Eric S G Shaqfeh

List of Publications by Year in Descending Order

135 papers	5,745 citations	40 h-index	72 g-index
140 ext. papers	6,216 ext. citations	4.1 avg, IF	5.91 L-index

#	Paper	IF	Citations
135	A theory for the coexistence of coiled and stretched configurational phases in the extensional flow of entangled polymer melts. *Journal of Chemical Physics*, **2021**, 154, 204907	3.9	2
134	Self-propulsion of a freely suspended swimmer by a swirling tail in a viscoelastic fluid. *Physical Review Fluids*, **2021**, 6,	2.8	3
133	Transient and steady shear rheology of particle-laden viscoelastic suspensions. *Journal of Rheology*, **2021**, 65, 1269-1295	4.1	4
132	A system for the high-throughput measurement of the shear modulus distribution of human red blood cells. *Lab on A Chip*, **2020**, 20, 2927-2936	7.2	9
131	Oscillatory spontaneous dimpling in evaporating curved thin films. *Journal of Fluid Mechanics*, **2020**, 889,	3.7	5
130	Lift and drag force on a spherical particle in a viscoelastic shear flow. *Journal of Non-Newtonian Fluid Mechanics*, **2020**, 280, 104279	2.7	12
129	Collective effects in the sedimentation of particles in a viscoelastic fluid. *Physical Review Fluids*, **2020**, 5,	2.8	4
128	Swimming with swirl in a viscoelastic fluid. *Journal of Fluid Mechanics*, **2020**, 900,	3.7	7
127	Extravasation of PEGylated Spherical Nanoparticles through a Circular Pore of Similar Size. *Macromolecules*, **2020**, 53, 2991-3006	5.5	0
126	Three-dimensional simulations of undulatory and amoeboid swimmers in viscoelastic fluids. *Soft Matter*, **2019**, 15, 4836-4855	3.6	5
125	In□Vitro Measurement and Modeling of Platelet Adhesion on VWF-Coated Surfaces in Channel Flow. *Biophysical Journal*, **2019**, 116, 1136-1151	2.9	7
124	On the rheology of particle suspensions in viscoelastic fluids. *AICHE Journal*, **2019**, 65, e16575	3.6	19
123	Evaporation-driven solutocapillary flow of thin liquid films over curved substrates. *Physical Review Fluids*, **2019**, 4,	2.8	12
122	Drag coefficient for a sedimenting and rotating sphere in a viscoelastic fluid. *Physical Review Fluids*, **2019**, 4,	2.8	12
121	Extensional rheology of a dilute particle-laden viscoelastic solution. *Physical Review Fluids*, **2019**, 4,	2.8	5
120	Taylor dispersion in the presence of cross flow and interfacial mass transfer. *Physical Review Fluids*, **2019**, 4,	2.8	3
119	Pressure-driven flow of a vesicle through a square microchannel. *Journal of Fluid Mechanics*, **2019**, 861, 447-483	3.7	5

118	Suspension flow through an asymmetric T-junction. *Journal of Fluid Mechanics*, **2018**, 844, 247-273	3.7	8
117	Effect of Length on the Dynamics of Wall Tethered Polymers in Shear Flow. *Macromolecules*, **2018**, 51, 254-265	5.5	2
116	Stokes flow of vesicles in a circular tube. *Journal of Fluid Mechanics*, **2018**, 851, 606-635	3.7	7
115	Einstein viscosity with fluid elasticity. *Physical Review Fluids*, **2018**, 3,	2.8	31
114	The steady motion of a closely fitting vesicle in a tube. *Journal of Fluid Mechanics*, **2018**, 835, 721-761	3.7	9
113	Immersed-finite-element method for deformable particle suspensions in viscous and viscoelastic media. *Physical Review E*, **2018**, 98,	2.4	20
112	Mechanism of shear thickening in suspensions of rigid spheres in Boger fluids. Part I: Dilute suspensions. *Journal of Rheology*, **2018**, 62, 1363-1377	4.1	24
111	Mechanism of shear thickening in suspensions of rigid spheres in Boger fluids. Part II: Suspensions at finite concentration. *Journal of Rheology*, **2018**, 62, 1379-1396	4.1	26
110	Extravasation of Brownian Spheroidal Nanoparticles through Vascular Pores. *Biophysical Journal*, **2018**, 115, 1103-1115	2.9	13
109	Fully resolved viscoelastic particulate simulations using unstructured grids. *Journal of Computational Physics*, **2017**, 338, 313-338	4.1	27
108	Heat/mass transport in shear flow over a reactive surface with inert defects. *Journal of Fluid Mechanics*, **2017**, 811, 372-399	3.7	2
107	Study of the flow unsteadiness in the human airway using large eddy simulation. *Physical Review Fluids*, **2017**, 2,	2.8	12
106	Theory to predict particle migration and margination in the pressure-driven channel flow of blood. *Physical Review Fluids*, **2017**, 2,	2.8	34
105	Growth of viscoelastic wings and the reduction of particle mobility in a viscoelastic shear flow. *Physical Review Fluids*, **2017**, 2,	2.8	8
104	Experimental observation of the asymmetric instability of intermediate-reduced-volume vesicles in extensional flow. *Soft Matter*, **2016**, 12, 3787-96	3.6	24
103	The Effect of Hematocrit on Platelet Adhesion: Experiments and Simulations. *Biophysical Journal*, **2016**, 111, 577-588	2.9	47
102	Examining platelet adhesion via Stokes flow simulations and microfluidic experiments. *Soft Matter*, **2015**, 11, 355-67	3.6	13
101	Pearling, wrinkling, and buckling of vesicles in elongational flows. *Journal of Fluid Mechanics*, **2015**, 777, 1-26	3.7	32

