James Feng

List of Publications by Year in descending order

144 papers	8,356 citations	46918 47 h-index	48187 88 g-index
151 all docs	151 docs citations	151 times ranked	5706 citing authors

#	Article	IF	Citations
1	A diffuse-interface method for simulating two-phase flows of complex fluids. Journal of Fluid Mechanics, 2004, 515, 293-317.	1.4	792
2	Direct simulation of initial value problems for the motion of solid bodies in a Newtonian fluid Part 1. Sedimentation. Journal of Fluid Mechanics, 1994, 261, 95-134.	1.4	433
3	Direct simulation of initial value problems for the motion of solid bodies in a Newtonian fluid. Part 2. Couette and Poiseuille flows. Journal of Fluid Mechanics, 1994, 277, 271-301.	1.4	347
4	Phase-field simulations of interfacial dynamics in viscoelastic fluids using finite elements with adaptive meshing. Journal of Computational Physics, 2006, 219, 47-67.	1.9	345
5	The stretching of an electrified non-Newtonian jet: A model for electrospinning. Physics of Fluids, 2002, 14, 3912-3926.	1.6	306
6	Sharp-interface limit of the Cahnâ€“Hilliard model for moving contact lines. Journal of Fluid Mechanics, 2010, 645, 279-294.	1.4	292
7	Numerical simulations of self-propelled jumping upon drop coalescence on non-wetting surfaces. Journal of Fluid Mechanics, 2014, 752, 39-65.	1.4	209
8	Spontaneous shrinkage of drops and mass conservation in phase-field simulations. Journal of Computational Physics, 2007, 223, 1-9.	1.9	201
9	Numerical simulations of jet pinching-off and drop formation using an energetic variational phase-field method. Journal of Computational Physics, 2006, 218, 417-428.	1.9	194
10	Stretching of a straight electrically charged viscoelastic jet. Journal of Non-Newtonian Fluid Mechanics, 2003, 116, 55-70.	1.0	181
11	Formation of simple and compound drops in microfluidic devices. Physics of Fluids, 2006, 18, 092105.	1.6	179
12	Flow patterns in the sedimentation of an elliptical particle. Journal of Fluid Mechanics, 2009, 625, 249-272.	1.4	137
13	How Malaria Parasites Reduce the Deformability of Infected Red BloodÂCells. Biophysical Journal, 2012, 103, 1-10.	0.2	136
14	Aggregation and dispersion of spheres falling in viscoelastic liquids. Journal of Non-Newtonian Fluid Mechanics, 1994, 54, 45-86.	1.0	135
15	A particle-based model for the transport of erythrocytes in capillaries. Chemical Engineering Science, 2009, 64, 4488-4497.	1.9	123
16	Direct numerical simulation of the sedimentation of solid particles with thermal convection. Journal of Fluid Mechanics, 2003, 481, 385-411.	1.4	119
17	Direct simulation of the motion of solid particles in Couette and Poiseuille flows of viscoelastic fluids. Journal of Fluid Mechanics, 1997, 343, 73-94.	1.4	118
18	Diffuse-interface simulations of drop coalescence and retraction in viscoelastic fluids. Journal of Non-Newtonian Fluid Mechanics, 2005, 129, 163-176.	1.0	118

