Jay D Schieber

List of Publications by Year
in descending order

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112	2,742	172386	233338
papers	citations	29 h-index	45 g-index

117	117	117	1336
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Segment connectivity, chain-length breathing, segmental stretch, and constraint release in reptation models. I. Theory and single-step strain predictions. Journal of Chemical Physics, 1998, 109, 10018-10027.	1.2	160
2	A full-chain, temporary network model with sliplinks, chain-length fluctuations, chain connectivity and chain stretching. Journal of Rheology, 2003, 47, 213-233.	1.3	148
3	Linear Viscoelastic Predictions of a Consistently Unconstrained Brownian Slip-Link Model. Macromolecules, 2006, 39, 3386-3397.	2.2	91
4	Fluctuations in entanglements of polymer liquids. Journal of Chemical Physics, 2003, 118, 5162-5166.	1.2	90
5	Measurement of Elastic Modulus of Collagen Type I Single Fiber. PLoS ONE, 2016, 11, e0145711.	1.1	77
6	Treating inertia in passive microbead rheology. Physical Review E, 2012, 85, 021504.	0.8	69
7	Nanomechanics of Type I Collagen. Biophysical Journal, 2016, 111, 50-56.	0.2	67
8	Segment connectivity, chain-length breathing, segmental stretch, and constraint release in reptation models. III. Shear flows. Journal of Rheology, 1999, 43, 701-717.	1.3	61
9	Self-Consistent Modeling of Constraint Release in a Single-Chain Mean-Field Slip-Link Model. Macromolecules, 2009, 42, 7504-7517.	2.2	59
10	Entangled Polymer Dynamics in Equilibrium and Flow Modeled Through Slip Links. Annual Review of Chemical and Biomolecular Engineering, 2014, 5, 367-381.	3.3	58
11	Segment connectivity, chain-length breathing, segmental stretch, and constraint release in reptation models. II. Double-step strain predictions. Journal of Chemical Physics, 1998, 109, 10028-10032.	1.2	55
12	Approximations of the discrete slip-link model and their effect on nonlinear rheology predictions. Journal of Rheology, 2013, 57, 535-557.	1.3	53
13	Comprehensive comparisons with nonlinear flow data of a consistently unconstrained Brownian slip-link model. Journal of Rheology, 2007, 51, 1111-1141.	1.3	48
14	Application of the Slip-Link Model to Bidisperse Systems. Macromolecules, 2010, 43, 6202-6212.	2.2	47
15	Brownian dynamics simulation of reversible polymer networks under shear using a non-interacting dumbbell model. Journal of Non-Newtonian Fluid Mechanics, 2003, 113, 73-96.	1.0	44
16	A multichain polymer slip-spring model with fluctuating number of entanglements for linear and nonlinear rheology. Journal of Chemical Physics, 2015, 143, 243147.	1.2	42
17	The effects of bead inertia on the Rouse model. Journal of Chemical Physics, 1988, 89, 6972-6981.	1.2	41
18	A regularization-free method for the calculation of molecular weight distributions from dynamic moduli data. Rheologica Acta, 2005, 44, 342-351.	1.1	39

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19	Relaxation of Anisotropic Thermal Diffusivity in a Polymer Melt Following Step Shear Strain. Physical Review Letters, 1999, 82, 366-369.	2.9	37
20	Analytic Expressions for the Statistics of the Primitive-Path Length in Entangled Polymers. Physical Review Letters, 2008, 100, 188302.	2.9	37
21	Effect of polymer solvent on the mechanical properties of entangled polymer gels: Coarse-grained molecular simulation. Polymer, 2013, 54, 2555-2564.	1.8	37
22	Primitive-path statistics of entangled polymers: mapping multi-chain simulations onto single-chain mean-field models. New Journal of Physics, 2014, 16, 015027.	1.2	37
23	Competing effects of particle and medium inertia on particle diffusion in viscoelastic materials, and their ramifications for passive microrheology. Physical Review E, 2012, 85, 041504.	0.8	35
24	Challenging Tube and Slip-Link Models: Predicting the Linear Rheology of Blends of Well-Characterized Star and Linear 1,4-Polybutadienes. Macromolecules, 2016, 49, 4964-4977.	2.2	34
25	A multi-chain polymer slip-spring model with fluctuating number of entanglements: Density fluctuations, confinement, and phase separation. Journal of Chemical Physics, 2017, 146, 014903.	1.2	34
26	Elimination of inertia from a Generalized Langevin Equation: Applications to microbead rheology modeling and data analysis. Journal of Rheology, 2012, 56, 185-212.	1.3	33
27	Application of kinetic theory models in spatiotemporal flows for polymer solutions, liquid crystals and polymer melts using the CONNFFESSIT approach. Chemical Engineering Science, 1996, 51, 1473-1485.	1.9	32
28	Dielectric Relaxation as an Independent Examination of Relaxation Mechanisms in Entangled Polymers Using the Discrete Slip-Link Model. Macromolecules, 2012, 45, 5728-5743.	2.2	32
29	GENERIC Compliance of a Temporary Network Model with Sliplinks, Chain-Length Fluctuations, Segment-Connectivity and Constraint Release. Journal of Non-Equilibrium Thermodynamics, 2003, 28, .	2.4	31
30	Modeling of Diffusion Effects on Step-Growth Polymerizations. Macromolecules, 2005, 38, 188-195.	2.2	29
31	The analytic solution of Stokes for time-dependent creeping flow around a sphere: Application to linear viscoelasticity as an ingredient for the generalized Stokesâ€“Einstein relation and microrheology analysis. Journal of Non-Newtonian Fluid Mechanics, 2013, 200, 3-8.	1.0	29
32	Universality and speedup in equilibrium and nonlinear rheology predictions of the fixed slip-link model. Journal of Rheology, 2014, 58, 723-736.	1.3	29
33	Anisotropic Thermal Conduction in a Polymer Liquid Subjected to Shear Flow. Physical Review Letters, 2004, 93, 098301.	2.9	28
34	Evidence for the stress-thermal rule in an elastomer subjected to simple elongation. Journal of Chemical Physics, 1999, 111, 6965-6969.	1.2	27
35	Determination of viscoelastic properties by analysis of probe-particle motion in molecular simulations. Physical Review E, 2012, 86, 051501.	0.8	27
36	Anisotropic thermal conduction in polymer melts in uniaxial elongation flows. Journal of Rheology, 2013, 57, 427-439.	1.3	26

