

Regioregular Narrow-Bandgap n-Type Polymers with Efficient All-Polymer Solar Cells

Advanced Materials

33, e2102635

DOI: [10.1002/adma.202102635](https://doi.org/10.1002/adma.202102635)

Citation Report

#	ARTICLE	IF	CITATIONS
1	A low-cost and green-solvent-processable hole-transport material enabled by a traditional bidentate ligand for highly efficient inverted perovskite solar cells. <i>Journal of Materials Chemistry C</i> , 2021, 9, 8930-8938.	2.7	8
2	A universal strategy via polymerizing non-fullerene small molecule acceptors enables efficient all-polymer solar cells with excellent thermal stability. <i>Chemical Engineering Journal</i> , 2022, 430, 132711.	6.6	15
3	Highly crystalline acceptor materials based on benzodithiophene with different amount of fluorine substitution on alkoxyphenyl conjugated side chains for organic photovoltaics. <i>Materials Reports Energy</i> , 2021, 1, 100059.	1.7	2
4	n-Type Organic and Polymeric Semiconductors Based on Bithiophene Imide Derivatives. <i>Accounts of Chemical Research</i> , 2021, 54, 3804-3817.	7.6	96
5	The renaissance of polythiophene organic solar cells. <i>Trends in Chemistry</i> , 2021, 3, 1074-1087.	4.4	64
6	Optimization of solvent swelling for efficient organic solar cells via sequential deposition. <i>Materials Reports Energy</i> , 2021, 1, 100063.	1.7	5
7	Boosting the Efficiency of Non-fullerene Organic Solar Cells via a Simple Cathode Modification Method. <i>ACS Applied Materials & Interfaces</i> , 2021, 13, 51078-51085.	4.0	19
8	Importance of High Electron Mobility in Polymer Acceptors for Efficient All-Polymer Solar Cells: Combined Engineering of Backbone Building Unit and Regioregularity. <i>Advanced Functional Materials</i> , 2022, 32, 2108508.	7.8	41
9	To Fluorinate or Not to Fluorinate in Organic Solar Cells: Achieving a Higher PCE of 15.2% when the Donor Polymer is Halogen-Free. <i>Advanced Energy Materials</i> , 2021, 11, 2102648.	10.2	33
10	Ternary Blend Organic Solar Cells: Understanding the Morphology from Recent Progress. <i>Advanced Materials</i> , 2022, 34, e2107476.	11.1	100
11	Polymer Acceptors with Flexible Spacers Afford Efficient and Mechanically Robust All-Polymer Solar Cells. <i>Advanced Materials</i> , 2022, 34, e2107361.	11.1	89
12	Exploring Inorganic Hole Collection Materials from Mixed-Metal Dawson-Type Polyoxometalates for Efficient Organic Photovoltaic Devices. <i>Solar Rrl</i> , 2022, 6, 2100827.	3.1	6
13	Synergistic Engineering of Side Chains and Backbone Regioregularity of Polymer Acceptors for High-Performance All-Polymer Solar Cells with 15.1% Efficiency. <i>Advanced Energy Materials</i> , 2022, 12, 2103239.	10.2	46
14	Achieving high efficiency and well-kept ductility in ternary all-polymer organic photovoltaic blends thanks to two well miscible donors. <i>Matter</i> , 2022, 5, 725-734.	5.0	145
15	Polymerizing small molecular acceptors for efficient all-polymer solar cells. <i>Informa-Materials</i> , 2022, 4, .	8.5	42
16	Layer-by-layer processed binary all-polymer solar cells with efficiency over 16% enabled by finely optimized morphology. <i>Nano Energy</i> , 2022, 93, 106858.	8.2	71
17	Accessing Highly Efficient Photothermal Conversion with Stable Open-Shell Aromatic Nitric Acid Radicals. <i>Angewandte Chemie - International Edition</i> , 2022, 61, .	7.2	18
18	Accessing Highly Efficient Photothermal Conversion with Stable Open-Shell Aromatic Nitric Acid Radicals. <i>Angewandte Chemie</i> , 0, , .	1.6	5

