Xiaodan Gu

List of Publications by Year
in descending order

116 papers	8,668 citations	46918 47 h-index	45213 90 g-index
118 all docs	118 docs citations	118 times ranked	8307 citing authors

#	Article	IF	Citations
1	Intrinsically stretchable and healable semiconducting polymer for organic transistors. Nature, 2016, 539, 411-415.	13.7	1,030
2	Highly stretchable polymer semiconductor films through the nanoconfinement effect. Science, 2017, 355, 59-64.	6.0	897
3	Stretchable Self-Healing Polymeric Dielectrics Cross-Linked Through Metalâ€"Ligand Coordination. Journal of the American Chemical Society, 2016, 138, 6020-6027.	6.6	453
4	Efficient Organic Solar Cell with 16.88% Efficiency Enabled by Refined Acceptor Crystallization and Morphology with Improved Charge Transfer and Transport Properties. Advanced Energy Materials, 2020, 10, 1904234.	10.2	402
5	The meniscus-guided deposition of semiconducting polymers. Nature Communications, 2018, 9, 534.	5.8	324
6	Aggregationâ€Induced Multilength Scaled Morphology Enabling 11.76% Efficiency in Allâ€Polymer Solar Cells Using Printing Fabrication. Advanced Materials, 2019, 31, e1902899.	11.1	270
7	Multi-scale ordering in highly stretchable polymer semiconducting films. Nature Materials, 2019, 18, 594-601.	13.3	251
8	Flow-enhanced solution printing of all-polymer solar cells. Nature Communications, 2015, 6, 7955.	5.8	221
9	Rollâ€toâ€Roll Printed Largeâ€Area Allâ€Polymer Solar Cells with 5% Efficiency Based on a Low Crystallinity Conjugated Polymer Blend. Advanced Energy Materials, 2017, 7, 1602742.	10.2	214
10	Stretchable self-healable semiconducting polymer film for active-matrix strain-sensing array. Science Advances, 2019, 5, eaav3097.	4.7	179
11	Pyrazine-Flanked Diketopyrrolopyrrole (DPP): A New Polymer Building Block for High-Performance n-Type Organic Thermoelectrics. Journal of the American Chemical Society, 2019, 141, 20215-20221.	6.6	170
12	High-brightness all-polymer stretchable LED with charge-trapping dilution. Nature, 2022, 603, 624-630.	13.7	170
13	An In Situ Grazing Incidence Xâ€Ray Scattering Study of Block Copolymer Thin Films During Solvent Vapor Annealing. Advanced Materials, 2014, 26, 273-281.	11.1	141
14	The coupling and competition of crystallization and phase separation, correlating thermodynamics and kinetics in OPV morphology and performances. Nature Communications, 2021, 12, 332.	5.8	140
15	An Intrinsically Stretchable Highâ€Performance Polymer Semiconductor with Low Crystallinity. Advanced Functional Materials, 2019, 29, 1905340.	7.8	120
16	Ultra-conformal skin electrodes with synergistically enhanced conductivity for long-time and low-motion artifact epidermal electrophysiology. Nature Communications, 2021, 12, 4880.	5.8	116
17	Nonfused Nonfullerene Acceptors with an Aâ€"Dâ€"Aâ€²â€"Dâ€"A Framework and a Benzothiadiazole Core for High-Performance Organic Solar Cells. ACS Applied Materials & Interfaces, 2020, 12, 16531-16540.	4.0	100
18	Role of Polymer Structure on the Conductivity of Nâ€Doped Polymers. Advanced Electronic Materials, 2016, 2, 1600004.	2.6	99