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37	Generalized Brownian configuration fields for Fokkerâ€“Planck equations including center-of-mass diffusion. Journal of Non-Newtonian Fluid Mechanics, 2006, 135, 179-181.	1.0	25
38	Measurement of thermal diffusivity in polymer melts using forced Rayleigh light scattering. Journal of Polymer Science, Part B: Polymer Physics, 1999, 37, 1069-1078.	2.4	24
39	Self-consistent modeling of entangled network strands and linear dangling structures in a single-strand mean-field slip-link model. Rheologica Acta, 2012, 51, 21-35.	1.1	24
40	Internal viscosity dumbbell model with a Gaussian approximation. Journal of Rheology, 1993, 37, 1003-1027.	1.3	23
41	Evaluation of rheological constitutive equations for branched polymers in step shear strain flows. Rheologica Acta, 2003, 42, 123-131.	1.1	23
42	Measurement of anisotropic energy transport in flowing polymers by using a holographic technique. Proceedings of the National Academy of Sciences of the United States of America, 2004, 101, 13142-13146.	3.3	23
43	The effects of hydrodynamic interaction and inertia in determining the high-frequency dynamic modulus of a viscoelastic fluid with two-point passive microrheology. Physics of Fluids, 2012, 24, .	1.6	23
44	Fluctuating Entanglements in Single-Chain Mean-Field Models. Polymers, 2013, 5, 643-678.	2.0	23
45	Fluctuation in entanglement positions via elastic slip-links. Journal of Chemical Physics, 2010, 132, 074905.	1.2	22
46	The Weissenberg effect at finite rodâ€rotation speeds. Journal of Chemical Physics, 1988, 88, 4001-4007.	1.2	21
47	Nonequilibrium Brownian dynamics simulations of Hookean and FENE dumbbells with internal viscosity. Journal of Non-Newtonian Fluid Mechanics, 1995, 56, 307-332.	1.0	21
48	Molecular origins of anisotropy in the thermal conductivity of deformed polymer melts: stress versus orientation contributions. Soft Matter, 2012, 8, 11781.	1.2	21
49	Effect of intrinsic and extrinsic factors on the simulated D-band length of type I collagen. Proteins: Structure, Function and Bioinformatics, 2015, 83, 1800-1812.	1.5	20
50	Determination of linear viscoelastic properties of an entangled polymer melt by probe rheology simulations. Physical Review E, 2016, 93, 012501.	0.8	19
51	A Detailed Examination of the Topological Constraints of Lamellae-Forming Block Copolymers. Macromolecules, 2018, 51, 2110-2124.	2.2	19
52	Anisotropic Thermal Diffusivity Measurements in Deforming Polymers and the Stress-Thermal Rule. International Journal of Thermophysics, 2001, 22, 1215-1225.	1.0	18
53	Measurements of Flow-Induced Anisotropic Thermal Conduction in a Polyisobutylene Melt Following Step Shear Flow. Macromolecules, 2005, 38, 6210-6215.	2.2	18
54	Accessible and Quantitative Entangled Polymer Rheology Predictions, Suitable for Complex Flow Calculations. Macromolecules, 2015, 48, 1606-1613.	2.2	18