#	ARTICLE	IF	CITATIONS
19	Regioregularity-control of conjugated polymers: from synthesis and properties, to photovoltaic device applications. <i>Journal of Materials Chemistry A</i> , 2022, 10, 2672-2696.	5.2	23
20	Ternary strategy enabling high-efficiency rigid and flexible organic solar cells with reduced non-radiative voltage loss. <i>Energy and Environmental Science</i> , 2022, 15, 1563-1572.	15.6	83
21	Effect of External Magnetic Field on Bulk Heterojunction Polymer Solar Cells. <i>Macromolecular Rapid Communications</i> , 2022, , 2100933.	2.0	2
22	The synergistic effects of central core size and end group engineering on performance of narrow bandgap nonfullerene acceptors. <i>Chemical Engineering Journal</i> , 2022, 435, 135020.	6.6	14
23	Highly efficient organic solar cells with superior deformability enabled by diluting the small molecule acceptor content. <i>Journal of Materials Chemistry A</i> , 2022, 10, 8293-8302.	5.2	10
24	Revisiting carbazole-based polymer donors for efficient and thermally stable polymer solar cells: structural utility of coplanar π -bridged spacers. <i>Journal of Materials Chemistry A</i> , 2022, 10, 9408-9418.	5.2	12
25	18.42% efficiency polymer solar cells enabled by terpolymer donors with optimal miscibility and energy levels. <i>Journal of Materials Chemistry A</i> , 2022, 10, 7878-7887.	5.2	34
27	A New PEDOT Derivative for Efficient Organic Solar Cell with a Fill Factor of 0.80. <i>Advanced Energy Materials</i> , 2022, 12, .	10.2	52
28	Meniscus-Assisted Coating with Optimized Active Layer Morphology toward Highly Efficient All-Polymer Solar Cells. <i>Advanced Materials</i> , 2022, 34, e2108508.	11.1	26
29	Backbone Configuration and Electronic Property Tuning of Imide-Functionalized Ladder-Type Heteroarenes-Based Polymer Acceptors for Efficient All-Polymer Solar Cells. <i>Advanced Functional Materials</i> , 2022, 32, .	7.8	12
30	Case Study of Metal Coordination to the Charge Transport and Thermal Stability of Porphyrin-Based Field-Effect Transistors. , 2022, 4, 548-553.		4
31	16.52% Efficiency All-Polymer Solar Cells with High Tolerance of the Photoactive Layer Thickness. <i>Advanced Materials</i> , 2022, 34, e2108749.	11.1	63
32	Polymer Acceptors for High-Performance All-Polymer Solar Cells. <i>Chemistry - A European Journal</i> , 2022, 28, .	1.7	26
33	Effect of the Selective Halogenation of Small Molecule Acceptors on the Blend Morphology and Voltage Loss of High-Performance Solar Cells. <i>Advanced Functional Materials</i> , 2022, 32, .	7.8	27
34	Isogenous Asymmetric-Symmetric Acceptors Enable Efficient Ternary Organic Solar Cells with Thin and 300 nm Thick Active Layers Simultaneously. <i>Advanced Functional Materials</i> , 2022, 32, .	7.8	75
35	Side-Chain Substituents on Benzotriazole-Based Polymer Acceptors Affecting the Performance of All-Polymer Solar Cells. <i>Macromolecular Rapid Communications</i> , 2022, 43, e2200062.	2.0	12
36	Simultaneously Enhanced Efficiency and Mechanical Durability in Ternary Solar Cells Enabled by Low-Cost Incompletely Separated Fullerenes. <i>Macromolecular Rapid Communications</i> , 2022, 43, e2200139.	2.0	14
37	Effects of fluorination position on all-polymer organic solar cells. <i>Dyes and Pigments</i> , 2022, 200, 110180.	2.0	10