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19	Effects of Molecular Structure and Packing Order on the Stretchability of Semicrystalline Conjugated Poly(Tetrathienoaceneâ€diketopyrrolopyrrole) Polymers. Advanced Electronic Materials, 2017, 3, 1600311.	2.6	89
20	The Critical Role of Electronâ€Donating Thiophene Groups on the Mechanical and Thermal Properties of Donorâ€"Acceptor Semiconducting Polymers. Advanced Electronic Materials, 2019, 5, 1800899.	2.6	89
21	Alkyl Chain Length Effects of Polymer Donors on the Morphology and Device Performance of Polymer Solar Cells with Different Acceptors. Advanced Energy Materials, 2019, 9, 1901740.	10.2	88
22	Vertical Composition Distribution and Crystallinity Regulations Enable High-Performance Polymer Solar Cells with >17% Efficiency. ACS Energy Letters, 2020, 5, 3637-3646.	8.8	87
23	Tuning the Mechanical Properties of a Polymer Semiconductor by Modulating Hydrogen Bonding Interactions. Chemistry of Materials, 2020, 32, 5700-5714.	3.2	87
24	Tacky Elastomers to Enable Tearâ€Resistant and Autonomous Selfâ€Healing Semiconductor Composites. Advanced Functional Materials, 2020, 30, 2000663.	7.8	85
25	Deformable Organic Nanowire Fieldâ€Effect Transistors. Advanced Materials, 2018, 30, 1704401.	11.1	82
26	Taming Charge Transport in Semiconducting Polymers with Branched Alkyl Side Chains. Advanced Functional Materials, 2017, 27, 1701973.	7.8	80
27	Comparison of the Morphology Development of Polymerâ€"Fullerene and Polymerâ€"Polymer Solar Cells during Solutionâ€Shearing Blade Coating. Advanced Energy Materials, 2016, 6, 1601225.	10.2	79
28	The Role of Dielectric Screening in Organic Shortwave Infrared Photodiodes for Spectroscopic Image Sensing. Advanced Functional Materials, 2018, 28, 1805738.	7.8	79
29	Probing the Viscoelastic Property of Pseudo Freeâ€Standing Conjugated Polymeric Thin Films. Macromolecular Rapid Communications, 2018, 39, e1800092.	2.0	79
30	High Aspect Ratio Subâ€15 nm Silicon Trenches From Block Copolymer Templates. Advanced Materials, 2012, 24, 5688-5694.	11.1	77
31	A molecular design approach towards elastic and multifunctional polymer electronics. Nature Communications, 2021, 12, 5701.	5.8	75
32	A high-spin ground-state donor-acceptor conjugated polymer. Science Advances, 2019, 5, eaav2336.	4.7	72
33	Tuning the Cross-Linker Crystallinity of a Stretchable Polymer Semiconductor. Chemistry of Materials, 2019, 31, 6465-6475.	3.2	70
34	All-Polymer Solar Cells Employing Non-Halogenated Solvent and Additive. Chemistry of Materials, 2016, 28, 5037-5042.	3.2	69
35	Glass Transition Phenomenon for Conjugated Polymers. Macromolecular Chemistry and Physics, 2019, 220, 1900062.	1.1	69
36	Waferâ€Scale Fabrication of Highâ€Performance nâ€Type Polymer Monolayer Transistors Using a Multiâ€Level Selfâ€Assembly Strategy. Advanced Materials, 2019, 31, e1806747.	11.1	68

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37	Pattern transfer using block copolymers. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2013, 371, 20120306.	1.6	66
38	Significance of the double-layer capacitor effect in polar rubbery dielectrics and exceptionally stable low-voltage high transconductance organic transistors. Scientific Reports, 2015, 5, 17849.	1.6	66
39	Controlling Domain Spacing and Grain Size in Cylindrical Block Copolymer Thin Films by Means of Thermal and Solvent Vapor Annealing. Macromolecules, 2016, 49, 3373-3381.	2.2	66
40	Nonâ€Conjugated Flexible Linkers in Semiconducting Polymers: A Pathway to Improved Processability without Compromising Device Performance. Advanced Electronic Materials, 2016, 2, 1600104.	2.6	65
41	Impact of Backbone Rigidity on the Thermomechanical Properties of Semiconducting Polymers with Conjugation Break Spacers. Macromolecules, 2020, 53, 6032-6042.	2.2	63
42	Large-area formation of self-aligned crystalline domains of organic semiconductors on transistor channels using CONNECT. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 5561-5566.	3.3	62
43	Influence of amide-containing side chains on the mechanical properties of diketopyrrolopyrrole-based polymers. Polymer Chemistry, 2018, 9, 5531-5542.	1.9	56
44	Approaching disorder-tolerant semiconducting polymers. Nature Communications, 2021, 12, 5723.	5.8	54
45	Engineering donorâ€"acceptor conjugated polymers for high-performance and fast-response organic electrochemical transistors. Journal of Materials Chemistry C, 2021, 9, 4927-4934.	2.7	54
46	Wide Potential Window Supercapacitors Using Openâ€Shell Donorâ€"Acceptor Conjugated Polymers with Stable Nâ€Doped States. Advanced Energy Materials, 2019, 9, 1902806.	10.2	53
47	Chemical Vapor-Deposited Hexagonal Boron Nitride as a Scalable Template for High-Performance Organic Field-Effect Transistors. Chemistry of Materials, 2017, 29, 2341-2347.	3.2	52
48	Electric Field Tuning Molecular Packing and Electrical Properties of Solutionâ€Shearing Coated Organic Semiconducting Thin Films. Advanced Functional Materials, 2017, 27, 1605503.	7.8	47
49	Tuning Conjugated Polymer Chain Packing for Stretchable Semiconductors. Advanced Materials, 2022, 34, e2104747.	11.1	47
50	Toward the Prediction and Control of Glass Transition Temperature for Donorâ€"Acceptor Polymers. Advanced Functional Materials, 2020, 30, 2002221.	7.8	46
51	Phase-Separation-Induced Porous Lithiophilic Polymer Coating for High-Efficiency Lithium Metal Batteries. Nano Letters, 2021, 21, 4757-4764.	4.5	44
52	Openâ€Shell Donorâ€"Acceptor Conjugated Polymers with High Electrical Conductivity. Advanced Functional Materials, 2020, 30, 1909805.	7.8	43
53	Efficient nâ€Doping of Polymeric Semiconductors through Controlling the Dynamics of Solutionâ€State Polymer Aggregates. Angewandte Chemie - International Edition, 2021, 60, 8189-8197.	7.2	43
54	An <i>in situ</i> GISAXS study of selective solvent vapor annealing in thin block copolymer films: Symmetry breaking of inâ€plane sphere order upon deswelling. Journal of Polymer Science, Part B: Polymer Physics, 2016, 54, 331-338.	2.4	40

