Du Yeol Ryu

List of Publications by Year
in descending order

111 papers	4,388 citations	117453 34 h-index	114278 63 g-index
113 all docs	113 docs citations	113 times ranked	5071 citing authors

#	Article	IF	Citations
1	Block Copolymer Nanolithography: Translation of Molecular Level Control to Nanoscale Patterns. Advanced Materials, 2009, 21, 4769-4792.	11.1	637
2	A Generalized Approach to the Modification of Solid Surfaces. Science, 2005, 308, 236-239.	6.0	500
3	Microdomain Orientation of PS-b-PMMA by Controlled Interfacial Interactions. Macromolecules, 2008, 41, 6431-6437.	2.2	211
4	Directed self-assembly of block copolymers in the extreme: guiding microdomains from the small to the large. Soft Matter, 2013, 9, 9059.	1.2	158
5	Directed Assembly of High Molecular Weight Block Copolymers: Highly Ordered Line Patterns of Perpendicularly Oriented Lamellae with Large Periods. ACS Nano, 2013, 7, 1952-1960.	7.3	113
6	Printable and Rewritable Full Block Copolymer Structural Color. Advanced Materials, 2017, 29, 1700084.	11.1	100
7	Block copolymer structural color strain sensor. NPG Asia Materials, 2018, 10, 328-339.	3.8	97
8	Nanoporous Block Copolymer Membranes for Ultrafiltration: A Simple Approach to Size Tunability. ACS Nano, 2014, 8, 11745-11752.	7.3	92
9	Preparation of TiO2 spheres with hierarchical pores via grafting polymerization and solâ€“gel process for dye-sensitized solar cells. Journal of Materials Chemistry, 2010, 20, 8521.	6.7	91
10	3D touchless multiorder reflection structural color sensing display. Science Advances, 2020, 6, eabb5769.	4.7	81
11	On the synergistic coupling properties of composite CdS/TiO₂nanoparticle arrays confined in nanopatterned hybrid thin films. Journal of Materials Chemistry, 2010, 20, 677-682.	6.7	80
12	Enhanced Performance of I₂â€Free Solidâ€State Dyeâ€Sensitized Solar Cells with Conductive Polymer up to 6.8%. Advanced Functional Materials, 2011, 21, 4633-4639.	7.8	76
13	Shallow and Deep Trap State Passivation for Low-Temperature Processed Perovskite Solar Cells. ACS Energy Letters, 2020, 5, 1396-1403.	8.8	75
14	Electrically Tunable Soft-Solid Block Copolymer Structural Color. ACS Nano, 2015, 9, 12158-12167.	7.3	67
15	Cylindrical Microdomain Orientation of PS-b-PMMA on the Balanced Interfacial Interactions: Composition Effect of Block Copolymers. Macromolecules, 2009, 42, 4902-4906.	2.2	65
16	Universal three-dimensional crosslinker for all-photopatterned electronics. Nature Communications, 2020, 11, 1520.	5.8	65
17	Phase Behavior of Polystyrene-b-poly(methyl methacrylate) Diblock Copolymer. Macromolecules, 2009, 42, 7897-7902.	2.2	51
18	Efficiency improvement of dye-sensitized solar cells using graft copolymer-templated mesoporous TiO2films as an interfacial layer. Journal of Materials Chemistry, 2011, 21, 1772-1779.	6.7	51

