energy, 2016, 28, 241-249.	16.0	57
31	Fluorinated Thiophene Units Improve Photovoltaic Device Performance of Donorâ€“Acceptor Copolymers. Chemistry of Materials, 2017, 29, 5990-6002.	6.7	57
32	All-small molecule solar cells based on donor molecule optimization with highly enhanced efficiency and stability. Journal of Materials Chemistry A, 2018, 6, 15675-15683.	10.3	55
33	Gaining further insight into the effects of thermal annealing and solvent vapor annealing on time morphological development and degradation in small molecule solar cells. Journal of Materials Chemistry A, 2017, 5, 18101-18110.	10.3	50
34	Nonsymmetrical Connection of Two Identical Building Blocks: Constructing Donorâ€“Acceptor Molecules as Deep Blue Emitting Materials for Efficient Organic Emitting Diodes. Journal of Physical Chemistry Letters, 2019, 10, 842-847.	4.6	45
35	Incorporation of 2,6â€Connected Azulene Units into the Backbone of Conjugated Polymers: Towards Highâ€Performance Organic Optoelectronic Materials. Angewandte Chemie, 2018, 130, 1336-1340.	2.0	40
36	Polaron spin dynamics in high-mobility polymeric semiconductors. Nature Physics, 2019, 15, 814-822.	16.7	40

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37	Drastic Improvement of Air Stability in an n-Type Doped Naphthalene-Diimide Polymer by Thionation. ACS Applied Energy Materials, 2018, 1, 4626-4634.	5.1	39
38	Measuring Temperature-Dependent Miscibility for Polymer Solar Cell Blends: An Easily Accessible Optical Method Reveals Complex Behavior. Chemistry of Materials, 2018, 30, 3943-3951.	6.7	38
39	Thermally stable poly(3â€hexylthiophene): Nonfullerene solar cells with efficiency breaking 10%. Aggregate, 2022, 3, .	9.9	38
40	Viscosity Measurements of Very Thin Polymer Films. Macromolecules, 2005, 38, 5144-5151.	4.8	35
41	FÃ¶rster Resonance Energy Transfer Drives Higher Efficiency in Ternary Blend Organic Solar Cells. ACS Applied Energy Materials, 2018, 1, 4874-4882.	5.1	34
42	Bithieno[3,4-c]pyrrole-4,6-dione-Mediated Crystallinity in Large-Bandgap Polymer Donors Directs Charge Transportation and Recombination in Efficient Nonfullerene Polymer Solar Cells. ACS Energy Letters, 2020, 5, 367-375.	17.4	33
43	Simple Polythiophene Solar Cells Approaching 10% Efficiency via Carbon Chain Length Modulation of Poly(3-alkylthiophene). Macromolecules, 2022, 55, 133-145.	4.8	33
44	Crucial Role of Fluorine in Fully Alkylated Ladder-Type Carbazole-Based Nonfullerene Organic Solar Cells. ACS Applied Materials & Interfaces, 2020, 12, 9555-9562.	8.0	31
45	Improving Photovoltaic Performance of Nonâ€Fullerene Polymer Solar Cells Enables by Fineâ€Tuning Blend Microstructure via Binary Solvent Mixtures. Advanced Functional Materials, 2021, 31, 2008767.	14.9	31
46	Revealing the Sideâ€Chainâ€Dependent Ordering Transition of Highly Crystalline Doubleâ€Cable Conjugated Polymers. Angewandte Chemie - International Edition, 2021, 60, 25499-25507.	13.8	31
47	N-Alkyl substituted 1H-benzimidazoles as improved n-type dopants for a naphthalene-diimide based copolymer. Journal of Materials Chemistry A, 2018, 6, 15294-15302.	10.3	28
48	Charge transport physics of a unique class of rigid-rod conjugated polymers with fused-ring conjugated units linked by double carbon-carbon bonds. Science Advances, 2021, 7, .	10.3	28
49	Crystallization of Sensitizers Controls Morphology and Performance in Si-/C-PCPDTBT-Sensitized P3HT:ICBA Ternary Blends. Macromolecules, 2017, 50, 2415-2423.	4.8	27
50	Pyrene-fused PDI based ternary solar cells: high power conversion efficiency over 10%, and improved device thermal stability. Materials Chemistry Frontiers, 2019, 3, 93-102.	5.9	27
51	Synthesis and Aggregation Behavior of a Glycolated Naphthalene Diimide Bithiophene Copolymer for Application in Low-Level n-Doped Organic Thermoelectrics. Macromolecules, 2020, 53, 5158-5168.	4.8	27
52	Fused Cyclopentadithienothiophene Acceptor Enables Ultrahigh Shortâ€Circuit Current and High Efficiency >11% in Asâ€Cast Organic Solar Cells. Advanced Functional Materials, 2019, 29, 1904956.	14.9	26