#	ARTICLE	IF	CITATIONS
38	Fine-tuning Batch Factors of Polymer Acceptors Enables a Binary All-Polymer Solar Cell with High Efficiency of 16.11%. <i>Advanced Energy Materials</i> , 2022, 12, .	10.2	52
39	<i>In situ</i> and <i>ex situ</i> investigations on ternary strategy and co-solvent effects towards high-efficiency organic solar cells. <i>Energy and Environmental Science</i> , 2022, 15, 2479-2488.	15.6	84
40	Heteroheptacene-based acceptors with thieno[3,2-b]pyrrole yield high-performance polymer solar cells. <i>National Science Review</i> , 2022, 9, .	4.6	67
41	Unraveling the Correlations between Mechanical Properties, Miscibility, and Film Microstructure in All-Polymer Photovoltaic Cells. <i>Advanced Functional Materials</i> , 2022, 32, .	7.8	47
42	Over 16% efficiency all-polymer solar cells by sequential deposition. <i>Science China Chemistry</i> , 2022, 65, 1157-1163.	4.2	58
43	Nonfullerene acceptors based on perylene monoimides. <i>Journal of Semiconductors</i> , 2022, 43, 050203.	2.0	4
44	Non-Fullerene Acceptor Doped Block Copolymer for Efficient and Stable Organic Solar Cells. <i>ACS Energy Letters</i> , 2022, 7, 2196-2202.	8.8	34
45	Complex multilength-scale morphology in organic photovoltaics. <i>Trends in Chemistry</i> , 2022, 4, 699-713.	4.4	13
46	n-Type conjugated polymers comprising bithiophene imide and multifluorinated thiophene moieties synthesized by direct arylation polycondensation. <i>Journal of Materials Chemistry C</i> , 2022, 10, 13905-13912.	2.7	3
47	Realizing the efficiency-stability balance for all-polymer photovoltaic blends. <i>Journal of Materials Chemistry C</i> , 2022, 10, 9723-9729.	2.7	12
48	Intrinsically Stretchable, Efficient Organic Solar Cells Achieved by High-Molecular-Weight, Electro-Active Polymer Acceptor Additives. <i>Advanced Energy Materials</i> , 2022, 12, .	10.2	45
49	Isomerization of Asymmetric Ladder-Type Heteroheptacene-Based Small-Molecule Acceptors Improving Molecular Packing: Efficient Nonfullerene Organic Solar Cells with Excellent Fill Factors. <i>Advanced Functional Materials</i> , 2022, 32, .	7.8	20
50	Binary Blend All-Polymer Solar Cells with a Record Efficiency of 17.41% Enabled by Programmed Fluorination Both on Donor and Acceptor Blocks. <i>Advanced Science</i> , 2022, 9, .	5.6	45
51	A Top-Down Strategy to Engineer Active Layer Morphology for Highly Efficient and Stable All-Polymer Solar Cells. <i>Advanced Materials</i> , 2022, 34, .	11.1	41
52	Tailoring the Morphology's Microevolution for Binary All-Polymer Solar Cells Processed by Aromatic Hydrocarbon Solvent with 16.22% Efficiency. <i>ACS Applied Materials & Interfaces</i> , 2022, 14, 29956-29963.	4.0	17
53	Group 16 conjugated polymers based on furan, thiophene, selenophene, and tellurophene. <i>Chemical Society Reviews</i> , 2022, 51, 6442-6474.	18.7	34
54	Material Design and Device Fabrication Strategies for Stretchable Organic Solar Cells. <i>Advanced Materials</i> , 2022, 34, .	11.1	67
55	Advances in Green-Solvent-Processable All-Polymer Solar Cells. <i>Chinese Journal of Polymer Science (English Edition)</i> , 2022, 40, 846-860.	2.0	6