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55	Molecular Origin of Strainâ€Induced Chain Alignment in PDPPâ€Based Semiconducting Polymeric Thin Films. Advanced Functional Materials, 2021, 31, 2100161.	7.8	38
56	Compact Roll-to-Roll Coater for in Situ X-ray Diffraction Characterization of Organic Electronics Printing. ACS Applied Materials & Interfaces, 2016, 8, 1687-1694.	4.0	35
57	The effect of side-chain branch position on the thermal properties of poly(3-alkylthiophenes). Polymer Chemistry, 2020, 11, 517-526.	1.9	33
58	Impact of Polystyrene Oligomer Side Chains on Naphthalene Diimideâ€"Bithiophene Polymers as nâ€Type Semiconductors for Organic Fieldâ€Effect Transistors. Advanced Functional Materials, 2016, 26, 1261-1270.	7.8	30
59	Achieving High Alignment of Conjugated Polymers by Controlled Dipâ€Coating. Advanced Electronic Materials, 2020, 6, 2000080.	2.6	30
60	SMART transfer method to directly compare the mechanical response of water-supported and free-standing ultrathin polymeric films. Nature Communications, 2021, 12, 2347.	5.8	30
61	Elucidating the Role of Hydrogen Bonds for Improved Mechanical Properties in a High-Performance Semiconducting Polymer. Chemistry of Materials, 2022, 34, 2259-2267.	3.2	30
62	The effects of counter anions on the dynamic mechanical response in polymer networks crosslinked by metalâ€"ligand coordination. Journal of Polymer Science Part A, 2017, 55, 3110-3116.	2.5	29
63	Impact of Molecular Design on Degradation Lifetimes of Degradable Imine-Based Semiconducting Polymers. Journal of the American Chemical Society, 2022, 144, 3717-3726.	6.6	29
64	Branched Polyethylene as a Plasticizing Additive to Modulate the Mechanical Properties of Ï€-Conjugated Polymers. Macromolecules, 2019, 52, 7870-7877.	2.2	27
65	Challenge and Solution of Characterizing Glass Transition Temperature for Conjugated Polymers by Differential Scanning Calorimetry. Journal of Polymer Science, Part B: Polymer Physics, 2019, 57, 1635-1644.	2.4	27
66	Decoupling Poly(3-alkylthiophenes)â€™ Backbone and Side-Chain Conformation by Selective Deuteration and Neutron Scattering. Macromolecules, 2020, 53, 11142-11152.	2.2	26
67	Side-Chain Engineering To Optimize the Charge Transport Properties of Isoindigo-Based Random Terpolymers for High-Performance Organic Field-Effect Transistors. Macromolecules, 2019, 52, 4765-4775.	2.2	23
68	<scp>Waterâ€assisted</scp> mechanical testing of polymeric <scp>thinâ€films</scp>. Journal of Polymer Science, 2022, 60, 1108-1129.	2.0	23
69	How rigid are conjugated nonâ€ladder and ladder polymers?. Journal of Polymer Science, 2022, 60, 298-310.	2.0	23
70	Revealing the Role of Polaron Distribution on the Performance of n-Type Organic Electrochemical Transistors. Chemistry of Materials, 2022, 34, 864-872.	3.2	23
71	Understanding the Impact of Oligomeric Polystyrene Side Chain Arrangement on the Allâ€Polymer Solar Cell Performance. Advanced Energy Materials, 2018, 8, 1701552.	10.2	21
72	Microstructural Evolution of the Thin Films of a Donorâ€"Acceptor Semiconducting Polymer Deposited by Meniscus-Guided Coating. Macromolecules, 2018, 51, 4325-4340.	2.2	21