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55	Kinetic theory of polymer melts. 7. Polydispersity effects. Industrial & Engineering Chemistry Fundamentals, 1986, 25, 471-475.	0.7	17
56	Do internal viscosity models satisfy the fluctuation-dissipation theorem?. Journal of Non-Newtonian Fluid Mechanics, 1992, 45, 47-61.	1.0	17
57	On consistency criteria for stress tensors in kinetic theory models. Journal of Rheology, 1994, 38, 1909-1924.	1.3	17
58	Polyelectrolytes in shear and extensional flows: Conformation and rheology. Journal of Polymer Science, Part B: Polymer Physics, 1998, 36, 1401-1417.	2.4	17
59	Polymer rheology predictions from first principles using the slip-link model. Journal of Rheology, 2020, 64, 1035-1043.	1.3	17
60	Therapeutic hypothermia induction via an esophageal routeâ€"a computer simulation. American Journal of Emergency Medicine, 2012, 30, 932-935.	0.7	16
61	Analytic slip-link expressions for universal dynamic modulus predictions of linear monodisperse polymer melts. Rheologica Acta, 2015, 54, 169-183.	1.1	16
62	Smoothed particle hydrodynamics simulation of viscoelastic flows with the slip-link model. Molecular Systems Design and Engineering, 2016, 1, 99-108.	1.7	16
63	Interplay of entanglement and association effects on the dynamics of semidilute solutions of multisticker polymer chains. Journal of Rheology, 2017, 61, 1231-1241.	1.3	16
64	Linear viscoelastic behavior of bidisperse polystyrene blends: experiments and slip-link predictions. Rheologica Acta, 2018, 57, 327-338.	1.1	16
65	Exponential shear flow of linear, entangled polymeric liquids. Journal of Rheology, 2000, 44, 1043-1054.	1.3	15
66	Pomâ€"Pom theory evaluation in double-step strain flows. Journal of Rheology, 2003, 47, 413-427.	1.3	15
67	Derivation of free energy expressions for tube models from coarse-grained slip-link models. Journal of Chemical Physics, 2012, 137, 034901.	1.2	15
68	Kinetic theory of polymer melts. VIII. Rheological properties of polydisperse mixtures. Journal of Chemical Physics, 1987, 87, 4917-4927.	1.2	14
69	Anisotropic thermal transport in a crosslinked polyisoprene rubber subjected to uniaxial elongation. Journal of Polymer Science, Part B: Polymer Physics, 2012, 50, 1638-1644.	2.4	14
70	Effects of fluctuations of cross-linking points on viscoelastic properties of associating polymer networks. Rheologica Acta, 2012, 51, 1021-1039.	1.1	14
71	A full-chain stochastic tube model for entangled melts and solutions of linear polymers. Journal of Rheology, 2006, 50, 477-494.	1.3	13
72	Microrheology analysis in molecular dynamics simulations: Finite box size correction. Journal of Rheology, 2021, 65, 1255-1267.	1.3	13

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73	Kinetic theory of polymer melts. IX. Comparisons with experimental data. Journal of Chemical Physics, 1987, 87, 4928-4936.	1.2	12
74	Configuration biased Monte Carlo and Brownian dynamics simulations of semiflexible polymers in extensional flows. Macromolecular Theory and Simulations, 1998, 7, 19-26.	0.6	12
75	Stochastic chain simulation of wall slip in entangled polymer melts. Journal of Rheology, 2007, 51, 451-464.	1.3	12
76	Accurate method for the Brownian dynamics simulation of spherical particles with hard-body interactions. Journal of Chemical Physics, 2002, 117, 9202-9214.	1.2	11
77	Buckling a Semiflexible Polymer Chain under Compression. Polymers, 2017, 9, 99.	2.0	11
78	Efficient Determination of Slip-Link Parameters from Broadly Polydisperse Linear Melts. Polymers, 2018, 10, 908.	2.0	11
79	A new model for polymer melts and concentrated solutions. Journal of Chemical Physics, 1991, 94, 1592-1602.	1.2	10
80	A constant-contour-length reptation model without independent alignment or consistent averaging approximations for chain retraction. Rheologica Acta, 1997, 36, 544-554.	1.1	10
81	The effects of compressibility, hydrodynamic interaction and inertia on two-point, passive microrheology of viscoelastic materials. Soft Matter, 2013, 9, 3521.	1.2	9
82	The role of filament length, finite-extensibility and motor force dispersity in stress relaxation and buckling mechanisms in non-sarcomeric active gels. Soft Matter, 2015, 11, 38-57.	1.2	9
83	Predictions of the linear rheology of polydisperse, entangled linear polymer melts by using the discrete slip-link model. Journal of Rheology, 2018, 62, 1331-1338.	1.3	9
84	A single-chain model for active gels I: active dumbbell model. RSC Advances, 2014, 4, 17935.	1.7	8
85	Stochastic dynamic simulation of the Boltzmann equation for electron swarms in glow discharges. Physical Review E, 1994, 50, 4911-4919.	0.8	7
86	Measuring anisotropic thermal conduction in polyisobutylene following step shear strains. AICHE Journal, 2000, 46, 610-615.	1.8	7
87	Dynamics of linear, entangled polymeric liquids in shear flows. Journal of Non-Newtonian Fluid Mechanics, 2002, 105, 111-130.	1.0	7
88	Multiscale modeling beyond equilibrium. Physics Today, 2020, 73, 36-42.	0.3	7
89	A constant-contour-length reptation model without independent alignment or consistent averaging approximations for chain retraction. Rheologica Acta, 1997, 36, 544-554.	1.1	7
90	A Hookean dumbbell model with Basset forces for dilute polymer solutions. Journal of Chemical Physics, 1991, 94, 7526-7533.	1.2	6