#	ARTICLE	IF	CITATIONS
56	Planarized Polymer Acceptor Featuring High Electron Mobility for Efficient All-Polymer Solar Cells. Chinese Journal of Polymer Science (English Edition), 2022, 40, 968-978.	2.0	3
57	Revisiting the Dithienophthalimide Building Block: Improved Synthetic Method Yielding New High-Performance Polymer Donors for Organic Solar Cells. Angewandte Chemie, 2022, 134, .	1.6	6
58	Revisiting the Dithienophthalimide Building Block: Improved Synthetic Method Yielding New High-Performance Polymer Donors for Organic Solar Cells. Angewandte Chemie - International Edition, 2022, 61, .	7.2	16
59	Regioisomeric Polymer Semiconductors Based on Cyano-Functionalized Dialkoxybithiophenes: Structure-Property Relationship and Photovoltaic Performance. Transactions of Tianjin University, 0, .	3.3	0
60	Fine-Tuned Morphology Based on Two Well-Miscible Polymer Donors Enables Higher Open-Circuit Voltage and Enhanced Stability for Highly Efficient Ternary All-Polymer Solar Cells. Macromolecular Rapid Communications, 2022, 43, .	2.0	2
61	Recent Progress of Y6-Derived Asymmetric Fused Ring Electron Acceptors. Advanced Functional Materials, 2022, 32, .	7.8	114
62	Benzotriazole-Based Nonfused Ring Acceptors for Efficient and Thermally Stable Organic Solar Cells. Macromolecular Rapid Communications, 2022, 43, .	2.0	7
63	Mechanically robust all-polymer solar cells enabled by polymerized small molecule acceptors featuring flexible siloxane-spacers. Journal of Materials Chemistry A, 2022, 10, 20312-20322.	5.2	11
64	Morphology Evolution via a Generic Solvent Additive Concept Enables Large-Area All-Polymer Solar Cells with Negligible PCE Loss. Macromolecular Materials and Engineering, 2022, 307, .	1.7	3
65	Renewed Prospects for Organic Photovoltaics. Chemical Reviews, 2022, 122, 14180-14274.	23.0	323
66	Manipulating Charge Transfer and Transport via Intermediary Electron Acceptor Channels Enables 19.3% Efficiency Organic Photovoltaics. Advanced Energy Materials, 2022, 12, .	10.2	114
67	Effects of Flexible Conjugation-Break Spacers of Non-Conjugated Polymer Acceptors on Photovoltaic and Mechanical Properties of All-Polymer Solar Cells. Nano-Micro Letters, 2022, 14, .	14.4	21
68	Sequentially regular polymer acceptors featuring flexible spacers for high-performance and mechanically robust all-polymer solar cells. Energy and Environmental Science, 2022, 15, 4672-4685.	15.6	47
69	Asymmetric side-chain substitution enables a 3D network acceptor with hydrogen bond assisted crystal packing and enhanced electronic coupling for efficient organic solar cells. Energy and Environmental Science, 2022, 15, 4601-4611.	15.6	67
70	n-Type polymer electron acceptors for organic solar cells. Molecular Systems Design and Engineering, 2022, 7, 1364-1384.	1.7	7
71	All-polymer solar cells: materials and devices. Scientia Sinica Chimica, 2022, 52, 1948-2000.	0.2	2
72	Revisiting the Bithiophene Imide-Based Polymer Donors: Molecular Aggregation and Orientation Control Enabling New Polymer Donors for High-Performance All-Polymer Solar Cells. Chinese Journal of Chemistry, 2022, 40, 2900-2908.	2.6	13
73	Intrinsically Stretchable, Highly Efficient Organic Solar Cells Enabled by Polymer Donors Featuring Hydrogen-Bonding Spacers. Advanced Materials, 2022, 34, .	11.1	41