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73	High-mobility semiconducting polymers with different spin ground states. Nature Communications, 2022, 13, 2258.	5.8	21
74	Modulating the thermomechanical properties and self-healing efficiency of siloxane-based soft polymers through metalâ€“ligand coordination. New Journal of Chemistry, 2020, 44, 8977-8985.	1.4	20
75	Spontaneously supersaturated nucleation strategy for high reproducible and efficient perovskite solar cells. Chemical Engineering Journal, 2021, 405, 126998.	6.6	20
76	Solvent vapor annealing of block copolymer thin films: removal of processing history. Colloid and Polymer Science, 2014, 292, 1795-1802.	1.0	19
77	Taming Charge Transport and Mechanical Properties of Conjugated Polymers with Linear Siloxane Side Chains. Macromolecules, 2021, 54, 5440-5450.	2.2	18
78	Precise Control of Noncovalent Interactions in Semiconducting Polymers for High-Performance Organic Field-Effect Transistors. Chemistry of Materials, 2021, 33, 8267-8277.	3.2	18
79	Multiamorphous Phases in Diketopyrrolopyrrole-Based Conjugated Polymers: From Bulk to Ultrathin Films. Macromolecules, 2020, 53, 4480-4489.	2.2	18
80	FAPbI₃ Perovskite Films Prepared by Solvent Self-Volatilization for Photovoltaic Applications. ACS Applied Energy Materials, 2022, 5, 1487-1495.	2.5	18
81	Machine learning prediction of glass transition temperature of conjugated polymers from chemical structure. Cell Reports Physical Science, 2022, 3, 100911.	2.8	18
82	Observation of Stepwise Ultrafast Crystallization Kinetics of Donorâ€“Acceptor Conjugated Polymers and Correlation with Field Effect Mobility. Chemistry of Materials, 2021, 33, 1637-1647.	3.2	17
83	High-Performance All-Polymer Solar Cells and Photodetectors Enabled by a High-Mobility n-Type Polymer and Optimized Bulk-Heterojunction Morphology. Chemistry of Materials, 2021, 33, 3746-3756.	3.2	17
84	Side Chain Engineering: Achieving Stretch-Induced Molecular Orientation and Enhanced Mobility in Polymer Semiconductors. Chemistry of Materials, 2022, 34, 2696-2707.	3.2	17
85	Tuning domain size and crystallinity in isoindigo/PCBM organic solar cells via solution shearing. Organic Electronics, 2017, 40, 79-87.	1.4	16
86	Contrasting Chemistry of Block Copolymer Films Controls the Dynamics of Protein Self-Assembly at the Nanoscale. ACS Nano, 2019, 13, 4018-4027.	7.3	16
87	Directly Probing the Fracture Behavior of Ultrathin Polymeric Films. ACS Polymers Au, 2021, 1, 16-29.	1.7	16
88	Enhancing the Solubility of Semiconducting Polymers in Eco-Friendly Solvents with Carbohydrate-Containing Side Chains. ACS Applied Materials & Interfaces, 2021, 13, 25175-25185.	4.0	15
89	High Density and Large Area Arrays of Silicon Oxide Pillars with Tunable Domain Size for Mask Etch Applications. Advanced Materials, 2012, 24, 5505-5511.	11.1	14
90	Topology and ground state control in open-shell donor-acceptor conjugated polymers. Cell Reports Physical Science, 2021, 2, 100467.	2.8	14

