Mark Matsen

List of Publications by Year
in descending order

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114 papers	11,654 citations	41323 49 h-index	26591 107 g-index
116 all docs	116 docs citations	116 times ranked	4709 citing authors

#	Article	IF	Citations
1	Unifying Weak- and Strong-Segregation Block Copolymer Theories. Macromolecules, 1996, 29, 1091-1098.	2.2	1,636
2	Stable and unstable phases of a diblock copolymer melt. Physical Review Letters, 1994, 72, 2660-2663.	2.9	1,236
3	Predicting the Mesophases of Copolymer-Nanoparticle Composites. Science, 2001, 292, 2469-2472.	6.0	701
4	The standard Gaussian model for block copolymer melts. Journal of Physics Condensed Matter, 2002, 14, R21-R47.	0.7	554
5	Origins of Complex Self-Assembly in Block Copolymers. Macromolecules, 1996, 29, 7641-7644.	2.2	495
6	Block copolymer microstructures in the intermediate-segregation regime. Journal of Chemical Physics, 1997, 106, 2436-2448.	1.2	440
7	Thin films of block copolymer. Journal of Chemical Physics, 1997, 106, 7781-7791.	1.2	400
8	Equilibrium behavior of symmetric ABA triblock copolymer melts. Journal of Chemical Physics, 1999, 111, 7139-7146.	1.2	383
9	Effect of Architecture on the Phase Behavior of AB-Type Block Copolymer Melts. Macromolecules, 2012, 45, 2161-2165.	2.2	382
10	Block Copolymer-Directed Assembly of Nanoparticles:Â Forming Mesoscopically Ordered Hybrid Materials. Macromolecules, 2002, 35, 1060-1071.	2.2	279
11	Stabilizing New Morphologies by Blending Homopolymer with Block Copolymer. Physical Review Letters, 1995, 74, 4225-4228.	2.9	258
12	Conformationally asymmetric block copolymers. Journal of Polymer Science, Part B: Polymer Physics, 1997, 35, 945-952.	2.4	207
13	Coreâ^'Shell Gyroid Morphology in a Poly(isoprene-block-styrene-block-dimethylsiloxane) Triblock Copolymer. Journal of the American Chemical Society, 1999, 121, 8457-8465.	6.6	194
14	Microphase Separation in Starblock Copolymer Melts. Macromolecules, 1994, 27, 6761-6767.	2.2	145
15	Bottlebrush Block Polymers: Quantitative Theory and Experiments. ACS Nano, 2015, 9, 12233-12245.	7.3	141
16	Lamellar phase of a symmetric triblock copolymer. Macromolecules, 1994, 27, 187-192.	2.2	136
17	Autophobic dewetting of homopolymer on a brush and entropic attraction between opposing brushes in a homopolymer matrix. Journal of Chemical Physics, 2001, 115, 2794-2804.	1.2	130
18	Polydispersity-Induced Macrophase Separation in Diblock Copolymer Melts. Physical Review Letters, 2007, 99, 148304.	2.9	129

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19	Self-assembly of block copolymers. Current Opinion in Colloid and Interface Science, 1996, 1, 329-336.	3.4	123
20	Fast and accurate SCFT calculations for periodic block-copolymer morphologies using the spectral method with Anderson mixing. European Physical Journal E, 2009, 30, 361-9.	0.7	117
21	Cylinderâ†"GyroidEpitaxial Transitions in Complex Polymeric Liquids. Physical Review Letters, 1998, 80, 4470-4473.	2.9	113
22	Isotropic Lifshitz Behavior in Block Copolymer-Homopolymer Blends. Physical Review Letters, 1995, 75, 4429-4432.	2.9	112
23	Universality of Block Copolymer Melts. Physical Review Letters, 2014, 113, 068302.	2.9	102
24	Melts of semiflexible diblock copolymer. Journal of Chemical Physics, 1996, 104, 7758-7764.	1.2	98
25	Self-assembly of block copolymers in thin films. Current Opinion in Colloid and Interface Science, 1998, 3, 40-47.	3.4	95
26	Particle Distributions in a Block Copolymer Nanocomposite. Macromolecules, 2008, 41, 1853-1860.	2.2	94
27	Bridging and looping in multiblock copolymer melts. Journal of Chemical Physics, 1995, 102, 3884-3887.	1.2	92
28	Efficiency of pseudo-spectral algorithms with Anderson mixing for the SCFT of periodic block-copolymer phases. European Physical Journal E, 2011, 34, 110.	0.7	88
29	Microphase-Separation Behavior of Triblock Copolymer Melts. Comparison with Diblock Copolymer Melts. Macromolecules, 2000, 33, 5124-5130.	2.2	87
30	Interaction between Polymer-Grafted Particles. Macromolecules, 2008, 41, 4435-4443.	2.2	87
31	Immiscibility of large and small symmetric diblock copolymers. Journal of Chemical Physics, 1995, 103, 3268-3271.	1.2	76
32	One-Component Approximation for Binary Diblock Copolymer Blends. Macromolecules, 1995, 28, 7298-7300.	2.2	76
33	Effect of large degrees of polydispersity on strongly segregated block copolymers. European Physical Journal E, 2006, 21, 199-207.	0.7	76
34	Theory of Polydisperse Block Copolymer Melts: Beyond the Schulzâ^'Zimm Distribution. Macromolecules, 2008, 41, 4531-4533.	2.2	71
35	Repulsion Exerted on a Spherical Particle by a Polymer Brush. Macromolecules, 2008, 41, 246-252.	2.2	69
36	Cylinderâ†"sphere epitaxial transitions in block copolymer melts. Journal of Chemical Physics, 2001, 114, 8165-8173.	1.2	66

