Gary S Grest

List of Publications by Year
in descending order

147 papers	14,442 citations	34105 52 h-index	19190 118 g-index
148 all docs	148 docs citations	148 times ranked	8234 citing authors

#	Article	IF	Citations
1	Composite entanglement topology and extensional rheology of symmetric ring-linear polymer blends. Journal of Rheology, 2022, 66, 49-65.	2.6	20
2	Overlap Concentration of Sodium Polystyrene Sulfonate in Solution. ACS Macro Letters, 2022, 11, 217-222.	4.8	3
3	Flow and arrest in stressed granular materials. Soft Matter, 2022, 18, 735-743.	2.7	5
4	Effects of Ionic Group Distribution on the Structure and Dynamics of Amorphous Polymer Melts. Macromolecules, 2022, 55, 217-223.	4.8	6
5	Nonlinear Elongation Flows in Associating Polymer Melts: From Homogeneous to Heterogeneous Flow. Physical Review X, 2022, 12, .	8.9	7
6	Superstretchable Elastomer from Cross-linked Ring Polymers. Physical Review Letters, 2022, 128, .	7.8	13
7	Viscometric flow of dense granular materials under controlled pressure and shear stress. Journal of Fluid Mechanics, 2021, 907, .	3.4	13
8	Effects of interaction strength of associating groups on linear and star polymer dynamics. Journal of Chemical Physics, 2021, 154, 074903.	3.0	7
9	Interfacial Response and Structural Adaptation of Structured Polyelectrolyte Thin Films. Macromolecules, 2021, 54, 2892-2898.	4.8	0
10	Nonlinear Shear Rheology of Entangled Polymer Rings. Macromolecules, 2021, 54, 2811-2827.	4.8	51
11	Stress Relaxation of Comb Polymer Melts. Tribology Letters, 2021, 69, 1.	2.6	1
12	Diffusion of Thin Nanorods in Polymer Melts. Macromolecules, 2021, 54, 7051-7059.	4.8	20
13	Jamming of bidisperse frictional spheres. Physical Review Research, 2021, 3, .	3.6	10
14	Overlap Concentration in Salt-Free Polyelectrolyte Solutions. Macromolecules, 2021, 54, 10068-10073.	4.8	5
15	Shear Is Not Always Simple: Rate-Dependent Effects of Flow Type on Granular Rheology. Physical Review Letters, 2021, 127, 268003.	7.8	5
16	Viscoelastic Response of Dispersed Entangled Polymer Melts. Macromolecules, 2020, 53, 8400-8405.	4.8	5
17	Assembly of Polymer-Grafted Nanoparticles in Polymer Matrices. ACS Nano, 2020, 14, 13491-13499.	14.6	16
18	Threadingâ€“Unthreading Transition of Linear-Ring Polymer Blends in Extensional Flow. ACS Macro Letters, 2020, 9, 1452-1457.	4.8	36

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19	Effects of Tethered Polymers on Dynamics of Nanoparticles in Unentangled Polymer Melts. Macromolecules, 2020, 53, 6898-6906.	4.8	20
20	Granular packings with sliding, rolling, and twisting friction. Physical Review E, 2020, 102, 032903.	2.1	31
21	Evolution of internal granular structure at the flow-arrest transition. Granular Matter, 2020, 22, 1.	2.2	5
22	Topological Linking Drives Anomalous Thickening of Ring Polymers in Weak Extensional Flows. Physical Review Letters, 2020, 124, 027801.	7.8	53
23	Resolving Properties of Entangled Polymers Melts Through Atomistic Derived Coarse-Grained Models. , 2020, , 1397-1410.		4
24	Mechanics of Gold Nanoparticle Superlattices at High Hydrostatic Pressures. Journal of Physical Chemistry C, 2019, 123, 17530-17538.	3.1	11
25	Brush-Like Polymers and Entanglements: From Linear Chains to Filaments. ACS Macro Letters, 2019, 8, 1328-1333.	4.8	11
26	Flow-Arrest Transitions in Frictional Granular Matter. Physical Review Letters, 2019, 122, 048003.	7.8	23
27	Stratification of drying particle suspensions: Comparison of implicit and explicit solvent simulations. Journal of Chemical Physics, 2019, 150, 224901.	3.0	24
28	Control of Stratification in Drying Particle Suspensions via Temperature Gradients. Langmuir, 2019, 35, 4296-4304.	3.5	17
29	Nanorheology of Entangled Polymer Melts. Physical Review Letters, 2018, 120, 057801.	7.8	34
30	Effect of shape and friction on the packing and flow of granular materials. Physical Review E, 2018, 98, .	2.1	42
31	Polymer Topology Effects on Dynamics of Comb Polymer Melts. Macromolecules, 2018, 51, 7621-7628.	4.8	13
32	Temperature response of soft ionizable polymer nanoparticles. Journal of Chemical Physics, 2018, 149, 084903.	3.0	1
33	Modeling pressure-driven assembly of polymer coated nanoparticles. AIP Conference Proceedings, 2018, , .	0.4	4
34	Stratification in Drying Films Containing Bidisperse Mixtures of Nanoparticles. Langmuir, 2018, 34, 7161-7170.	3.5	44
35	Effect of Chain Length Dispersity on the Mobility of Entangled Polymers. Physical Review Letters, 2018, 121, 057802.	7.8	19
36	Resolving Properties of Entangled Polymers Melts Through Atomistic Derived Coarse-Grained Models. , 2018, , 1-14.		0