100	Heat/mass transport in shear flow over a heterogeneous surface with first-order surface-reactive domains. *Journal of Fluid Mechanics*, **2015**, 782, 260-299	3.7	8
99	In vitro measurement of particle margination in the microchannel flow: effect of varying hematocrit. *Biophysical Journal*, **2015**, 108, 2601-2608	2.9	40
98	Loop subdivision surface boundary integral method simulations of vesicles at low reduced volume ratio in shear and extensional flow. *Physics of Fluids*, **2014**, 26, 031902	4.4	22
97	The mechanism of shape instability for a vesicle in extensional flow. *Journal of Fluid Mechanics*, **2014**, 750, 144-190	3.7	22
96	Nonlinear instability of a supersonic boundary layer with two-dimensional roughness. *Journal of Fluid Mechanics*, **2014**, 752, 497-520	3.7	9
95	Singular perturbation theory for predicting extravasation of Brownian particles. *Journal of Engineering Mathematics*, **2014**, 84, 155-171	1.2	3
94	Coarse-grained theory to predict the concentration distribution of red blood cells in wall-bounded Couette flow at zero Reynolds number. *Physics of Fluids*, **2013**, 25, 061901	4.4	27
93	The effect of shear thinning and walls on the sedimentation of a sphere in an elastic fluid under orthogonal shear. *Journal of Non-Newtonian Fluid Mechanics*, **2013**, 201, 120-129	2.7	23
92	Simulations of a sphere sedimenting in a viscoelastic fluid with cross shear flow. *Journal of Non-Newtonian Fluid Mechanics*, **2013**, 197, 48-60	2.7	37
91	The dynamics of a non-dilute vesicle suspension in a simple shear flow. *Journal of Fluid Mechanics*, **2013**, 725, 709-731	3.7	42
90	The shape stability of a lipid vesicle in a uniaxial extensional flow. *Journal of Fluid Mechanics*, **2013**, 719, 345-361	3.7	28
89	A conversation with Andreas Acrivos. *Annual Review of Chemical and Biomolecular Engineering*, **2013**, 4, 1-21	8.9	4
88	Effects of viscoelasticity in the high Reynolds number cylinder wake. *Journal of Fluid Mechanics*, **2012**, 693, 297-318	3.7	9
87	Flow of power-law fluids in fixed beds of cylinders or spheres. *Journal of Fluid Mechanics*, **2012**, 713, 491-527	3.7	5
86	Shear-induced particle migration and margination in a cellular suspension. *Physics of Fluids*, **2012**, 24, 011902	4.4	129
85	Buckling transitions of an elastic filament in a viscous stagnation point flow. *Physics of Fluids*, **2012**, 24, 123601	4.4	33
84	The dynamics of a vesicle in a wall-bound shear flow. *Physics of Fluids*, **2011**, 23, 121901	4.4	44
83	Numerical Simulation of Polymer Injection in Turbulent Flow Past a Circular Cylinder. *Journal of Fluids Engineering, Transactions of the ASME*, **2011**, 133,	2.1	1