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91	Linear viscoelastic behavior of the Hookean dumbbell with internal viscosity. Rheologica Acta, 1996, 35, 225-232.	1.1	6
92	Calibration of optical traps by dual trapping of one bead. Optics Letters, 2013, 38, 4923.	1.7	6
93	Evidence of Deformation-Dependent Heat Capacity and Energetic Elasticity in a Cross-Linked Elastomer Subjected to Uniaxial Elongation. Macromolecules, 2018, 51, 589-597.	2.2	6
94	THERMAL TRANSPORT IN CROSS-LINKED ELASTOMERS SUBJECTED TO ELONGATIONAL DEFORMATIONS. Rubber Chemistry and Technology, 2019, 92, 639-652.	0.6	5
95	Molecular Theory Predictions of the Exponential Shear Stress Coefficient. Journal of Rheology, 1989, 33, 979-987.	1.3	4
96	Analysis of closed-discharge single-screw extrusion of power-law fluids. Polymer Engineering and Science, 2003, 43, 55-61.	1.5	4
97	On estimating stress in free-draining Kramers chain simulations using stochastic filtering. Journal of Non-Newtonian Fluid Mechanics, 2005, 127, 89-93.	1.0	4
98	Thermodynamically consistent incorporation of entanglement spatial fluctuations in the slip-link model. Physical Review E, 2021, 103, 022501.	0.8	4
99	Examination of Nonuniversalities in Entangled Polymer Melts during the Start-Up of Steady Shear Flow. Macromolecules, 2021, 54, 8033-8042.	2.2	4
100	Nonequilibrium thermodynamics for soft matter made easy(er). Physics of Fluids, 2021, 33, .	1.6	4
101	The effect of finite link number on reptation models. Journal of Non-Newtonian Fluid Mechanics, 1990, 36, 205-242.	1.0	3
102	Contrasting Local and Macroscopic Effects of Collagen Hydroxylation. International Journal of Molecular Sciences, 2021, 22, 9068.	1.8	3
103	MUnCH: a calculator for propagating statistical and other sources of error in passive microrheology. Rheologica Acta, 0, , 1.	1.1	3
104	Reexamination of multi-component non-ideal polymer solution based on the general equation for nonequilibrium reversible-irreversible coupling. Journal of Chemical Physics, 2017, 146, .	1.2	2
105	Publisher's Note: Anisotropic Thermal Conduction in a Polymer Liquid Subjected to Shear Flow [Phys. Rev. Lett.93, 098301 (2004)]. Physical Review Letters, 2004, 93, .	2.9	1
106	Calculation of the Helmholtz potential of an elastic strand in an external electric field. Journal of Chemical Physics, 2011, 134, 065105.	1.2	1
107	Correction of Doi-Edwards' Green function for a chain in a harmonic potential and its implication for the stress-optic rule. Journal of Polymer Science, Part B: Polymer Physics, 2014, 52, 460-469.	2.4	1
108	A simple microswimmer model inspired by the general equation for nonequilibrium reversibleâ€“irreversible coupling. Journal of Chemical Physics, 2020, 152, 194902.	1.2	1

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109	Predictions of a recently proposed nonâ€markovian model for polymer melts and concentrated solutions. Makromolekulare Chemie Macromolecular Symposia, 1992, 56, 135-142.	0.6	0
110	Unified Mathematical Model for Linear Viscoelastic Predictions of Linear and Branched Polymers. AIP Conference Proceedings, 2008, , .	0.3	0
111	Self-Consistent Modeling of Constraint Release in a Single-Chain Mean-Field Slip-Link Model. AIP Conference Proceedings, 2008, , .	0.3	0
112	SHEAR FLOW PREDICTIONS OF A HOOKEAN DUMBBELL WITH INTERNAL VISCOSITY USING A GAUSSIAN APPROXIMATION. , 1992, , 88.		0