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19	Frankâ€“Kasper Phases Identified in PDMSâ€bâ€PTFEA Copolymers with High Conformational Asymmetry. Macromolecular Rapid Communications, 2019, 40, e1900259.	2.0	51
20	Artificial light-harvesting n-type porphyrin for panchromatic organic photovoltaic devices. Chemical Science, 2017, 8, 5095-5100.	3.7	50
21	Efficient Organic Photovoltaics Utilizing Nanoscale Heterojunctions in Sequentially Deposited Polymer/fullerene Bilayer. Scientific Reports, 2015, 5, 8373.	1.6	49
22	Phase Behavior and Ionic Conductivity of Lithium Perchlorate-Doped Polystyrene-b-poly(2-vinylpyridine) Copolymer. Macromolecules, 2011, 44, 6085-6093.	2.2	48
23	Fullerene-Free Organic Solar Cells with an Efficiency of 10.2% and an Energy Loss of 0.59 eV Based on a Thieno[3,4-c]Pyrrole-4,6-dione-Containing Wide Band Gap Polymer Donor. ACS Applied Materials & Interfaces, 2017, 9, 32939-32945.	4.0	48
24	Transition Behavior of Block Copolymer Thin Films on Preferential Surfaces. Macromolecules, 2008, 41, 9140-9145.	2.2	45
25	Improved Processability and Efficiency of Colloidal Quantum Dot Solar Cells Based on Organic Hole Transport Layers. Advanced Energy Materials, 2018, 8, 1800572.	10.2	45
26	Fluorine-Containing Styrenic Block Copolymers toward High Ï‡ and Perpendicular Lamellae in Thin Films. Macromolecules, 2018, 51, 7152-7159.	2.2	43
27	Dewetting of PMMA on PSâ˜Brush Substrates. Macromolecules, 2009, 42, 7919-7923.	2.2	41
28	Polymer Brush As a Facile Dielectric Surface Treatment for High-Performance, Stable, Soluble Acene-Based Transistors. Chemistry of Materials, 2010, 22, 5377-5382.	3.2	41
29	Thermoâ€Adaptive Block Copolymer Structural Color Electronics. Advanced Functional Materials, 2021, 31, 2008548.	7.8	39
30	Glass Transition Behavior of PS Films on Grafted PS Substrates. Macromolecules, 2010, 43, 9892-9898.	2.2	38
31	Molecular Tailoring of Poly(styrene-b-methyl methacrylate) Block Copolymer Toward Perpendicularly Oriented Nanodomains with Sub-10 nm Features. ACS Macro Letters, 2017, 6, 1386-1391.	2.3	37
32	Performance Optimization of Parallelâ€Like Ternary Organic Solar Cells through Simultaneous Improvement in Charge Generation and Transport. Advanced Functional Materials, 2019, 29, 1808731.	7.8	37
33	Highâ€Efficiency Solutionâ€Processed Twoâ€Terminal Hybrid Tandem Solar Cells Using Spectrally Matched Inorganic and Organic Photoactive Materials. Advanced Energy Materials, 2020, 10, 2001188.	10.2	37
34	Perpendicular orientation of microdomains in PS-b-PMMA thin films on the PS brushed substrates. Soft Matter, 2011, 7, 6920.	1.2	36
35	Molecular Engineering in Hole Transport Ïâ€Conjugated Polymers to Enable High Efficiency Colloidal Quantum Dot Solar Cells. Advanced Energy Materials, 2020, 10, 1902933.	10.2	36
36	Giant Gyroid and Templates from High-Molecular-Weight Block Copolymer Self-assembly. Scientific Reports, 2016, 6, 36326.	1.6	35