53	Oriented Attachment as the Mechanism for Microstructure Evolution in Chloride-Derived Hybrid Perovskite Thin Films. ACS Applied Materials & Interfaces, 2019, 11, 39930-39939.	8.0	26
54	Controlling additive behavior to reveal an alternative morphology formation mechanism in polymerâ€‰:â€‰fullerene bulk-heterojunctions. Journal of Materials Chemistry A, 2016, 4, 16136-16147.	10.3	22

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55	On the manifestation of electron-electron interactions in the thermoelectric response of semicrystalline conjugated polymers with low energetic disorder. Communications Physics, 2018, 1, .	5.3	22
56	Quantitative Determination of the Vertical Segregation and Molecular Ordering of PBDB-T/ITIC Blend Films with Solvent Additives. ACS Applied Materials & Interfaces, 2020, 12, 24165-24173.	8.0	21
57	Quinoidâ€Resonant Conducting Polymers Achieve High Electrical Conductivity over 4000 S cm^{â^'1} for Thermoelectrics. Advanced Science, 2018, 5, 1800947.	11.2	20
58	Controlling intermolecular redox-doping of naphthalene diimides. Journal of Materials Chemistry C, 2019, 7, 4466-4474.	5.5	20
59	A new small molecule donor for efficient and stable all small molecule organic solar cells. Organic Electronics, 2019, 70, 78-85.	2.6	20
60	Diketopyrrolopyrrole based organic semiconductors with different numbers of thiophene units: symmetry tuning effect on electronic devices. New Journal of Chemistry, 2018, 42, 4017-4028.	2.8	19
61	Synergistic Effects of Polymer Donor Backbone Fluorination and Nitrogenation Translate into Efficient Non-Fullerene Bulk-Heterojunction Polymer Solar Cells. ACS Applied Materials & Interfaces, 2020, 12, 9545-9554.	8.0	19
62	Resonant Tender X-ray Diffraction for Disclosing the Molecular Packing of Paracrystalline Conjugated Polymer Films. Journal of the American Chemical Society, 2021, 143, 1409-1415.	13.7	19
63	Perovskite Xâ€Ray Detectors: Flexible, Printable Softâ€Xâ€Ray Detectors Based on Allâ€Inorganic Perovskite Quantum Dots (Adv. Mater. 30/2019). Advanced Materials, 2019, 31, 1970214.	21.0	18
64	Enantiopure versus racemic naphthalene diimide-based n-type organic semiconductors: effect on charge transport. Journal of Materials Chemistry C, 2019, 7, 2659-2665.	5.5	16
65	Solubilizing core modifications on high-performing benzodithiophene-based molecular semiconductors and their influences on film nanostructure and photovoltaic performance. Journal of Materials Chemistry A, 2019, 7, 6312-6326.	10.3	16
66	Controlling the Microstructure of Conjugated Polymers in Highâ€Mobility Monolayer Transistors via the Dissolution Temperature. Angewandte Chemie, 2020, 132, 856-862.	2.0	15
67	Effect of Backbone Sequence of a Naphthalene Diimide-Based Copolymer on Performance in n-Type Organic Thin-Film Transistors. ACS Applied Materials & Interfaces, 2019, 11, 35185-35192.	8.0	14
68	A Transfer Method for Highâ€Mobility, Biasâ€Stable, and Flexible Organic Fieldâ€Effect Transistors. Advanced Materials Technologies, 2020, 5, 2000169.	5.8	14
69	The effect of the dielectric end groups on the positive bias stress stability of N2200 organic field effect transistors. APL Materials, 2021, 9, 041113.	5.1	13
70	Analysis of Interdiffused InGaN Quantum Wells for Visible Light-Emitting Diodes. Journal of Display Technology, 2013, 9, 199-205.	1.2	12
71	Resolving Different Physical Origins toward Crystallite Imperfection in Semiconducting Polymers: Crystallite Size vs Paracrystallinity. Journal of Physical Chemistry B, 2020, 124, 10529-10538.	2.6	12
72	Radical Anion Yield, Stability, and Electrical Conductivity of Naphthalene Diimide Copolymers n-Doped with Tertiary Amines. ACS Applied Polymer Materials, 2020, 2, 1954-1963.	4.4	12

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73	Charge Generation and Mobility-Limited Performance of Bulk Heterojunction Solar Cells with a Higher Adduct Fullerene. Journal of Physical Chemistry C, 2017, 121, 10305-10316.	3.1	11
