John G Curro

List of Publications by Citations

111 papers	4,578 citations	41 h-index	62 g-index
112 ext. papers	4,688 ext. citations	4.3 avg, IF	5.11 L-index

#	Paper	IF	Citations
111	Integral-equation theory of the structure of polymer melts. *Physical Review Letters*, **1987**, 58, 246-249	7.4	275
110	Equilibrium theory of polymer liquids: Linear chains. *Journal of Chemical Physics*, **1987**, 87, 1842-1846	3.9	201
109	Local structure of semiflexible polymer melts. *Macromolecules*, **1990**, 23, 3496-3505	5.5	171
108	Integral equation theory of the structure and thermodynamics of polymer blends. *Journal of Chemical Physics*, **1989**, 91, 5059-5081	3.9	136
107	A theoretical basis for viscoelastic relaxation of elastomers in the long-time limit. *Macromolecules*, **1983**, 16, 559-562	5.5	130
106	Theory of polymer melts: an integral equation approach. *Macromolecules*, **1987**, 20, 1928-1934	5.5	128
105	Diffusion model for volume recovery in glasses. *Macromolecules*, **1982**, 15, 1621-1626	5.5	121
104	Free volume and the kinetics of aging of polymer glasses. *Macromolecules*, **1984**, 17, 911-919	5.5	108
103	RISM theory of polymer liquids: Analytical results for continuum models of melts and alloys. *Chemical Physics*, **1990**, 149, 105-127	2.3	98
102	Integral equation theory of polymer melts: intramolecular structure, local order, and the correlation hole. *Macromolecules*, **1988**, 21, 3070-3081	5.5	96
101	A comparison between integral equation theory and molecular dynamics simulations of dense, flexible polymer liquids. *Journal of Chemical Physics*, **1989**, 91, 1357-1364	3.9	90
100	Local structure of polyethylene melts. *Journal of Chemical Physics*, **1991**, 94, 4659-4662	3.9	88
99	Reference interaction site model theory of polymeric liquids: Self-consistent formulation and nonideality effects in dense solutions and melts. *Journal of Chemical Physics*, **1992**, 96, 3211-3225	3.9	82
98	Conjectures on the glass transition of polymers in confined geometries. *Journal of Chemical Physics*, **2002**, 116, 9154-9157	3.9	78
97	A non-Gaussian theory of rubberlike elasticity based on rotational isomeric state simulations of network chain configurations. II. Bimodal poly(dimethylsiloxane) networks. *Journal of Chemical Physics*, **1984**, 80, 4521-4525	3.9	77
96	Microscopic theory of the structure, thermodynamics, and apparent chi parameter of polymer blends. *Physical Review Letters*, **1988**, 60, 809-812	7.4	65
95	Molecular Dynamics Simulations of Polymer Networks Undergoing Sequential Cross-Linking and Scission Reactions. *Macromolecules*, **2007**, 40, 131-139	5.5	64

94	Viscoelasticity of randomly crosslinked polymer networks. Relaxation of dangling chains. *Macromolecules*, **1985**, 18, 1157-1162	5.5	64
93	Density functional theory of simple polymers in a slit pore. I. Theory and efficient algorithm. *Journal of Chemical Physics*, **2000**, 112, 3090-3093	3.9	63
92	Computational Modeling of the Temperature-Induced Structural Changes of Tethered Poly(N-isopropylacrylamide) with Self-Consistent Field Theory. *Macromolecules*, **2005**, 38, 174-181	5.5	61
91	Equation of state of polymer melts: General formulation of a microscopic integral equation theory. *Journal of Chemical Physics*, **1988**, 89, 3342-3349	3.9	61
90	Self-consistent integral equation theory for polyolefins: Comparison to molecular dynamics simulations and x-ray scattering. *Journal of Chemical Physics*, **2001**, 114, 2847-2860	3.9	60
89	Mapping of Explicit Atom onto United Atom Potentials. *Macromolecules*, **1998**, 31, 9362-9368	5.5	59
88	A density functional theory for pair correlation functions in molecular liquids. *Journal of Chemical Physics*, **1994**, 101, 3205-3215	3.9	59
87	Mixing of Isotactic and Syndiotactic Polypropylenes in the Melt. *Macromolecules*, **2000**, 33, 9452-9463	5.5	55
86	Effect of Strain History on Stress and Permanent Set in Cross-Linking Networks: A Molecular Dynamics Study. *Macromolecules*, **2004**, 37, 5468-5473	5.5	54
85	Density functional theory for inhomogeneous polymer systems. II. Application to block copolymer thin films. *Journal of Chemical Physics*, **2002**, 117, 10398-10411	3.9	53
84	An integral equation theory of polymer blends: athermal mixtures. *Macromolecules*, **1990**, 23, 1402-1411	5.5	53
83	Role of intramolecular energy on polyolefin miscibility: Isotactic polypropylene/polyethylene blends. *Journal of Chemical Physics*, **2003**, 118, 914-924	3.9	52
82	Improved United Atom Force Field for Poly(dimethylsiloxane). *Macromolecules*, **2003**, 36, 2122-2129	5.5	51
81	The structure of a rotational isomeric state alkane melt near a hard wall. *Journal of Chemical Physics* , **1994**, 101, 9010-9015	3.9	51
80	Computer simulation of multiple chain systemsThe effect of density on the average chain dimensions. *Journal of Chemical Physics*, **1974**, 61, 1203-1207	3.9	48
79	Equation of state of polymer melts: Numerical results for athermal freely jointed chain fluids. *Journal of Chemical Physics*, **1988**, 89, 3350-3362	3.9	47
78	Connectivity and Entanglement Stress Contributions in Strained Polymer Networks. *Macromolecules*, **2008**, 41, 4920-4928	5.5	46
77	Microscopic equations of state of polyethylene: Hard-chain contribution to the pressure. *Journal of Chemical Physics*, **1993**, 98, 1635-1646	3.9	46