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19	3D phase-field simulations of interfacial dynamics in Newtonian and viscoelastic fluids. Journal of Computational Physics, 2010, 229, 498-511.	1.9	108
20	Prediction of bubble growth and size distribution in polymer foaming based on a new heterogeneous nucleation model. Journal of Rheology, 2004, 48, 439-462.	1.3	107
21	Viscoelastic effects on drop deformation in steady shear. Journal of Fluid Mechanics, 2005, 540, 427.	1.4	101
22	Hydrodynamic Interactions Among Bubbles, Drops, and Particles in Non-Newtonian Liquids. Annual Review of Fluid Mechanics, 2018, 50, 505-534.	10.8	101
23	Self-propelled sweeping removal of dropwise condensate. Applied Physics Letters, 2015, 106, .	1.5	95
24	Closure approximations for the Doi theory: Which to use in simulating complex flows of liquid-crystalline polymers?. Journal of Rheology, 1998, 42, 1095-1119.	1.3	94
25	Wall energy relaxation in the Cahnâ€“Hilliard model for moving contact lines. Physics of Fluids, 2011, 23, .	1.6	94
26	Pressure boundary conditions for computing incompressible flows with SPH. Journal of Computational Physics, 2011, 230, 7473-7487.	1.9	87
27	Simulation of malaria-infected red blood cells in microfluidic channels: Passage and blockage. Biomicrofluidics, 2013, 7, 44115.	1.2	85
28	The unsteady motion of solid bodies in creeping flows. Journal of Fluid Mechanics, 1995, 303, 83-102.	1.4	81
29	Self-propelled jumping upon drop coalescence on Leidenfrost surfaces. Journal of Fluid Mechanics, 2014, 752, 22-38.	1.4	80
30	A theory for flowing nematic polymers with orientational distortion. Journal of Rheology, 2000, 44, 1085-1101.	1.3	78
31	Dynamic simulation of sedimentation of solid particles in an Oldroyd-B fluid. Journal of Non-Newtonian Fluid Mechanics, 1996, 63, 63-88.	1.0	75
32	Partial coalescence between a drop and a liquid-liquid interface. Physics of Fluids, 2006, 18, 051705.	1.6	75
33	A computational study of the coalescence between a drop and an interface in Newtonian and viscoelastic fluids. Physics of Fluids, 2006, 18, 102102.	1.6	74
34	Self-Propelled Droplet Removal from Hydrophobic Fiber-Based Coalescers. Physical Review Letters, 2015, 115, 074502.	2.9	73
35	Wall effects on the flow of viscoelastic fluids around a circular cylinder. Journal of Non-Newtonian Fluid Mechanics, 1995, 60, 179-198.	1.0	70
36	Enhanced slip on a patterned substrate due to depinning of contact line. Physics of Fluids, 2009, 21, .	1.6	66

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37	Hydrodynamic interaction between a pair of bubbles ascending in shear-thinning inelastic fluids. Journal of Non-Newtonian Fluid Mechanics, 2011, 166, 118-132.	1.0	65
38	Deformation of a compound drop through a contraction in a pressure-driven pipe flow. International Journal of Multiphase Flow, 2008, 34, 102-109.	1.6	59
39	A Computational Model of Cell Polarization and Motility Coupling Mechanics and Biochemistry. Multiscale Modeling and Simulation, 2011, 9, 1420-1443.	0.6	59
40	The turning couples on an elliptic particle settling in a vertical channel. Journal of Fluid Mechanics, 1994, 271, 1-16.	1.4	58
41	Plasticization effects on bubble growth during polymer foaming. Polymer Engineering and Science, 2006, 46, 97-107.	1.5	56
42	Liquid crystal droplet production in a microfluidic device. Liquid Crystals, 2007, 34, 861-870.	0.9	56
43	Wicking flow through microchannels. Physics of Fluids, 2011, 23, .	1.6	53
44	A general criterion for viscoelastic secondary flow in pipes of noncircular cross section. Journal of Rheology, 2008, 52, 315-332.	1.3	52
45	The shear flow behavior of LCPs based on a generalized Doi model with distortional elasticity. Journal of Non-Newtonian Fluid Mechanics, 2002, 102, 361-382.	1.0	49
46	Simulation of the sedimentation of melting solid particles. International Journal of Multiphase Flow, 2003, 29, 751-769.	1.6	49
47	Can diffuse-interface models quantitatively describe moving contact lines?. European Physical Journal: Special Topics, 2011, 197, 37-46.	1.2	49
48	Dynamic simulation of the motion of capsules in pipelines. Journal of Fluid Mechanics, 1995, 286, 201-227.	1.4	48
49	Dynamic Evolution of Topological Defects around Drops and Bubbles Rising in a Nematic Liquid Crystal. Physical Review Letters, 2007, 99, 237802.	2.9	48
50	An incompressible smoothed particle hydrodynamics method for the motion of rigid bodies in fluids. Journal of Computational Physics, 2015, 297, 207-220.	1.9	46
51	Spreading and breakup of a compound drop on a partially wetting substrate. Journal of Fluid Mechanics, 2011, 682, 415-433.	1.4	45
52	A numerical investigation of the propulsion of water walkers. Journal of Fluid Mechanics, 2011, 668, 363-383.	1.4	45
53	A note on the forces that move particles in a second-order fluid. Journal of Non-Newtonian Fluid Mechanics, 1996, 64, 299-302.	1.0	44
54	The rise of Newtonian drops in a nematic liquid crystal. Journal of Fluid Mechanics, 2007, 593, 385-404.	1.4	43