74	Detecting the Onset of Molecular Reorganization in Conjugated Polymer Thin Films Using an Easily Accessible Optical Method. Macromolecules, 2019, 52, 4646-4654.	4.8	10
75	A Structurally Simple but Highâ€Performing Donorâ€“Acceptor Polymer for Fieldâ€Effect Transistor Applications. Advanced Electronic Materials, 2020, 6, 2000490.	5.1	10
76	Shorter alkyl chain in thieno[3,4-c]pyrrole-4,6-dione (TPD)-based large bandgap polymer donors â€“ Yield efficient non-fullerene polymer solar cells. Journal of Energy Chemistry, 2021, 53, 69-76.	12.9	10
77	Dielectric Constant Engineering of Organic Semiconductors: Effect of Planarity and Conjugation Length. Advanced Functional Materials, 2022, 32, 2104259.	14.9	10
78	Enhanced Nâ€Type Doping of a Naphthalene Diimide Based Copolymer by Modification of the Donor Unit. Advanced Electronic Materials, 2021, 7, 2100407.	5.1	10
79	Influence of side-chain length and geometry on the thermal expansion behavior and polymorphism of naphthalene diimide-based thin films. Physical Review Materials, 2019, 3, .	2.4	9
80	Magnetic Modification and the Mechanism of Tbâ€Phthalocyanine Single Molecule Magnets Prepared by a High Yield Method. European Journal of Inorganic Chemistry, 2020, 2020, 2112-2117.	2.0	8
81	Rational Design of Donorâ€“Acceptor Based Semiconducting Copolymers with High Dielectric Constants. Journal of Physical Chemistry C, 2021, 125, 6886-6896.	3.1	8
82	Correlation of Nanomorphology with Structural and Spectroscopic Studies in Organic Solar Cells. ACS Applied Nano Materials, 2020, 3, 11080-11089.	5.0	7
83	Pronounced Dependence of Allâ€Polymer Solar Cells Photovoltaic Performance on the Alkyl Substituent Patterns in Large Bandgap Polymer Donors. ChemPhysChem, 2020, 21, 908-915.	2.1	7
84	From Homochiral Assembly to Heterochiral Assembly: A Leap in Charge Transport Properties of Binaphthol-Based Axially Chiral Materials. Langmuir, 2019, 35, 6188-6195.	3.5	6
85	Correlating domain purity with charge carrier mobility in bulk heterojunction polymer solar cells. Proceedings of SPIE, 2014, , .	0.8	5
86	Investigation of the effect of microstructural changes on thermal transport in semicrystalline polymer semiconductors. APL Materials, 2019, 7, 081118.	5.1	5
87	Boosted photovoltaic performance of indenothiophene-based molecular acceptorviafusing a thiophene. Journal of Materials Chemistry C, 2020, 8, 630-636.	5.5	5
88	Magnetic Improvement and Relaxation Mechanism of the Tb-Phthalocyanine Single-Molecule Magnet by Absorbing CH₂Cl₂ Molecules. Journal of Physical Chemistry C, 2021, 125, 10165-10172.	3.1	5
89	The alkyl chain positioning of thieno[3,4-c]pyrrole-4,6-dione (TPD)-Based polymer donors mediates the energy loss, charge transport and recombination in polymer solar cells. Journal of Power Sources, 2020, 480, 229098.	7.8	4
90	Compatible Acceptors Mediate Morphology and Charge Generation, Transpration, Extraction, and Energy Loss in Efficient Ternary Polymer Solar Cells. ACS Applied Energy Materials, 2021, 4, 10187-10196.	5.1	4

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91	The magnetic anisotropy of Tb-phthalocyanine films effected by molecular orientation. Applied Surface Science, 2022, 585, 152445.	6.1	4
92	Single Atom Selenium Substitutionâ€Mediated Pâ€Type Doping in Polythiophenes toward Highâ€Performance Organic Electronics and Thermoelectrics. Advanced Electronic Materials, 2022, 8, .	5.1	4
93	Analysis of light extraction efficiency enhancement for InGaN quantum wells light-emitting diodes with microspheres. , 2012, , .		2
94	Vinylene Flanked Naphtho[1,2-c:5,6-câ€²]bis[1,2,5]thiadiazole Polymer for Low-Crystallinity Ambipolar Transistors. Macromolecules, 2022, 55, 331-337.	4.8	2
95	Analysis of Position and Thickness Dependences of Delta Layer in InGaN-Delta-InN Quantum Wells Light-Emitting Diodes. , 2012, , .		1
96	Analysis of thermally-annealed InGaN quantum wells for light-emitting diodes. , 2012, , .		0