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37	Electric Field Alignment in Thin Films of Cylinder-Forming Diblock Copolymer. Macromolecules, 2006, 39, 5512-5520.	2.2	65
38	Microphase Separation in Poly(oxyethylene)â˜Poly(oxybutylene) Diblock Copolymers. Macromolecules, 1998, 31, 8110-8116.	2.2	63
39	Fluctuation effects in block copolymer melts. Journal of Chemical Physics, 2003, 118, 7700.	1.2	62
40	Effective interaction between monolayers of block copolymer compatiblizer in a polymer blend. Journal of Chemical Physics, 2000, 112, 6863-6872.	1.2	59
41	Orderâ˜Disorder Transition in Poly(oxyethylene)â˜Poly(oxybutylene) Diblock Copolymers. Macromolecules, 1996, 29, 6212-6221.	2.2	58
42	Positioning Janus Nanoparticles in Block Copolymer Scaffolds. Physical Review Letters, 2009, 102, 078303.	2.9	56
43	Monte Carlo phase diagram for diblock copolymer melts. European Physical Journal E, 2010, 32, 255-264.	0.7	54
44	Crystallization in block copolymer melts: Small soft structures that template larger hard structures. Journal of Chemical Physics, 2001, 114, 5425-5431.	1.2	53
45	Manipulating the ABCs of self-assembly via low-Ï‡ block polymer design. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 6462-6467.	3.3	53
46	Monte Carlo phase diagram for diblock copolymer melts. Journal of Chemical Physics, 2006, 124, 024904.	1.2	52
47	Ordering in Blends of Diblock Copolymers. Macromolecules, 1998, 31, 3498-3508.	2.2	51
48	Improving Polymeric Microemulsions with Block Copolymer Polydispersity. Physical Review Letters, 2000, 85, 670-673.	2.9	51
49	New Fast SCFT Algorithm Applied to Binary Diblock Copolymer/Homopolymer Blends. Macromolecules, 2003, 36, 9647-9657.	2.2	51
50	Self-Consistent Field Theory for Melts of Low-Molecular-Weight Diblock Copolymer. Macromolecules, 2012, 45, 8502-8509.	2.2	51
51	Field theoretic approach for block polymer melts: SCFT and FTS. Journal of Chemical Physics, 2020, 152, 110901.	1.2	48
52	Stability of a Block-Copolymer Lamella in a Strong Electric Field. Physical Review Letters, 2005, 95, 258302.	2.9	45
53	Self-consistent field theory for diblock copolymers grafted to a sphere. Soft Matter, 2011, 7, 5128.	1.2	41
54	Domain Bridging in Thermoplastic Elastomers of Star Block Copolymer. Macromolecules, 2017, 50, 1681-1687.	2.2	41