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37	Nanoparticle Motion in Entangled Melts of Linear and Nonconcatenated Ring Polymers. Macromolecules, 2017, 50, 1749-1754.	4.8	61
38	Coarse-Grained Modeling of Polyethylene Melts: Effect on Dynamics. Journal of Chemical Theory and Computation, 2017, 13, 2890-2896.	5.3	47
39	Superfast assembly and synthesis of gold nanostructures using nanosecond low-temperature compression via magnetic pulsed power. Nature Communications, 2017, 8, 14778.	12.8	31
40	Soft nanoparticles: nano ionic networks of associated ionic polymers. Nanoscale, 2017, 9, 2117-2122.	5.6	4
41	Polymers at Liquid/Vapor Interface. ACS Macro Letters, 2017, 6, 1191-1195.	4.8	10
42	Structured Ionomer Thin Films at Water Interface: Molecular Dynamics Simulation Insight. Langmuir, 2017, 33, 11070-11076.	3.5	8
43	Structure and Dynamics of Ionic Block Copolymer Melts: Computational Study. Macromolecules, 2017, 50, 7388-7398.	4.8	6
44	Luminescent tunable polydots: Charge effects in confined geometry. Journal of Chemical Physics, 2017, 146, 244907.	3.0	2
45	Ordering nanoparticles with polymer brushes. Journal of Chemical Physics, 2017, 147, 224901.	3.0	16
46	Association of a multifunctional ionic block copolymer in a selective solvent. Journal of Chemical Physics, 2016, 145, 184903.	3.0	12
47	Communication: Polymer entanglement dynamics: Role of attractive interactions. Journal of Chemical Physics, 2016, 145, 141101.	3.0	61
48	End-anchored polymers in good solvents from the single chain limit to high anchoring densities. Journal of Chemical Physics, 2016, 145, 174904.	3.0	3
49	Crazing of nanocomposites with polymer-tethered nanoparticles. Journal of Chemical Physics, 2016, 145, 094902.	3.0	27
50	Dispersing Nanoparticles in a Polymer Film via Solvent Evaporation. ACS Macro Letters, 2016, 5, 694-698.	4.8	95
51	Resolving Dynamic Properties of Polymers through Coarse-Grained Computational Studies. Physical Review Letters, 2016, 116, 058302.	7.8	85
52	Cluster Morphology-Polymer Dynamics Correlations in Sulfonated Polystyrene Melts: Computational Study. Physical Review Letters, 2016, 116, 158001.	7.8	17
53	Dynamics in entangled polyethylene melts. European Physical Journal: Special Topics, 2016, 225, 1707-1722.	2.6	22
54	Conformation of ionizable poly Para phenylene ethynylene in dilute solutions. Journal of Polymer Science, Part B: Polymer Physics, 2016, 54, 582-588.	2.1	7