#	ARTICLE	IF	CITATIONS
74	High performance polymerized small molecule acceptor by synergistic optimization on ð-bridge linker and side chain. Nature Communications, 2022, 13, .	5.8	44
75	Regioisomerâ€Free Difluoroâ€Monochloro Terminalâ€based Hexaâ€Halogenated Acceptor with Optimized Crystal Packing for Efficient Binary Organic Solar Cells. Angewandte Chemie, 2022, 134, .	1.6	6
76	Molecular engineering of Yâ€series acceptors for nonfullerene organic solar cells. SusMat, 2022, 2, 591-606.	7.8	21
77	Intrinsically Stretchable and Nonâ€Halogenated Solvent Processed Polymer Solar Cells Enabled by Hydrophilic Spacerâ€Incorporated Polymers. Advanced Energy Materials, 2022, 12, .	10.2	34
78	Regioisomerâ€Free Difluoroâ€Monochloro Terminalâ€based Hexaâ€Halogenated Acceptor with Optimized Crystal Packing for Efficient Binary Organic Solar Cells. Angewandte Chemie - International Edition, 2022, 61, .	7.2	55
79	Status and prospects of ternary all-polymer organic solar cells. Materials Today Energy, 2022, , 101166.	2.5	7
80	Impact of isomers on the photovoltaic properties of polymerized small-molecule acceptors. , 2022, 1, 100008.		8
81	Simultaneous Optimization of Efficiency, Stretchability, and Stability in <scp>Allâ€Polymer</scp> Solar Cells via Aggregation Control^{â€}. Chinese Journal of Chemistry, 2023, 41, 159-166.	2.6	29
82	Allâ€Polymer Solar Cells with 17% Efficiency Enabled by the â€Endâ€Cappedâ€Ternary Strategy. Advanced Science, 2022, 9, .	5.6	17
83	Y-Series-Based Polymer Acceptors for High-Performance All-Polymer Solar Cells in Binary and Non-binary Systems. ACS Energy Letters, 2022, 7, 3835-3854.	8.8	25
84	Recent progress in lowâ€cost noncovalently fusedâ€ring electron acceptors for organic solar cells. Aggregate, 2022, 3, .	5.2	60
85	Regulation of Polymer Configurations Enables Green Solventâ€Processed Largeâ€Area Binary Allâ€Polymer Solar Cells With Breakthrough Performance and High Efficiency Stretchability Factor. Advanced Materials, 2023, 35, .	11.1	34
86	Highly Flexible Allâ€Polymer Solar Cells Processed without Postâ€Treatment Achieving 13.56% Efficiency. Solar Rrl, 2022, 6, .	3.1	4
87	Highly efficient and stable binary all-polymer solar cells enabled by sequential deposition processing tuned microstructures. Journal of Materials Chemistry C, 2022, 10, 17899-17906.	2.7	5
88	Linear Regulating of Polymer Acceptor Aggregation with Short Alkyl Chain Units Enhances Allâ€Polymer Solar Cellsâ€™ Efficiency. Macromolecular Rapid Communications, 2023, 44, .	2.0	2
89	Constructing a Double-Cable Polymer Acceptor for Efficient All-Polymer Solar Cells with a Non-Radiative Recombination Energy Loss of 0.16 eV. Chemistry of Materials, 2022, 34, 9970-9981.	3.2	8
90	The high-performance organic solar cells with an improved efficiency and stability by incorporating environmental biomaterial astaxanthin. Electrochimica Acta, 2023, 439, 141684.	2.6	1
91	Composition-Tolerant Terpolymers for Efficient, Nonhalogenated Solvent-Processed Polymer Solar Cells. Macromolecules, 2022, 55, 10395-10404.	2.2	2