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37	Optimized Solvent Vapor Annealing for Long-Range Perpendicular Lamellae in PS-b-PMMA Films. Macromolecules, 2016, 49, 1722-1730.	2.2	35
38	Size control and registration of nano-structured thin films by cross-linkable units. Soft Matter, 2008, 4, 475.	1.2	34
39	Near-Infrared Harvesting Fullerene-Free All-Small-Molecule Organic Solar Cells Based on Porphyrin Donors. ACS Sustainable Chemistry and Engineering, 2018, 6, 5306-5313.	3.2	34
40	Substrate-Independent Lamellar Orientation in High-Molecular-Weight Polystyrene-b-poly(methyl methacrylate) Films: Neutral Solvent Vapor and Thermal Annealing Effect. Macromolecules, 2014, 47, 3969-3977.	2.2	32
41	PbS-Based Quantum Dot Solar Cells with Engineered Ï€-Conjugated Polymers Achieve 13% Efficiency. ACS Energy Letters, 2020, 5, 3452-3460.	8.8	32
42	Toward high efficiency organic photovoltaic devices with enhanced thermal stability utilizing P3HT-b-P3PHT block copolymer additives. Journal of Materials Chemistry A, 2016, 4, 18432-18443.	5.2	31
43	A versatile approach to the fabrication of TiO2 nanostructures with reverse morphology and mesoporous Ag/TiO2 thin films via cooperative PS-b-PEO self-assembly and a sol-gel process. Journal of Materials Chemistry, 2009, 19, 7245.	6.7	30
44	Nonvolatile, Multicolored Photothermal Writing of Block Copolymer Structural Color. Advanced Functional Materials, 2019, 29, 1904055.	7.8	30
45	Transition behavior of PS-b-PMMA films on the balanced interfacial interactions. Polymer, 2010, 51, 6313-6318.	1.8	29
46	Lamellar microdomain orientation and phase transition of polystyrene-b-poly(methyl methacrylate) films by controlled interfacial interactions. Soft Matter, 2012, 8, 3463.	1.2	29
47	Transition Behavior of Weakly Interacting PS-b-PMMA Films on Preferential Surfaces: A Direct Observation by GISAXS. Macromolecules, 2009, 42, 8385-8391.	2.2	27
48	An amphiphilic blockâ€“graft copolymer electrolyte: synthesis, nanostructure, and use in solid-state flexible supercapacitors. Journal of Materials Chemistry A, 2016, 4, 7848-7858.	5.2	27
49	Comb-type polymer-hybridized MXene nanosheets dispersible in arbitrary polar, nonpolar, and ionic solvents. Science Advances, 2022, 8, eabl5299.	4.7	27
50	Transition behavior of asymmetric polystyrene- b -poly(2-vinylpyridine) films: A stable hexagonally modulated layer structure. Polymer, 2015, 60, 32-39.	1.8	26
51	Effect of Grafting Density of Random Copolymer Brushes on Perpendicular Alignment in PS-b-PMMA Thin Films. Macromolecules, 2017, 50, 5858-5866.	2.2	26
52	Gyroid Structures in Solvent Annealed PS-b-PMMA Films: Controlled Orientation by Substrate Interactions. Macromolecules, 2017, 50, 5033-5041.	2.2	26
53	Multiscale Porous Interconnected Nanocolander Network with Tunable Transport Properties. Advanced Materials, 2014, 26, 7998-8003.	11.1	22
54	Thermally Stable Bulk Heterojunction Prepared by Sequential Deposition of Nanostructured Polymer and Fullerene. Polymers, 2017, 9, 456.	2.0	22

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55	Photonic Crystal Palette of Binary Block Copolymer Blends for Full Visible Structural Color Encryption. Advanced Functional Materials, 2022, 32, 2103697.	7.8	21
56	Nanoparticle-Induced Self-Assembly of Block Copolymers into Nanoporous Films at the Airâ€“Water Interface. ACS Nano, 2020, 14, 12203-12209.	7.3	20
57	Molecular Origin of the Induction Period in Photoinitiated Cationic Polymerization of Epoxies and Oxetanes. Macromolecules, 2019, 52, 1158-1165.	2.2	19
58	Orientation of an Amphiphilic Copolymer to a Lamellar Structure on a Hydrophobic Surface and Implications for CO 2 Capture Membranes. Angewandte Chemie - International Edition, 2019, 58, 1143-1147.	7.2	19
59	Nonmonotonic Glass Transition Temperature of Polymer Films Supported on Polymer Brushes. Macromolecules, 2018, 51, 4451-4461.	2.2	18
60	Rapid structural reorganization in thin films of block copolymer self-assembly. Soft Matter, 2012, 8, 3570.	1.2	17
61	Improving thermal stability of organic photovoltaics via constructing interdiffused bilayer of polymer/fullerene. Polymer, 2016, 103, 132-139.	1.8	16
62	Mesoscale Frankâ€“Kasper Crystal Structures from Dendron Assembly by Controlling Core Apex Interactions. Journal of the American Chemical Society, 2021, 143, 17548-17556.	6.6	16
63	Transition behavior and ionic conductivity of lithium perchlorate-doped polystyrene-b-poly(2-vinylpyridine). Polymer, 2009, 50, 3822-3827.	1.8	15
64	Irreversible Physisorption of PS-b-PMMA Copolymers on Substrates for Balanced Interfacial Interactions as a Versatile Surface Modification. ACS Macro Letters, 2019, 8, 519-524.	2.3	14
65	Balanced Interfacial Interactions for Fluoroacrylic Block Copolymer Films and Fast Electric Field Directed Assembly. Chemistry of Materials, 2020, 32, 9633-9641.	3.2	14
66	Interpenetration of chemically identical polymer onto grafted substrates. Polymer, 2015, 74, 70-75.	1.8	13
67	Single Step Process for Self-Assembled Block Copolymer Patterns via in Situ Annealing during Spin-Casting. ACS Macro Letters, 2015, 4, 656-660.	2.3	12
68	Glass Transition and Thermal Expansion Behavior of Polystyrene Films Supported on Polystyrene-Grafted Substrates. Macromolecules, 2016, 49, 5291-5296.	2.2	12
69	Preferential Wetting Effects on Order-to-Disorder Transition in Polystyrene-b-poly(2-vinylpyridine) Films: A Reconsideration on Thickness Dependence. Macromolecules, 2018, 51, 8550-8560.	2.2	12
70	Visualization of nonsingular defect enabling rapid control of structural color. Science Advances, 2022, 8, eabm5120.	4.7	12
71	Luminescent goldâ€“poly(thiophene) nanoaggregates prepared by one-step oxidative polymerization. Journal of Materials Chemistry, 2010, 20, 9770.	6.7	11
72	Microdomain expansion and transition behavior of PS-b-PMMA/PS homopolymers by SAXS analysis. Polymer, 2012, 53, 5163-5169.	1.8	11