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55	Structure of Rigid Polymers Confined to Nanoparticles: Molecular Dynamics Simulations Insight. Langmuir, 2016, 32, 2102-2109.	3.5	9
56	Dynamics of Polydots: Soft Luminescent Polymeric Nanoparticles. Macromolecules, 2016, 49, 2399-2407.	4.8	6
57	Clustering effects in ionic polymers: Molecular dynamics simulations. Physical Review E, 2015, 92, 022601.	2.1	24
58	Ligand structure and mechanical properties of single-nanoparticle-thick membranes. Physical Review E, 2015, 91, 062403.	2.1	19
59	Solvent controlled ion association in structured copolymers: Molecular dynamics simulations in dilute solutions. Journal of Chemical Physics, 2015, 143, 124905.	3.0	4
60	Temperature effects on nanostructure and mechanical properties of single-nanoparticle thick membranes. Faraday Discussions, 2015, 181, 339-354.	3.2	12
61	Rouse mode analysis of chain relaxation in polymer nanocomposites. Soft Matter, 2015, 11, 4123-4132.	2.7	72
62	Coating thickness and coverage effects on the forces between silica nanoparticles in water. Journal of Chemical Physics, 2014, 140, 194904.	3.0	28
63	Healing of polymer interfaces: Interfacial dynamics, entanglements, and strength. Physical Review E, 2014, 90, 012602.	2.1	50
64	High Strength, Molecularly Thin Nanoparticle Membranes. Physical Review Letters, 2014, 113, 258301.	7.8	31
65	Phase Behavior of a Single Structured Ionomer Chain in Solution. Macromolecular Theory and Simulations, 2014, 23, 543-549.	1.4	6
66	Nanoparticle Diffusion in Polymer Nanocomposites. Physical Review Letters, 2014, 112, 108301.	7.8	157
67	Effects of Functional Groups and Ionization on the Structure of Alkanethiol-Coated Gold Nanoparticles. Langmuir, 2014, 30, 11075-11085.	3.5	54
68	Tensile Fracture of Welded Polymer Interfaces: Miscibility, Entanglements, and Crazing. Macromolecules, 2014, 47, 6982-6989.	4.8	59
69	Particle dynamics modeling methods for colloid suspensions. Computational Particle Mechanics, 2014, 1, 321-356.	3.0	124
70	Rouse Mode Analysis of Chain Relaxation in Homopolymer Melts. Macromolecules, 2014, 47, 6925-6931.	4.8	54
71	Assembly of responsive-shape coated nanoparticles at water surfaces. Nanoscale, 2014, 6, 5132.	5.6	34
72	Molecular dynamics simulations of evaporation-induced nanoparticle assembly. Journal of Chemical Physics, 2013, 138, 064701.	3.0	54

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73	Simulating the miscibility of nanoparticles and polymer melts. Soft Matter, 2013, 9, 5417.	2.7	46
74	Internal Correlations and Stability of Polydots, Soft Conjugated Polymeric Nanoparticles. ACS Macro Letters, 2013, 2, 700-704.	4.8	13
75	Structure and diffusion of nanoparticle monolayers floating at liquid/vapor interfaces: A molecular dynamics study. Journal of Chemical Physics, 2012, 136, 214702.	3.0	78
76	Rheology of Ring Polymer Melts: From Linear Contaminants to Ring-Linear Blends. Physical Review Letters, 2012, 108, 038301.	7.8	179
77	No-slip boundary conditions and forced flow in multiparticle collision dynamics. Physical Review E, 2012, 86, 066703.	2.1	28
78	Effective interactions between grafted nanoparticles in a polymer matrix. Soft Matter, 2012, 8, 5002.	2.7	104
79	Universal Viscosity Behavior of Polymer Nanocomposites. Physical Review Letters, 2012, 109, 198301.	7.8	123
80	Fully Atomistic Simulations of the Response of Silica Nanoparticle Coatings to Alkane Solvents. Langmuir, 2012, 28, 17443-17449.	3.5	33
81	Evaporation of Lennard-Jones fluids. Journal of Chemical Physics, 2011, 134, 224704.	3.0	96
82	End grafted polymernanoparticles in a polymeric matrix: Effect of coverage and curvature. Soft Matter, 2011, 7, 1418-1425.	2.7	109
83	Conformational study of a single molecule of poly para phenylene ethynylenes in dilute solutions. Journal of Chemical Physics, 2011, 134, 244906.	3.0	19
84	Molecular dynamics simulation study of nonconcatenated ring polymers in a melt. I. Statics. Journal of Chemical Physics, 2011, 134, 204904.	3.0	284
85	Molecular dynamics simulation study of nonconcatenated ring polymers in a melt. II. Dynamics. Journal of Chemical Physics, 2011, 134, 204905.	3.0	210
86	Effective potentials between nanoparticles in suspension. Journal of Chemical Physics, 2011, 134, 144902.	3.0	28
87	Spontaneous Asymmetry of Coated Spherical Nanoparticles in Solution and at Liquid-Vapor Interfaces. Physical Review Letters, 2010, 104, 235501.	7.8	106
88	Mesoscale hydrodynamics via stochastic rotation dynamics: Comparison with Lennard-Jones fluid. Journal of Chemical Physics, 2010, 132, 174106.	3.0	40
89	First-principles and classical molecular dynamics simulation of shocked polymers. Physical Review B, 2010, 81, .	3.2	261
90	Shear rheology of extended nanoparticles. Physical Review E, 2010, 82, 010201.	2.1	13