82	The dynamics of a vesicle in simple shear flow. *Journal of Fluid Mechanics*, **2011**, 674, 578-604	3.7	90
81	Shear-induced platelet margination in a microchannel. *Physical Review E*, **2011**, 83, 061924	2.4	104
80	The shear flow processing of controlled DNA tethering and stretching for organic molecular electronics. *ACS Nano*, **2011**, 5, 275-82	16.7	9
79	Floquet stability analysis of viscoelastic flow over a cylinder. *Journal of Non-Newtonian Fluid Mechanics*, **2011**, 166, 554-565	2.7	17
78	A computational study of the influence of viscoelasticity on the interfacial dynamics of dip coating flow. *Journal of Non-Newtonian Fluid Mechanics*, **2011**, 166, 614-627	2.7	14
77	Simulations of three-dimensional viscoelastic flows past a circular cylinder at moderate Reynolds numbers. *Journal of Fluid Mechanics*, **2010**, 651, 415-442	3.7	65
76	Lateral drift and concentration instability in a suspension of bubbles induced by Marangoni stresses at zero Reynolds number. *Physics of Fluids*, **2010**, 22, 101702	4.4	10
75	Effect of Solvent Quality on the Coil–Stretch Transition. *Macromolecules*, **2010**, 43, 10679-10691	5.5	33
74	Disturbance evolution in a Mach 4.8 boundary layer with two-dimensional roughness-induced separation and shock. *Journal of Fluid Mechanics*, **2010**, 648, 435-469	3.7	47
73	The conformational dynamics of lambda-DNA in the anti-Brownian electrokinetic trap: Brownian dynamics and Monte Carlo simulation. *Journal of Chemical Physics*, **2009**, 131, 224905	3.9	3
72	Experimental and Numerical Studies of Tethered DNA Shear Dynamics in the Flow-Gradient Plane. *Macromolecules*, **2009**, 42, 9170-9182	5.5	23
71	Slip-Link Simulations of Entangled, Finitely Extensible, Wormlike Chains in Shear Flow. *Macromolecules*, **2009**, 42, 7168-7183	5.5	15
70	The effect of Brownian motion on the stability of sedimenting suspensions of polarizable rods in an electric field. *Journal of Fluid Mechanics*, **2009**, 624, 361-388	3.7	10
69	Brownian demixing and wall effects in sedimenting suspensions of orientable particles. *Physical Review E*, **2008**, 78, 055301	2.4	2
68	Dynamics of DNA Polymers in Post Arrays: Comparison of Single Molecule Experiments and Simulations. *Macromolecules*, **2007**, 40, 3848-3859	5.5	32
67	The Individualistic Dynamics of Entangled DNA in Solution. *Macromolecules*, **2007**, 40, 2461-2476	5.5	88
66	Ergodicity-breaking and the unraveling dynamics of a polymer in linear and nonlinear extensional flows. *Journal of Rheology*, **2007**, 51, 561-574	4.1	10
65	The dynamics of the coil-stretch transition for long, flexible polymers in planar mixed flows. *Journal of Rheology*, **2007**, 51, 947-969	4.1	13

64	The effect of stratification on the wave number selection in the instability of sedimenting spheroids. *Physics of Fluids*, **2006**, 18, 121503	4.4	17
63	Stabilization of a suspension of sedimenting rods by induced-charge electrophoresis. *Physics of Fluids*, **2006**, 18, 121701	4.4	25
62	Direct numerical simulation of polymer-induced drag reduction in turbulent boundary layer flow of inhomogeneous polymer solutions. *Journal of Fluid Mechanics*, **2006**, 566, 153	3.7	40
61	Hydrodynamic interactions in the induced-charge electrophoresis of colloidal rod dispersions. *Journal of Fluid Mechanics*, **2006**, 563, 223	3.7	96
60	Effect of flexibility on the shear-induced migration of short-chain polymers in parabolic channel flow. *Journal of Fluid Mechanics*, **2006**, 557, 297	3.7	46
59	The growth of concentration fluctuations in dilute dispersions of orientable and deformable particles under sedimentation. *Journal of Fluid Mechanics*, **2006**, 553, 347	3.7	43
58	Viscoelastic effects on interfacial dynamics in air□quid displacement under gravity stabilization. *Journal of Fluid Mechanics*, **2005**, 531, 59-83	3.7	7
57	Dynamics of DNA in the Flow-Gradient Plane of Steady Shear Flow: Observations and Simulations. *Macromolecules*, **2005**, 38, 1967-1978	5.5	113
56	Shear Thinning and Tumbling Dynamics of Single Polymers in the Flow-Gradient Plane. *Macromolecules*, **2005**, 38, 581-592	5.5	133
55	A smooth particle-mesh Ewald algorithm for Stokes suspension simulations: The sedimentation of fibers. *Physics of Fluids*, **2005**, 17, 033301	4.4	119
54	An experimental and numerical investigation of drag reduction in a turbulent boundary layer using a rigid rodlike polymer. *Physics of Fluids*, **2005**, 17, 085101	4.4	37
53	The dynamic mechanism for turbulent drag reduction using rigid fibers based on Lagrangian conditional statistics. *Physics of Fluids*, **2005**, 17, 063102	4.4	30
52	Effect of Hydrodynamic Interactions on DNA Dynamics in Extensional Flow: Simulation and Single Molecule Experiment. *Macromolecules*, **2004**, 37, 9242-9256	5.5	129
51	Numerical simulation of turbulent drag reduction using rigid fibres. *Journal of Fluid Mechanics*, **2004** , 518, 281-317	3.7	74
50	On the coherent drag-reducing and turbulence-enhancing behaviour of polymers in wall flows. *Journal of Fluid Mechanics*, **2004**, 514, 271-280	3.7	193
49	On the polymer entropic force singularity and its relation to extensional stress relaxation and filament recoil. *Journal of Rheology*, **2004**, 48, 209-221	4.1	19
48	A computational study of DNA separations in sparse disordered and periodic arrays of posts. *Journal of Chemical Physics*, **2003**, 118, 2941	3.9	48
47	Shear Forces between Tethered Polymer Chains as a Function of Compression, Sliding Velocity, and Solvent Quality. *Macromolecules*, **2003**, 36, 389-398	5.5	101