76	Permanent Set of Cross-Linking Networks: Comparison of Theory with Molecular Dynamics Simulations. *Macromolecules*, **2006**, 39, 5521-5530	5.5	43
75	Application of density functional theory to tethered polymer chains: Athermal systems. *Journal of Chemical Physics*, **2002**, 117, 2975-2986	3.9	43
74	Crystallization of polyethylene and polytetrafluoroethylene by density-functional methods. *Journal of Chemical Physics*, **1991**, 95, 9348-9366	3.9	43
73	Application of density functional theory to tethered polymer chains: Effect of intermolecular attractions. *Journal of Chemical Physics*, **2003**, 119, 555-564	3.9	42
72	Structure of Poly(dimethylsiloxane) Melts: Theory, Simulation, and Experiment. *Macromolecules*, **2002**, 35, 6455-6465	5.5	42
71	Theory for the Phase Behavior of Polyolefin Blends: Application to the Polyethylene/Isotactic Polypropylene Blend. *Macromolecules*, **1995**, 28, 6843-6853	5.5	42
70	Density functional theory for inhomogeneous polymer systems. I. Numerical methods. *Journal of Chemical Physics*, **2002**, 117, 10385-10397	3.9	40
69	Integral equation theory of polymer melts: density fluctuations, static structure factor, and comparison with incompressible and continuum limit models. *Macromolecules*, **1988**, 21, 3082-3087	5.5	40
68	Density functional theory of simple polymers in a slit pore. II. The role of compressibility and field type. *Journal of Chemical Physics*, **2000**, 112, 3094-3103	3.9	37
67	Microscopic approach to inhomogeneous polymeric liquids. *Journal of Chemical Physics*, **1995**, 103, 5061-5069	3.9	36
66	Integral equation theory for compressible polymer alloys: thermodynamics, scattering, and miscibility of Gaussian chains. *Macromolecules*, **1991**, 24, 6736-6747	5.5	36
65	Anomalous mixing behavior of polyisobutylene/polypropylene blends: molecular dynamics simulation study. *Journal of Chemical Physics*, **2004**, 120, 8883-6	3.9	34
64	Effects of pressure on volume-recovery experiments. *Macromolecules*, **1985**, 18, 2239-2246	5.5	34
63	Polymeric Equations of State. *Journal of Macromolecular Science - Reviews in Macromolecular Chemistry and Physics*, **1974**, 11, 321-366		34
62	Computer simulation of multiple chain systems Equation of state of hard sphere chains. *Journal of Chemical Physics*, **1976**, 64, 2496	3.9	33
61	An integral equation theory for polymer solutions: Explicit inclusion of the solvent molecules. *Journal of Chemical Physics*, **2001**, 115, 5669-5678	3.9	32
60	Calculation of Grüneisen parameters of polymers. *Journal of Chemical Physics*, **1973**, 58, 374-380	3.9	32
59	Density functional theory of simple polymers in a slit pore. III. Surface tension. *Journal of Chemical Physics*, **2000**, 113, 2021-2024	3.9	30