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55	Transient drop deformation upon startup of shear in viscoelastic fluids. Physics of Fluids, 2005, 17, 123101.	1.6	42
56	Anomalous rolling of spheres down an inclined plane. Journal of Non-Newtonian Fluid Mechanics, 1993, 50, 305-329.	1.0	41
57	Capillary breakup of a liquid torus. Journal of Fluid Mechanics, 2013, 717, 281-292.	1.4	41
58	Bazooka inhibits aPKC to limit antagonism of actomyosin networks during amnioserosa apical constriction. Development (Cambridge), 2013, 140, 4719-4729.	1.2	41
59	Simulating complex flows of liquid-crystalline polymers using the Doi theory. Journal of Rheology, 1997, 41, 1317-1335.	1.3	40
60	Constitutive modeling and flow simulation of polytetrafluoroethylene (PTFE) paste extrusion. Journal of Non-Newtonian Fluid Mechanics, 2006, 139, 44-53.	1.0	40
61	A three-dimensional computation of the force and torque on an ellipsoid settling slowly through a viscoelastic fluid. Journal of Fluid Mechanics, 1995, 283, 1-16.	1.4	39
62	A Cell-Level Biomechanical Model of Drosophila Dorsal Closure. Biophysical Journal, 2012, 103, 2265-2274.	0.2	39
63	Pressure-driven channel flows of a model liquid-crystalline polymer. Physics of Fluids, 1999, 11, 2821-2835.	1.6	38
64	Dynamic Simulation of Droplet Interaction and Self-Assembly in a Nematic Liquid Crystal. Langmuir, 2008, 24, 3099-3110.	1.6	38
65	An Energetic Variational Formulation with Phase Field Methods for Interfacial Dynamics of Complex Fluids: Advantages and Challenges. The IMA Volumes in Mathematics and Its Applications, 2005, , 1-26.	0.5	37
66	An arbitrary Lagrangianâ€“Eulerian method for simulating bubble growth in polymer foaming. Journal of Computational Physics, 2007, 226, 2229-2249.	1.9	37
67	Film deposition and transition on a partially wetting plate in dip coating. Journal of Fluid Mechanics, 2016, 791, 358-383.	1.4	36
68	Simulation of Neutrophil Deformation and Transport in Capillaries using Newtonian and Viscoelastic Drop Models. Annals of Biomedical Engineering, 2007, 35, 766-780.	1.3	34
69	Asymmetric drop coalescence launches fungal ballistospores with directionality. Journal of the Royal Society Interface, 2017, 14, 20170083.	1.5	34
70	The motion of solid particles suspended in viscoelastic liquids under torsional shear. Journal of Fluid Mechanics, 1996, 324, 199-222.	1.4	33
71	An experimental study of the coalescence between a drop and an interface in Newtonian and polymeric liquids. Physics of Fluids, 2006, 18, 092103.	1.6	33
72	Interfacial forces and Marangoni flow on a nematic drop retracting in an isotropic fluid. Journal of Colloid and Interface Science, 2005, 290, 281-288.	5.0	31

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73	A fate-alternating transitional regime in contracting liquid filaments. Journal of Fluid Mechanics, 2019, 860, 640-653.	1.4	31
74	Phase-field simulations of dynamic wetting of viscoelastic fluids. Journal of Non-Newtonian Fluid Mechanics, 2012, 189-190, 8-13.	1.0	30
75	A biomechanical model for cell polarization and intercalation duringDrosophilagermband extension. Physical Biology, 2015, 12, 056011.	0.8	29
76	ORIENTATION OF SYMMETRIC BODIES FALLING IN A SECOND-ORDER LIQUID AT NONZERO REYNOLDS NUMBER. Mathematical Models and Methods in Applied Sciences, 2002, 12, 1653-1690.	1.7	28
77	Mathematical Simulation of Muscle Cross-Bridge Cycle and Force-Velocity Relationship. Biophysical Journal, 2006, 91, 3653-3663.	0.2	28
78	Motion and coalescence of sessile drops driven by substrate wetting gradient and external flow. Journal of Fluid Mechanics, 2014, 746, 214-235.	1.4	28
79	Relative permeability for two-phase flow through corrugated tubes as model porous media. International Journal of Multiphase Flow, 2012, 47, 85-93.	1.6	27
80	Roll cells and disclinations in sheared nematic polymers. Journal of Fluid Mechanics, 2001, 449, 179-200.	1.4	26
81	Numerical simulations of the flow of dilute polymer solutions in a four-roll mill. Journal of Non-Newtonian Fluid Mechanics, 1997, 72, 187-218.	1.0	24
82	Elastic encapsulation in bicomponent stratified flow of viscoelastic fluids. Journal of Rheology, 2008, 52, 1027-1042.	1.3	24
83	A Phase-Field-Based Hybrid Lattice-Boltzmann Finite-Volume Method and Its Application to Simulate Droplet Motion under Electrowetting Control. Journal of Adhesion Science and Technology, 2012, 26, 1825-1851.	1.4	23
84	A Rho-GTPase based model explains spontaneous collective migration of neural crest cell clusters. Developmental Biology, 2018, 444, S262-S273.	0.9	23
85	Interfacial flows in corrugated microchannels: Flow regimes, transitions and hysteresis. International Journal of Multiphase Flow, 2011, 37, 1266-1276.	1.6	22
86	Viscoelastic effects on drop deformation in a converging pipe flow. Journal of Rheology, 2008, 52, 469-487.	1.3	20
87	Interaction of a pair of ferrofluid drops inÂaÂrotating magnetic field. Journal of Fluid Mechanics, 2018, 846, 121-142.	1.4	20
88	A Biomechanical Model for Fluidization of Cells under Dynamic Strain. Biophysical Journal, 2015, 108, 43-52.	0.2	18
89	Capillary-inertial colloidal catapults upon drop coalescence. Applied Physics Letters, 2016, 109, 011601.	1.5	18
90	Simulation of nanoparticle transport and adsorption in a microfluidic lung-on-a-chip device. Biomicrofluidics, 2020, 14, 044117.	1.2	18