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55	Droplets of structured fluid on a flat substrate. Soft Matter, 2009, 5, 2889.	1.2	40
56	Self-Assembly of ABC Bottlebrush Triblock Terpolymers with Evidence for Looped Backbone Conformations. Macromolecules, 2018, 51, 7178-7185.	2.2	40
57	Structure, Stability, and Reorganization of 0.5 L₀ Topography in Block Copolymer Thin Films. ACS Nano, 2016, 10, 10152-10160.	7.3	38
58	Monte Carlo Field-Theoretic Simulations for Melts of Symmetric Diblock Copolymer. Macromolecules, 2013, 46, 8037-8045.	2.2	37
59	Droplet Shape of an Anisotropic Liquid. Physical Review Letters, 2006, 97, 204502.	2.9	36
60	Melt brushes of diblock copolymer. European Physical Journal E, 2009, 29, 219-227.	0.7	36
61	Field-Theoretic Simulation of Block Copolymers at Experimentally Relevant Molecular Weights. Macromolecules, 2015, 48, 9071-9080.	2.2	35
62	Entropic segregation of short polymers to the surface of a polydisperse melt. European Physical Journal E, 2017, 40, 85.	0.7	35
63	Non-equilibrium phase behavior of diblock copolymer melts and binary blends in the intermediate segregation regime. , 1999, 37, 2229-2238.		33
64	Investigating the dominant corrections to the strong-stretching theory for dry polymeric brushes. Journal of Chemical Physics, 2004, 121, 1938-1948.	1.2	33
65	Undulation instability in block-copolymer lamellae subjected to a perpendicular electric field. Soft Matter, 2006, 2, 1048.	1.2	33
66	Effects of polydispersity on the order-disorder transition of diblock copolymer melts. European Physical Journal E, 2008, 27, 323-333.	0.7	33
67	Architectural Effect on the Surface Tension of an ABA Triblock Copolymer Melt. Macromolecules, 2010, 43, 1671-1674.	2.2	32
68	Converting the nanodomains of a diblock-copolymer thin film from spheres to cylinders with an external electric field. Journal of Chemical Physics, 2006, 124, 074906.	1.2	31
69	Finite-stretching corrections to the Milner-Witten-Cates theory for polymer brushes. European Physical Journal E, 2007, 23, 135-144.	0.7	30
70	Segregation of chain ends to the surface of a polymer melt. European Physical Journal E, 2014, 37, 33.	0.7	30
71	Comparison of A-block polydispersity effects on BAB triblock and AB diblock copolymer melts. European Physical Journal E, 2013, 36, 9857.	0.7	29
72	Universality between Experiment and Simulation of a Diblock Copolymer Melt. Physical Review Letters, 2016, 117, 217801.	2.9	29

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73	Detection of Surface Enrichment Driven by Molecular Weight Disparity in Virtually Monodisperse Polymers. ACS Macro Letters, 2018, 7, 487-492.	2.3	29
74	Simple and Accurate Calibration of the Floryâ€“Huggins Interaction Parameter. Macromolecules, 2020, 53, 9973-9982.	2.2	28
75	Instability of the Microemulsion Channel in Block Copolymer-Homopolymer Blends. Physical Review Letters, 2020, 125, 117801.	2.9	26
76	Field-theoretic simulations of bottlebrush copolymers. Journal of Chemical Physics, 2018, 149, 184901.	1.2	24
77	Finite- N effects for ideal polymer chains near a flat impenetrable wall. European Physical Journal E, 2009, 29, 107-115.	0.7	23
78	Lateral Phase Separation in Grafted Diblock Copolymer Films. Macromolecules, 2010, 43, 8177-8184.	2.2	22
79	Step Edges in Thin Films of Lamellar-Forming Diblock Copolymer. Macromolecules, 2012, 45, 9531-9538.	2.2	21
80	Testing the Universality of Entropic Segregation at Polymer Surfaces. Macromolecules, 2018, 51, 1242-1247.	2.2	21
81	Computationally Efficient Field-Theoretic Simulations for Block Copolymer Melts. Macromolecules, 2019, 52, 8840-8848.	2.2	21
82	Calibration of the Flory-Huggins interaction parameter in field-theoretic simulations. Journal of Chemical Physics, 2019, 150, 174902.	1.2	20
83	Coexistence of Polymeric Microemulsion with Homopolymer-Rich Phases. Macromolecules, 2021, 54, 1329-1337.	2.2	19
84	Fluctuation effects in blends of A + B homopolymers with AB diblock copolymer. Journal of Chemical Physics, 2018, 148, 204907.	1.2	18
85	Scaling behavior of a brushâ€“homopolymer interface in the limit of high grafting density. Journal of Chemical Physics, 2005, 122, 144904.	1.2	17
86	Self-Consistent Field Theory and Its Applications. , 0, , 87-178.		17
87	Structure Variation and Evolution in Microphase-Separated Grafted Diblock Copolymer Films. Macromolecules, 2011, 44, 8527-8536.	2.2	17
88	Compression of polyelectrolyte brushes in a salt-free theta solvent. European Physical Journal E, 2011, 34, 45.	0.7	17
89	Critical Point of Symmetric Binary Homopolymer Blends. Macromolecules, 2016, 49, 6116-6125.	2.2	17
90	Testing strong-segregation theory against self-consistent-field theory for block copolymer melts. Journal of Chemical Physics, 2001, 114, 10528-10530.	1.2	16