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73	Thickness-dependent ordering of perpendicularly oriented lamellae in PS-b-PMMA thin films. Polymer, 2015, 74, 63-69.	1.8	11
74	Amphiphilic Graft Copolymer Nanospheres: From Colloidal Self-Assembly to CO₂ Capture Membranes. ACS Applied Materials & Interfaces, 2016, 8, 9454-9461.	4.0	11
75	Cumulative energy analysis of thermally-induced surface wrinkling of heterogeneously multilayered thin films. Soft Matter, 2018, 14, 704-710.	1.2	11
76	Multifunctional Amine-Containing PVA-g-POEM Graft Copolymer Membranes for CO₂ Capture. Macromolecules, 2018, 51, 5646-5655.	2.2	11
77	Symmetry-breaking in double gyroid block copolymer films by non-affine distortion. Applied Materials Today, 2021, 23, 101006.	2.3	11
78	Phase Behavior of a Weakly Interacting Polystyrene and Poly(nâ€hexyl methacrylate) System: Evidence for the Coexistence of UCST and LCST. Macromolecular Rapid Communications, 2009, 30, 469-474.	2.0	10
79	Luminescent iron oxide nanoparticles prepared by one-pot aphen-functionalization. Macromolecular Research, 2010, 18, 1109-1114.	1.0	10
80	Direct measurement of crosslinked surface layer in superabsorbent poly(acrylic acid). Materials Letters, 2018, 228, 33-36.	1.3	10
81	Immobilization of Conjugated Polymer Domains for Highly Stable Non-Fullerene-Based Organic Solar Cells. ACS Applied Materials & Interfaces, 2022, 14, 23474-23486.	4.0	10
82	Order-to-Disorder Transition of Lamella-Forming PS-b-P2VP Films Confined between the Preferential Surface and Neutral Substrate. Macromolecules, 2019, 52, 8672-8681.	2.2	9
83	Instability of Polystyrene Film and Thermal Behaviors Mediated by Unfavorable Silicon Oxide Interlayer. Macromolecules, 2019, 52, 7524-7530.	2.2	9
84	Orientation of an Amphiphilic Copolymer to a Lamellar Structure on a Hydrophobic Surface and Implications for CO 2 Capture Membranes. Angewandte Chemie, 2019, 131, 1155-1159.	1.6	9
85	Ordering and microdomain orientation in block copolymer films by thermal deprotection. Polymer, 2011, 52, 2677-2684.	1.8	8
86	Autophobic dewetting of polystyrenes on the substrates grafted with chemically identical polymers. Polymer Journal, 2016, 48, 503-507.	1.3	8
87	Lowâ€Powered Eâ€Switching Block Copolymer Structural Color Display with Organohydrogel Humidity Controller. Advanced Materials Technologies, 2022, 7, .	3.0	8
88	Transition Behavior of Hydrogen-Bonding-Mediated Block Copolymer Mixtures. Macromolecules, 2010, 43, 6120-6126.	2.2	7
89	Composition Fluctuation Inhomogeneity of Symmetric Diblock Copolymers: Ï‡N Effects at Order-to-Disorder Transition. Macromolecules, 2018, 51, 282-288.	2.2	7
90	Various Low-Symmetry Phases in High-Ï‡ and Conformationally Asymmetric PDMS-b-PTFEA Copolymers. Macromolecules, 2021, 54, 9351-9360.	2.2	7