#	ARTICLE	IF	CITATIONS
92	Tailoring Co-crystallization over Microphase Separation in Conjugated Block Copolymers via Rational Film Processing for Field-Effect Transistors. <i>Macromolecules</i> , 2022, 55, 10405-10414.	2.2	5
93	Efficient and Nonhalogenated Solvent-Processed Organic Solar Cells Enabled by Conjugated Donor–Acceptor Block Copolymers Containing the Same Benzodithiophene Unit. <i>ACS Applied Materials & Interfaces</i> , 2022, 14, 57070-57081.	4.0	7
94	Ternary All-Polymer Solar Cells with Efficiency up to 18.14% Employing a Two-Step Sequential Deposition. <i>Advanced Materials</i> , 2023, 35, .	11.1	33
95	Improved Molecular Ordering in a Ternary Blend Enables All-Polymer Solar Cells over 18% Efficiency. <i>Advanced Materials</i> , 2023, 35, .	11.1	45
96	Limiting phase separation <i>via</i> halogen-free solvent slot-die processing enables highly efficient and eco-friendly all-polymer solar cells. <i>Journal of Materials Chemistry A</i> , 2023, 11, 3028-3037.	5.2	5
97	Stable block copolymer single-material organic solar cells: progress and perspective. <i>Energy and Environmental Science</i> , 2023, 16, 723-744.	15.6	18
98	17% efficiency for linear-shaped ADA-type nonfullerene acceptors enabled by 3D reticulated molecular packing. <i>Nano Energy</i> , 2023, 107, 108116.	8.2	11
99	An efficient polymer acceptor with fluorinated linkers enables all polymer solar cells with an efficiency of 15.7%. <i>Journal of Materials Chemistry A</i> , 2023, 11, 5584-5592.	5.2	4
100	Dimerized small-molecule acceptors enable efficient and stable organic solar cells. <i>Joule</i> , 2023, 7, 416-430.	11.7	65
101	Linker Engineering of Dimerized Small Molecule Acceptors for Highly Efficient and Stable Organic Solar Cells. <i>ACS Energy Letters</i> , 2023, 8, 1344-1353.	8.8	45
102	Unveiling the Morphological and Physical Mechanism of Burn-In Loss Alleviation by Ternary Matrix Toward Stable and Efficient All-Polymer Solar Cells. <i>Advanced Materials</i> , 2023, 35, .	11.1	52
103	Air-stable ternary organic solar cells achieved by using fullerene additives in non-fullerene acceptor-polymer donor blends. <i>Journal of Materials Chemistry C</i> , 2023, 11, 8074-8083.	2.7	5
104	Efficient and stable organic solar cells enabled by multicomponent photoactive layer based on one-pot polymerization. <i>Nature Communications</i> , 2023, 14, .	5.8	35
105	Synthesis of angular-shaped naphthodithiophenediimide and its donor–acceptor copolymers as nonvolatile polymer additives for organic solar cells. <i>Journal of Materials Chemistry A</i> , 2023, 11, 7572-7583.	5.2	11
106	Modulation of Dielectric Constant and Photovoltaic Properties of 2,1,3-benzothiadiazole-based Alternating Copolymers by Adding Fluorine Atoms to the Backbone of Polymers. <i>ChemistrySelect</i> , 2023, 8, .	0.7	2
107	Poly(dimethylsiloxane)-block-PM6 Polymer Donors for High-Performance and Mechanically Robust Polymer Solar Cells. <i>Advanced Materials</i> , 2023, 35, .	11.1	25
108	Isomeric Small Molecule Donor with Terminal Branching Position Directly Attached to the Backbone Enables Efficient All-Polymer Organic Solar Cells with Excellent Stability. <i>Advanced Functional Materials</i> , 2023, 33, .	7.8	11
109	Over 18% efficiency ternary all-polymer solar cells with high photocurrent and fill factor. <i>Matter</i> , 2023, 6, 1542-1554.	5.0	13

#	ARTICLE	IF	CITATIONS
110	Layer-by-Layer Processed Ternary All-Polymer Organic Solar Cells with 17.74% Efficiency Enabled by Introducing a Designed Narrow-Bandgap Guest Polymer Acceptor. <i>Solar Rrl</i> , 2023, 7, .	3.1	3
111	Electron-Transporting Conjugated Polymers from Novel Aromatic Five-Membered Diimides: Naphtho[1,2- <i>b</i> :4,3- <i>b'</i>]-dithiophene and -Diselenophene Diimides. <i>Macromolecules</i> , 2023, 56, 2990-3003.	2.2	8
112	Incorporation of the Benzobisthiadiazole Unit Leads to Open-Shell Conjugated Polymers with n-Type Charge Transport Properties. <i>Macromolecules</i> , 2023, 56, 2980-2989.	2.2	4
113	Interdiffused thermoplastic urethane-PEDOT:PSS bilayers with superior adhesion properties for high-performance and intrinsically-stretchable organic solar cells. <i>Journal of Materials Chemistry A</i> , 2023, 11, 12846-12855.	5.2	1
118	Regioregular polymerized small-molecule acceptors for high-performance all-polymer solar cells. <i>Journal of Materials Chemistry C</i> , 2023, 11, 9082-9092.	2.7	7
126	Polymerized A-DA TM -A type small-molecule acceptors for high performance all-polymer solar cells: progress and perspective. <i>Science China Chemistry</i> , 2023, 66, 2513-2531.	4.2	5