46	Visualization of Molecular Fluctuations near the Critical Point of the Coil–Stretch Transition in Polymer Elongation. *Macromolecules*, **2003**, 36, 4544-4548	5.5	81
45	The configurational phase transitions of flexible polymers in planar mixed flows near simple shear. *Journal of Chemical Physics*, **2003**, 119, 2908-2914	3.9	22
44	Observation of polymer conformation hysteresis in extensional flow. *Science*, **2003**, 301, 1515-9	33.3	295
43	Dynamic simulations of the inhomogeneous sedimentation of rigid fibres. *Journal of Fluid Mechanics*, **2002**, 468, 205-237	3.7	94
42	An experimental and simulation study of dilute polymer solutions in exponential shear flow: Comparison to uniaxial and planar extensional flows. *Journal of Rheology*, **2001**, 45, 321-349	4.1	6
41	Dynamics of dilute and semidilute DNA solutions in the start-up of shear flow. *Journal of Rheology*, **2001**, 45, 421-450	4.1	124
40	Electrophoresis of DNA Adsorbed to a Cationic Supported Bilayer. *Langmuir*, **2001**, 17, 7396-7401	4	38
39	Relating the microscopic and macroscopic response of a polymeric fluid in a shearing flow. *Physical Review Letters*, **2000**, 85, 2018-21	7.4	76
38	Observations of ribbing instabilities in elastic fluid flows with gravity stabilization. *Journal of Fluid Mechanics*, **1999**, 399, 49-83	3.7	22
37	Rheology of Polymer Brushes: A Brownian Dynamics Study. *Macromolecules*, **1998**, 31, 5474-5486	5.5	75
36	A numerical study of the sedimentation of fibre suspensions. *Journal of Fluid Mechanics*, **1998**, 376, 149-182	3.7	77
35	The conformation change of model polymers in stochastic flow fields: Flow through fixed beds. *Physics of Fluids*, **1997**, 9, 1222-1234	4.4	10
34	Drop breakup in the flow through fixed beds via stochastic simulation in model Gaussian fields. *Physics of Fluids*, **1997**, 9, 3209-3226	4.4	8
33	Dynamic simulation of freely draining flexible polymers in steady linear flows. *Journal of Fluid Mechanics*, **1997**, 334, 251-291	3.7	165
32	Cross-streamline migration of slender Brownian fibres in plane Poiseuille flow. *Journal of Fluid Mechanics*, **1997**, 332, 23-39	3.7	28
31	Oscillatory shear of a confined fiber suspension. *Journal of Rheology*, **1997**, 41, 445-466	4.1	7
30	Rheology of "Wet" Polymer Brushes via Brownian Dynamics Simulation: Steady vs Oscillatory Shear. *Physical Review Letters*, **1997**, 78, 1182-1185	7.4	55
29	A numerical study of the rheological properties of suspensions of rigid, non-Brownian fibres. *Journal of Fluid Mechanics*, **1996**, 329, 155-186	3.7	85