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91	Block copolymer gyroids for nanophotonics: significance of lattice transformations. Nanophotonics, 2022, 11, 2583-2615.	2.9	7
92	Enthalpic and Volumetric Changes at Phase Transitions of Polystyrene-b-poly(alkyl) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 702 Td (	2.2	6
93	Optical Reflection from Unforbidden Diffraction of Block Copolymer Templated Gyroid Films. ACS Macro Letters, 2021, 10, 1609-1615.	2.3	6
94	Substrate interaction effects on order to disorder transition behavior in block copolymer films. Journal of Polymer Science, Part B: Polymer Physics, 2013, 51, 567-573.	2.4	5
95	Micron-thick, worm-like, organized TiO2 films prepared using polystyrene-b-poly(2-vinyl pyridine) block copolymer and preformed TiO2 for solid-state dye-sensitized solar cells. Electrochimica Acta, 2013, 105, 15-22.	2.6	5
96	Nanoporous Structures from PS-b-PMMA-b-PtBA Triblock Copolymer and Selective Modification for Ultrafiltration Membranes. ACS Applied Polymer Materials, 2019, 1, 584-592.	2.0	5
97	Lamellar Orientation and Transition Behavior of PS-b-P2VP Copolymers Supported on Physically Adsorbed Layers. Macromolecules, 2020, 53, 6213-6219.	2.2	4
98	In-depth probing of thermally-driven phase separation behavior of lamella-forming PS-b-PMMA films by infrared nanoscopy. Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy, 2022, 274, 121095.	2.0	4
99	Order-to-Disorder Transition of Cylinder-Forming Block Copolymer Films Confined within Neutral Interfaces. Macromolecules, 2021, 54, 11304-11315.	2.2	4
100	Microdomain homogeneity evaluation of perpendicular lamellar structures in block copolymer films: X-ray scattering and IR nanospectroscopy analyses. Polymer Testing, 2021, 104, 107409.	2.3	3
101	Ordering and Orientation of Giant Nanostructures from High-Molecular-Weight Block Copolymer via Solvent Vapor Annealing Process. Journal of Photopolymer Science and Technology = [Fotoporima Konwakai Shi], 2018, 31, 479-482.	0.1	2
102	Ultra-selective ferric ion-complexed membranes composed of water-based zwitterionic comb copolymers. Journal of Materials Chemistry A, 2019, 7, 20847-20853.	5.2	2
103	P (VDFâ€•co â€CTFE)â€•g â€P2VP amphiphilic graft copolymers: Synthesis, structure, and permeation properties. Polymers for Advanced Technologies, 2019, 30, 2707-2720.	1.6	2
104	Quantum Dot Solar Cells: Molecular Engineering in Hole Transport Ï€â€Conjugated Polymers to Enable High Efficiency Colloidal Quantum Dot Solar Cells (Adv. Energy Mater. 8/2020). Advanced Energy Materials, 2020, 10, 2070035.	10.2	2
105	Solar Cells: Enhanced Performance of I2-Free Solid-State Dye-Sensitized Solar Cells with Conductive Polymer up to 6.8% (Adv. Funct. Mater. 24/2011). Advanced Functional Materials, 2011, 21, 4698-4698.	7.8	1
106	Liquid adsorption at surfaces patterned with cylindrical nano-cavities. Soft Matter, 2013, 9, 10550.	1.2	1
107	Side-Chain Fluorination Effects on Morphological Behavior of PS-b-PtBMA: Disorder to Order Structures. Journal of Photopolymer Science and Technology = [Fotoporima Konwakai Shi], 2019, 32, 401-406.	0.1	1
108	Photonic Crystal Palette of Binary Block Copolymer Blends for Full Visible Structural Color Encryption (Adv. Funct. Mater. 1/2022). Advanced Functional Materials, 2022, 32, .	7.8	1

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109	Information Storage: Nonvolatile, Multicolored Photothermal Writing of Block Copolymer Structural Color (Adv. Funct. Mater. 42/2019). Advanced Functional Materials, 2019, 29, 1970295.	7.8	0
110	Ternary Organic Solar Cells: Performance Optimization of Parallelâ€Like Ternary Organic Solar Cells through Simultaneous Improvement in Charge Generation and Transport (Adv. Funct. Mater. 14/2019). Advanced Functional Materials, 2019, 29, 1970093.	7.8	0
111	Stacked Layer to Gyroid Structures in Partially Fluorinated PS-b-PtBMA Copolymer Films. Journal of Photopolymer Science and Technology = [Fotoporima Konwakai Shi], 2020, 33, 523-528.	0.1	0