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91	Effect of particle shape and charge on bulk rheology of nanoparticle suspensions. Journal of Chemical Physics, 2010, 132, .	3.0	52
92	Stress Relaxation in Entangled Polymer Melts. Physical Review Letters, 2010, 105, 068301.	7.8	94
93	Shear thinning of nanoparticle suspensions. Physical Review E, 2009, 79, 021401.	2.1	24
94	Forces between functionalized silica nanoparticles in solution. Physical Review E, 2009, 79, 050501.	2.1	53
95	Accurate and efficient methods for modeling colloidal mixtures in an explicit solvent using molecular dynamics. Computer Physics Communications, 2008, 179, 320-329.	7.5	70
96	Water in Nanoconfinement between Hydrophilic Self-Assembled Monolayers. Langmuir, 2008, 24, 5209-5212.	3.5	49
97	Liquid-vapor coexistence for nanoparticles of various size. Journal of Chemical Physics, 2008, 129, 164504.	3.0	17
98	Connectivity and Entanglement Stress Contributions in Strained Polymer Networks. Macromolecules, 2008, 41, 4920-4928.	4.8	50
99	Viscoelasticity and primitive path analysis of entangled polymer liquids: From F-actin to polyethylene. Journal of Chemical Physics, 2008, 128, 044902.	3.0	81
100	Star Polymers: Experiment, Theory, and Simulation. Advances in Chemical Physics, 2007, , 67-163.	0.3	154
101	Entanglements of an End-Grafted Polymer Brush in a Polymeric Matrix. Macromolecules, 2007, 40, 8389-8395.	4.8	68
102	Permanent Set of Cross-Linking Networks:Â Comparison of Theory with Molecular Dynamics Simulations. Macromolecules, 2006, 39, 5521-5530.	4.8	50
103	Liquid Nanodroplets Spreading on Chemically Patterned Surfaces. Langmuir, 2006, 22, 4745-4749.	3.5	27
104	Dissolutive wetting of Ag on Cu: A molecular dynamics simulation study. Acta Materialia, 2005, 53, 3163-3177.	7.9	71
105	Entangled polymer systems. Computer Physics Communications, 2005, 169, 75-81.	7.5	36
106	Surface Wetting of Liquid Nanodroplets: Droplet-Size Effects. Physical Review Letters, 2005, 95, 107801.	7.8	60
107	Identifying the primitive path mesh in entangled polymer liquids. Journal of Polymer Science, Part B: Polymer Physics, 2005, 43, 917-933.	2.1	223
108	Diverse Spreading Behavior of Binary Polymer Nanodroplets. Langmuir, 2005, 21, 7959-7963.	3.5	8

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109	High temperature wetting: Insights from atomistic simulations. Current Opinion in Solid State and Materials Science, 2005, 9, 174-180.	11.5	17
110	Anomalous mixing behavior of polyisobutylene/polypropylene blends: Molecular dynamics simulation study. Journal of Chemical Physics, 2004, 120, 8883-8886.	3.0	36
111	Rheology and Microscopic Topology of Entangled Polymeric Liquids. Science, 2004, 303, 823-826.	12.6	670
112	Molecular dynamics simulation of solventâ€“polymer interdiffusion: Fickian diffusion. Journal of Chemical Physics, 2004, 120, 2989-2995.	3.0	57
113	Atomistic Simulations of End-Linked Poly(dimethylsiloxane) Networks:Â Structure and Relaxation. Macromolecules, 2004, 37, 3857-3864.	4.8	135
114	Strain-Dependent Localization, Microscopic Deformations, and Macroscopic Normal Tensions in Model Polymer Networks. Physical Review Letters, 2004, 93, 257801.	7.8	53
115	Equilibration of long chain polymer melts in computer simulations. Journal of Chemical Physics, 2003, 119, 12718-12728.	3.0	465
116	Precursor Film Controlled Wetting of Pb on Cu. Physical Review Letters, 2003, 91, 236102.	7.8	86
117	Molecular dynamics simulations of reactive wetting. Scripta Materialia, 2002, 47, 393-398.	5.2	34
118	Surface-tethered chains entangled in a polymer melt: Effects on adhesion dynamics. Physical Review E, 2001, 64, 050802.	2.1	32
119	Stressâ€“strain relation of entangled polymer networks. Journal of Non-Crystalline Solids, 2000, 274, 139-146.	3.1	70
120	Capillary waves at liquid-vapor interfaces: A molecular dynamics simulation. Physical Review E, 1999, 60, 6708-6713.	2.1	127
121	Excluded-Volume Effects in Polymer Solutions. 2. Comparison of Experimental Results with Numerical Simulation Data. Macromolecules, 1999, 32, 3510-3517.	4.8	59
122	Statics and Dynamics of Symmetric Diblock Copolymers:Â A Molecular Dynamics Study. Macromolecules, 1999, 32, 595-609.	4.8	119
123	Intracrystalline Diffusion of Linear and Branched Alkanes in the Zeolites TON, EUO, and MFI. Journal of Physical Chemistry B, 1999, 103, 4949-4959.	2.6	66
124	Influence of intracrystalline diffusion in shape selective catalytic test reactions. Catalysis Letters, 1998, 56, 95-104.	2.6	43
125	Dynamics of n-alkanes: Comparison to Rouse model. Journal of Chemical Physics, 1998, 109, 798-805.	3.0	119
126	Dynamics of linear and branched alkane melts: Molecular dynamics test of theory for long time dynamics. Journal of Chemical Physics, 1998, 108, 9155-9167.	3.0	25