58	Analytic reference interaction site model-mean spherical approximation theory of flexible polymer blends: Effects of spatial and fractal dimensions. *Journal of Chemical Physics*, **1991**, 94, 3986-4000	3.9	30
57	Theory for the chi parameter of polymer blends: Effect of attractive interactions. *Journal of Chemical Physics*, **1988**, 88, 7242-7243	3.9	30
56	Diffraction by macromolecular fluids. *Journal of the Chemical Society, Faraday Transactions*, **1992**, 88, 1791		29
55	Intermolecular Structure and Thermodynamics of Vinyl Polymer Liquids: Freely-Jointed Chains. *Macromolecules*, **1994**, 27, 4665-4672	5.5	27
54	A non-Gaussian theory of rubberlike elasticity based on rotational isomeric state simulations of network chain configurations. III. Networks prepared from the extraordinarily flexible chains of polymeric sulfur and polymeric selenium. *Journal of Chemical Physics*, **1984**, 80, 5262-5265	3.9	26
53	Polymeric contributions to entropic surface forces. *Journal of Chemical Physics*, **2001**, 114, 4289-4295	3.9	25
52	Comparisons between integral equation theory and molecular dynamics simulations for realistic models of polyethylene liquids. *Journal of Chemical Physics*, **1999**, 111, 9073-9081	3.9	25
51	Microscopic equations-of-state for hydrocarbon fluids: effect of attractions and comparison with polyethylene experiments. *Macromolecules*, **1993**, 26, 2655-2662	5.5	25
50	Single-chain structure in model polyethylene melts. *Macromolecules*, **1992**, 25, 4905-4910	5.5	25
49	Percus□evick Type of Integral Equation for the Excluded Volume Problem. *Journal of Chemical Physics*, **1969**, 50, 2199-2206	3.9	25
48	The ordering of symmetric diblock copolymers: A comparison of self-consistent-field and density functional approaches. *Journal of Chemical Physics*, **1997**, 106, 1950-1960	3.9	24
47	Self-Consistent Integral Equation Theory of Polyolefins and Comparison to X-ray Scattering Experiments□ *Macromolecules*, **1999**, 32, 7276-7288	5.5	24
46	Molecular dynamics of physical aging in the glassy state. *Polymer Engineering and Science*, **1984**, 24, 1071-1078	2.5	24
45	Physical and chemical stress relaxation of elastomers. *Journal of Applied Polymer Science*, **1975**, 19, 2571-2581	2.9	23
44	Raman scattering in uniaxially oriented samples of planar zigzag poly(vinylidiene fluoride). *Journal of Polymer Science, Polymer Physics Edition*, **1974**, 12, 695-702		23
43	Understanding the force-vs-distance profiles of terminally attached poly(N-isopropyl acrylamide) thin films. *Langmuir*, **2009**, 25, 10624-32	4	21
42	The effect of attractions on the structure of fused sphere chains confined between surfaces. *Journal of Chemical Physics*, **1999**, 111, 1608-1614	3.9	20
41	A modified self-consistent-field theory: Application to a homopolymer melt near a hard wall. *Journal of Chemical Physics*, **1995**, 103, 1635-1640	3.9	20

40	The structure of a rotational isomeric state alkane melt near a hard wall: Comparison of density functional theory with related theories. *Journal of Chemical Physics*, **1995**, 102, 3431-3439	3.9	20
39	Monte-Carlo Simulation of Multiple Chain Systems. Second and Fourth Moments. *Macromolecules*, **1979**, 12, 463-466	5.5	20
38	Structure of Poly(dialkylsiloxane) Melts: Comparisons of Wide-Angle X-ray Scattering, Molecular Dynamics Simulations, and Integral Equation Theory. *Macromolecules*, **2007**, 40, 7036-7043	5.5	19
37	The interfacial thickness of symmetric diblock copolymers: Theory and experiment. *Journal of Chemical Physics*, **1998**, 108, 3023-3027	3.9	19
36	Molecular dynamics simulations of athermal polymer blends: Finite system size considerations. *Journal of Chemical Physics*, **1995**, 103, 1200-1207	3.9	19
35	Molecular dynamics simulations of athermal polymer blends: Comparison with integral equation theory. *Journal of Chemical Physics*, **1995**, 103, 1208-1215	3.9	19
34	Intermolecular Packing in Stereoregular Polypropylene Liquids: Comparison between Theory and X-ray Scattering Experiments *Macromolecules*, **1997**, 30, 6264-6273	5.5	18
33	Molecular Dynamics Simulations and Integral Equation Theory of Alkane Chains: Comparison of Explicit and United Atom Models. *Macromolecules*, **2003**, 36, 2158-2164	5.5	18
32	Theory for the Solubility of Gases in Polymers: Application to Monatomic Solutes. *Macromolecules*, **1997**, 30, 145-152	5.5	17
31	Effects of chain stiffness and penetrant size on penetrant diffusion in simple polymers: deduced relations from simulation and PRISM theory. *Polymer*, **2004**, 45, 3923-3932	3.9	17
30	X-ray Scattering of Vinyl Polyolefin Liquids and Random Copolymers: Theory and Experiment. *Macromolecules*, **2008**, 41, 2694-2700	5.5	16
29	A New Constitutive Model for the Chemical Aging of Rubber Networks in Deformed States. *Macromolecules*, **2008**, 41, 9896-9903	5.5	16
28	Multiple-temperature steps: a further test of an aging theory for polymer glasses. *Macromolecules*, **1988**, 21, 3216-3220	5.5	16
27	Computer Simulation of Chains in Dilute Solution. Crossover from to Good Solvent Behavior. *Macromolecules*, **1980**, 13, 1199-1203	5.5	16
26	The role of excluded volume in polyethylene intermolecular potentials. *Journal of Chemical Physics*, **1995**, 102, 8635-8642	3.9	15
25	Statistics of a single polymer chain*. *Ferroelectrics*, **1980**, 30, 49-56	0.6	15
24	The structure of poly(ethylene oxide) liquids: comparison of integral equation theory with molecular dynamics simulations and neutron scattering. *Polymer*, **2005**, 46, 6500-6506	3.9	14
23	The structure of amorphous polymers near surfaces: athermal systems. *Computational and Theoretical Polymer Science*, **1998**, 8, 159-168		12