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91	Conjugated Polymerâ€Wrapped Singleâ€Wall Carbon Nanotubes for Highâ€Mobility Photonic/Electrical Fully Modulated Synaptic Transistor. Advanced Materials Technologies, 2022, 7, .	3.0	14
92	Variable-Temperature Scattering and Spectroscopy Characterizations for Temperature-Dependent Solution Assembly of PffBT4T-Based Conjugated Polymers. ACS Applied Polymer Materials, 2022, 4, 3023-3033.	2.0	14
93	Efficient nâ€Doping of Polymeric Semiconductors through Controlling the Dynamics of Solutionâ€State Polymer Aggregates. Angewandte Chemie, 2021, 133, 8270-8278.	1.6	12
94	Roll-to-Roll Scalable Production of Ordered Microdomains through Nonvolatile Additive Solvent Annealing of Block Copolymers. Macromolecules, 2019, 52, 5026-5032.	2.2	11
95	Evolution of Chain Dynamics and Oxidation States with Increasing Chain Length for a Donorâ€“Acceptor-Conjugated Oligomer Series. Macromolecules, 2021, 54, 8207-8219.	2.2	11
96	Mechanical Properties and Failure Behavior of Physically Assembled Triblock Copolymer Gels with Varying Midblock Length. Journal of Polymer Science, Part B: Polymer Physics, 2019, 57, 1014-1026.	2.4	9
97	N-Type Complementary Semiconducting Polymer Blends. ACS Applied Polymer Materials, 2020, 2, 2644-2650.	2.0	9
98	Nanoscale Self-Assembly of Poly(3-hexylthiophene) Assisted by a Low-Molecular-Weight Gelator toward Large-Scale Fabrication of Electrically Conductive Networks. ACS Applied Nano Materials, 2021, 4, 8003-8014.	2.4	8
99	Influence of sideâ€chain isomerization on the isothermal crystallization kinetics of poly(3â€alkylthiophenes). Journal of Materials Research, 2021, 36, 191-202.	1.2	8
100	Backbone-driven hostâ€“dopant miscibility modulates molecular doping in NDI conjugated polymers. Materials Horizons, 2022, 9, 500-508.	6.4	8
101	Sticky ends in a self-assembling ABA triblock copolymer: the role of ureas in stimuli-responsive hydrogels. Molecular Systems Design and Engineering, 2019, 4, 91-102.	1.7	7
102	Ptychography of Organic Thin Films at Soft X-ray Energies. Chemistry of Materials, 2019, 31, 4913-4918.	3.2	7
103	Energy level modulation of donorâ€“acceptor alternating random conjugated copolymers for achieving high-performance polymer solar cells. Journal of Materials Chemistry C, 2019, 7, 15335-15343.	2.7	7
104	Backbone flexibility on conjugated polymer's crystallization behavior and thin film mechanical stability. Journal of Polymer Science, 2022, 60, 548-558.	2.0	7
105	Carbohydrate-Containing Conjugated Polymers: Solvent-Resistant Materials for Greener Organic Electronics. ACS Applied Electronic Materials, 2022, 4, 1381-1390.	2.0	6
106	Atomic Oxygen-Resistant Epoxy-amines Containing Phenylphosphine Oxide as Low Earth Orbit Stable Polymers. ACS Applied Polymer Materials, 2021, 3, 178-190.	2.0	5
107	Improving the NO_x decomposition and storage activity through co-incorporating ammonium and copper ions into Mg/Al hydrotalcites. RSC Advances, 2016, 6, 45127-45134.	1.7	4
108	Robust chain aggregation of low-entropy rigid ladder polymers in solution. Journal of Materials Chemistry C, 2022, 10, 13896-13904.	2.7	4

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109	Nonâ€Fullerene Acceptors: Efficient Organic Solar Cell with 16.88% Efficiency Enabled by Refined Acceptor Crystallization and Morphology with Improved Charge Transfer and Transport Properties (Adv. Energy Mater. 18/2020). Advanced Energy Materials, 2020, 10, 2070083.	10.2	3
110	Long-Chain Branched Polypentenamer Rubber: Topological Impact on Tensile Properties, Chain Dynamics, and Strain-Induced Crystallization. ACS Applied Polymer Materials, 2021, 3, 2498-2506.	2.0	3
111	(FA 0.83 MA 0.17) 0.95 Cs 0.05 Pb(I 0.83 Br 0.17) 3 Perovskite Films Prepared by Solvent Volatilization for Highâ€Efficiency Solar Cells. Solar Rrl, 2021, 5, 2100640.	3.1	3
112	From Chlorinated Solvents to Branched Polyethylene: Solventâ€Induced Phase Separation for the Greener Processing of Semiconducting Polymers. Advanced Electronic Materials, 2022, 8, 2100928.	2.6	3
113	Strain-Induced Nanocavitation in Block Copolymer Thin Films for High Performance Filtration Membranes. ACS Applied Polymer Materials, 2021, 3, 5666-5673.	2.0	3
114	Influence of side-chain isomerization on the isothermal crystallization kinetics of poly(3-alkylthiophenes). Journal of Materials Research, 2021, 36, 1-12.	1.2	2
115	Patterning: High Aspect Ratio Subâ€15 nm Silicon Trenches From Block Copolymer Templates (Adv. Mater.) Tj ETQq1 1 0.784314 rgBT /	11.1	1
116	Conductive Polymers: Openâ€Shell Donorâ€"Acceptor Conjugated Polymers with High Electrical Conductivity (Adv. Funct. Mater. 24/2020). Advanced Functional Materials, 2020, 30, 2070155.	7.8	0