28	Experimental Investigation of the Sedimentation of a Dilute Fiber Suspension. *Physical Review Letters*, **1996**, 77, 290-293	7.4	74
27	The effect of hydrodynamic interactions on the orientation distribution in a fiber suspension subject to simple shear flow. *Physics of Fluids*, **1995**, 7, 487-506	4.4	109
26	A nonlocal theory for stress in bound, Brownian suspensions of slender, rigid fibres. *Journal of Fluid Mechanics*, **1995**, 296, 271-324	3.7	34
25	The extensional viscosity and effective thermal conductivity of a dispersion of aligned disks. *Physics of Fluids*, **1994**, 6, 1955-1962	4.4	4
24	Observations of polymer conformation during flow through a fixed fibre bed. *Journal of Fluid Mechanics*, **1994**, 281, 319-356	3.7	18
23	Observations of purely elastic instabilities in the Taylor□Dean flow of a Boger fluid. *Journal of Fluid Mechanics*, **1994**, 262, 27-73	3.7	66
22	Effect of surface re-emission on the surface roughness of film growth in low pressure chemical vapor deposition. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **1993**, 11, 557-568	2.9	19
21	The effects of inertia on the viscoelastic Dean and Taylor□ouette flow instabilities with application to coating flows. *Physics of Fluids A, Fluid Dynamics*, **1992**, 4, 2415-2431		52
20	Averaged-equation and diagrammatic approximations to the average concentration of a tracer dispersed by a Gaussian random velocity field. *Physics of Fluids A, Fluid Dynamics*, **1992**, 4, 887-894		19
19	A purely elastic instability in Dean and Taylor□ean flow. *Physics of Fluids A, Fluid Dynamics*, **1992**, 4, 524-543		81
18	Polymer stretch in dilute fixed beds of fibres or spheres. *Journal of Fluid Mechanics*, **1992**, 244, 17	3.7	17
17	The effects of gap width and dilute solution properties on the viscoelastic Taylor-Couette instability. *Journal of Fluid Mechanics*, **1992**, 235, 285	3.7	88
16	Observations of axisymmetric tracer particle orientation during flow through a dilute fixed bed of fibers. *Physics of Fluids A, Fluid Dynamics*, **1991**, 3, 2516-2528		11
15	Viscoelastic Poiseuille flow through a curved channel: A new elastic instability. *Physics of Fluids A, Fluid Dynamics*, **1991**, 3, 1691-1694		32
14	Viscoelastic Poiseuille flow through a curved channel: A new elastic instability. *Physics of Fluids A, Fluid Dynamics*, **1991**, 3, 2043-2046		20
13	Orientational dispersion of fibers in extensional flows. *Physics of Fluids A, Fluid Dynamics*, **1990**, 2, 1077-1093		38
12	The hydrodynamic stress in a suspension of rods. *Physics of Fluids A, Fluid Dynamics*, **1990**, 2, 7-24		239
11	A purely elastic instability in Taylor□ouette flow. *Journal of Fluid Mechanics*, **1990**, 218, 573	3.7	403

10	The average rotation rate of a fiber in the linear flow of a semidilute suspension. *Physics of Fluids A, Fluid Dynamics*, **1990**, 2, 2093-2102		39
9	Simulation of reactive ion etching pattern transfer. *Journal of Applied Physics*, **1989**, 66, 4664-4675	2.5	98
8	Factors controlling the etching rate and etching profile in the O2 reactive ion etching pattern transfer step in multilevel lithography. *Polymer Engineering and Science*, **1989**, 29, 878-881	2.3	7
7	The instability of a dispersion of sedimenting spheroids. *Journal of Fluid Mechanics*, **1989**, 209, 521-542	3.7	106
6	Heat and mass transport in composites of aligned slender fibers. *Physics of Fluids A, Fluid Dynamics*, **1989**, 1, 3-20		32
5	Nonlocal transport models of the self-consistent potential distribution in a plasma sheath with charge transfer collisions. *Journal of Applied Physics*, **1988**, 64, 6200-6209	2.5	30
4	The combined effects of hydrodynamic interactions and Brownian motion on the orientation of particles flowing through fixed beds. *Physics of Fluids*, **1988**, 31, 2769		12
3	A nonlocal theory for the heat transport in composites containing highly conducting fibrous inclusions. *Physics of Fluids*, **1988**, 31, 2405-2425		26
2	Effect of elasticity on mixing torque requirements for rushton turbine impellers. *AICHE Journal*, **1984**, 30, 485-486	3.6	8
1	Effect of Cytoplasmic Viscosity on Red Blood Cell Migration in Small Arteriole-level Confinements		1