22	Comparison of random-walk density functional theory to simulation for bead-spring homopolymer melts. *Journal of Chemical Physics*, **2004**, 121, 2788-97	3.9	12
21	Intermolecular packing of freely jointed branched polyalkene melts: a microscopic approach. *Journal of the Chemical Society, Faraday Transactions*, **1995**, 91, 2427		12
20	Physical and chemical stress relaxation of a fluoroelastomer. *Journal of Applied Polymer Science*, **1977**, 21, 1597-1605	2.9	12
19	Packing of poly(tetrafluoroethylene) in the liquid state: Molecular dynamics simulation and theory. *Journal of Chemical Physics*, **2008**, 129, 214901	3.9	11
18	Density functional theory of polymer-polymer phase separation behavior. *Journal of Polymer Science, Part B: Polymer Physics*, **1995**, 33, 2307-2317	2.6	11
17	Integral Equation Theory of Polymer Solutions: Application to Polyethylene/Benzene Solutions. *Macromolecules*, **2004**, 37, 1980-1986	5.5	10
16	Intermolecular structure in a single component polymer glass: Towards high resolution measurements of the sidechain pair correlation function. *Journal of Chemical Physics*, **1994**, 100, 9156-9169	3.9	10
15	The Solubility of Gases in Polyethylene: Integral Equation Study of Standard Molecular Models. *Macromolecules*, **1998**, 31, 6669-6675	5.5	9
14	The colloidal force of bead-spring chains in a good solvent. *Journal of Chemical Physics*, **2005**, 122, 164905	3.9	9
13	The structure and thermodynamics of energetically and structurally asymmetric polymer blends. *Journal of Chemical Physics*, **1998**, 109, 806-814	3.9	8
12	Thermodynamics and local structure of vinyl polymer melts. *Journal of Chemical Physics*, **1995**, 103, 2229-2236	3.9	8
11	The glass transition temperature of thin films: A molecular dynamics study for a bead-spring model. *Journal of Chemical Physics*, **2017**, 146, 203322	3.9	7
10	The effect of attractions on the structure and thermodynamics of model polymer blends. *Journal of Chemical Physics*, **1997**, 107, 4024-4032	3.9	7
9	Density Functional Theory and Molecular Dynamics Simulation of Poly(dimethylsiloxane) Melts near Silica Surfaces. *Macromolecules*, **2005**, 38, 8562-8573	5.5	7
8	Polymer crystallization: density functional theory and application to polyethylene. *Chemical Physics Letters*, **1991**, 179, 374-378	2.5	7
7	The diffusion of simple penetrants in tangent site polymer melts. *Journal of Chemical Physics*, **1999**, 111, 9822-9831	3.9	5
6	Cell Model for Amorphous Polymers. *Journal of Chemical Physics*, **1972**, 56, 5739-5741	3.9	5
5	Van der Waals model for phase transitions in thermoresponsive surface films. *Journal of Chemical Physics*, **2009**, 130, 194708	3.9	4

4	Density functional theory of realistic models of polyethylene liquids in slit pores: comparison with monte carlo simulations. *Journal of Physical Chemistry B*, **2005**, 109, 6620-8	3.4	4
3	Compressibility-Based Hard-Site Models of Linear Polyethylene and the Normal Alkanes. *Macromolecules*, **1995**, 28, 3275-3281	5.5	2
2	Theoretical Basis for the Viscoelastic Response of a Polymeric Network. *Journal of Chemical Physics*, **1971**, 55, 2642-2646	3.9	1
1	Gruneisen parameters of bead-spring chains: MD simulation and theory. *Journal of Chemical Physics*, **2020**, 153, 244903	3.9	