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91	Effect of Chain Tilt on the Interaction between Brush-Coated Colloids. Macromolecules, 2005, 38, 4525-4530.	2.2	16
92	Compression of Polymer Brushes: Quantitative Comparison of Self-Consistent Field Theory with Experiment. Macromolecules, 2009, 42, 3430-3432.	2.2	15
93	Strong-segregation limit of the self-consistent field theory for diblock copolymer melts. European Physical Journal E, 2010, 33, 297-306.	0.7	15
94	Continuous Thermodynamic Integration in Fieldâ€Theoretic Simulations of Structured Polymers. Macromolecular Theory and Simulations, 2017, 26, 1700036.	0.6	15
95	Field-Theoretic Simulations for Block Copolymer Melts Using the Partial Saddle-Point Approximation. Polymers, 2021, 13, 2437.	2.0	15
96	Kinetics of layer hopping in a diblock copolymer lamellar phase. European Physical Journal E, 2008, 27, 407-411.	0.7	13
97	Fluctuation correction for the orderâ€“disorder transition of diblock copolymer melts. Journal of Chemical Physics, 2021, 154, 124902.	1.2	13
98	Morphology Induced Spinodal Decomposition at the Surface of Symmetric Diblock Copolymer Films. ACS Macro Letters, 2013, 2, 441-445.	2.3	11
99	Fluctuation correction for the critical transition of symmetric homopolymer blends. Journal of Chemical Physics, 2017, 147, 044905.	1.2	11
100	Calibration of a lattice model for high-molecular-weight block copolymer melts. Journal of Chemical Physics, 2019, 150, 204906.	1.2	11
101	Effect of chain stiffness on the entropic segregation of chain ends to the surface of a polymer melt. Journal of Chemical Physics, 2019, 150, 014904.	1.2	11
102	Microphase separation in oxyethylene/oxybutylene copolymers with diblock and triblock architectures. Macromolecular Rapid Communications, 2000, 21, 964-967.	2.0	10
103	Effect of salt on the compression of polyelectrolyte brushes in a theta solvent. European Physical Journal E, 2012, 35, 13.	0.7	10
104	Universality of Entropic Surface Segregation from Athermal Polymer Blends Due to Conformational Asymmetry. Macromolecules, 2022, 55, 1120-1126.	2.2	10
105	Comment on â€œAttraction between Nanoparticles Induced by End-Grafted Homopolymers in Good Solventâ€• Physical Review Letters, 2005, 95, 069801.	2.9	9
106	Segregation of chain ends to the surface of a polymer melt: Effect of surface profile versus chain discreteness. European Physical Journal E, 2016, 39, 78.	0.7	9
107	Spontaneous Tilting Transition in Liquid-Crystalline Polymer Brushes. Macromolecules, 2019, 52, 6988-6997.	2.2	6
108	Quantized Contact Angles in the Dewetting of a Structured Liquid. Physical Review Letters, 2014, 112, 068303.	2.9	5

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109	Surface Segregation in Athermal Polymer Blends Due to Conformational Asymmetry. Macromolecules, 2021, 54, 10100-10109.	2.2	5
110	Entropic surface segregation from athermal polymer blends: Polymer flexibility vs bulkiness. Journal of Chemical Physics, 2022, 156, 184901.	1.2	5
111	Boundary Tension Between Coexisting Phases of a Block Copolymer Blend. Macromolecules, 2015, 48, 2840-2848.	2.2	3
112	Confinement effects on the miscibility of block copolymer blends. European Physical Journal E, 2016, 39, 43.	0.7	3
113	Self-Assembly of ABC Bottlebrush Triblock Terpolymers with Evidence for Looped Backbone Conformations. Macromolecules, 2018, 51, .	2.2	3
114	Entropic Surface Segregation from Athermal Polymer Blends of Slim and Bulky Polymers. Macromolecules, 2022, 55, 6286-6292.	2.2	0