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127	Viscosity calculations ofn-alkanes by equilibrium molecular dynamics. Journal of Chemical Physics, 1997, 106, 9327-9336.	3.0	213
128	Osmotic pressure and viscoelastic shear moduli of concentrated emulsions. Physical Review E, 1997, 56, 3150-3166.	2.1	275
129	Molecular Dynamics Simulations of the Force between a Polymer Brush and an AFM Tip. Macromolecules, 1996, 29, 8282-8284.	4.8	40
130	Grafted polymer brushes in polymeric matrices. Journal of Chemical Physics, 1996, 105, 5532-5541.	3.0	106
131	Simulations of Polymer Blends and Interfaces. Materials Research Society Symposia Proceedings, 1996, 461, 129.	0.1	0
132	Simulations of Lubricants in Confined Geometries. Materials Research Society Symposia Proceedings, 1996, 464, 65.	0.1	0
133	Molecular dynamics of linear and branched alkanes: Simulations and nuclear magnetic resonance results. Journal of Chemical Physics, 1996, 105, 5208-5215.	3.0	40
134	Molecular dynamics of linear and branched alkanes. Journal of Chemical Physics, 1995, 103, 7156-7165.	3.0	164
135	Entanglement effects in model polymer networks. Macromolecular Symposia, 1995, 93, 53-67.	0.7	19
136	Structure and relaxation of endâ€linked polymer networks. Journal of Chemical Physics, 1994, 101, 8169-8192.	3.0	170
137	Structure of grafted polymeric brushes in solvents of varying quality: a molecular dynamics study. Macromolecules, 1993, 26, 3108-3117.	4.8	339
138	Coarsening in Two-Dimensional Soap Froths and the Large-Q Potts Model. Materials Research Society Symposia Proceedings, 1991, 237, 101.	0.1	3
139	Dynamics of entangled linear polymer melts:â€‰ A molecularâ€dynamics simulation. Journal of Chemical Physics, 1990, 92, 5057-5086.	3.0	3,331
140	Coarsening in the two-dimensional soap froth and the large-QPotts model: A detailed comparison. The Philosophical Magazine: Physics of Condensed Matter B, Statistical Mechanics, Electronic, Optical and Magnetic Properties, 1990, 62, 615-645.	0.6	148
141	Monte Carlo Simulations of the Chemical Potential and Free Energy for Trimer and Hexamer Rings. Molecular Simulation, 1989, 2, 69-88.	2.0	1
142	Structure of a grafted polymer brush: a molecular dynamics simulation. Macromolecules, 1989, 22, 4054-4059.	4.8	311
143	What can we Learn from Molecular Dynamics Simulations of Macromolecular Liquids?. Materials Research Society Symposia Proceedings, 1989, 177, 77.	0.1	0
144	Phase diagram and dynamics of Yukawa systems. Journal of Chemical Physics, 1988, 88, 3286-3312.	3.0	635

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145	Molecular dynamics simulation for polymers in the presence of a heat bath. Physical Review A, 1986, 33, 3628-3631.	2.5	1,532
146	Temperature dependence of domain growth. Journal of Applied Physics, 1984, 55, 2432-2434.	2.5	9
147	Irreversibility of infinite range spin glasses. Journal of Applied Physics, 1984, 55, 1661-1663.	2.5	6