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91	Drag force on a particle straddling a fluid interface: Influence of interfacial deformations. European Physical Journal E, 2020, 43, 13.	0.7	18
92	Viscoelastic flow simulation of polytetrafluoroethylene (PTFE) paste extrusion. Journal of Non-Newtonian Fluid Mechanics, 2008, 153, 25-33.	1.0	16
93	A model of tear-film breakup with continuous mucin concentration and viscosity profiles. Journal of Fluid Mechanics, 2019, 858, 352-376.	1.4	16
94	Orientational defects near colloidal particles in a nematic liquid crystal. Journal of Colloid and Interface Science, 2004, 269, 72-78.	5.0	15
95	Rheology and relaxation processes in a melting thermotropic liquidâ€“crystalline polymer. Journal of Applied Polymer Science, 2007, 104, 3780-3787.	1.3	15
96	The critical pressure for driving a red blood cell through a contracting microfluidic channel. Theoretical and Applied Mechanics Letters, 2015, 5, 227-230.	1.3	15
97	Rod climbing and normal stresses in heavy crude oils at low shears. Journal of Rheology, 1994, 38, 1251-1270.	1.3	14
98	A novel low inertia shear flow instability triggered by a chemical reaction. Physics of Fluids, 2007, 19, .	1.6	14
99	Simulations of the breakup of liquid filaments on a partially wetting solid substrate. Physics of Fluids, 2013, 25, .	1.6	14
100	The motion of a solid sphere suspended by a Newtonian or viscoelastic jet. Journal of Fluid Mechanics, 1996, 315, 367-385.	1.4	13
101	Selective withdrawal of polymer solutions: Computations. Journal of Non-Newtonian Fluid Mechanics, 2010, 165, 839-851.	1.0	13
102	Dynamics of PAR Proteins Explain the Oscillation and Ratcheting Mechanisms in Dorsal Closure. Biophysical Journal, 2018, 115, 2230-2241.	0.2	13
103	Forced dewetting in a capillary tube. Journal of Fluid Mechanics, 2019, 859, 308-320.	1.4	12
104	The negative wake in a second-order fluid. Journal of Non-Newtonian Fluid Mechanics, 1995, 57, 313-320.	1.0	11
105	An analytical flow model for PTFE paste through annular dies. AICHE Journal, 2006, 52, 4028-4038.	1.8	11
106	Heart-shaped bubbles rising in anisotropic liquids. Physics of Fluids, 2007, 19, 041703.	1.6	11
107	Selective withdrawal of polymer solutions: Experiments. Journal of Non-Newtonian Fluid Mechanics, 2010, 165, 829-838.	1.0	11
108	Auto-ejection of liquid drops from capillary tubes. Journal of Fluid Mechanics, 2014, 752, 670-692.	1.4	11

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109	Modeling the Mechanosensitivity of Neutrophils Passing through aÂNarrowÂChannel. Biophysical Journal, 2015, 109, 2235-2245.	0.2	11
110	Modeling cell intercalation duringDrosophilagermband extension. Physical Biology, 2018, 15, 066008.	0.8	11
111	Transient extension and relaxation of a dilute polymer solution in a four-roll mill. Journal of Non-Newtonian Fluid Mechanics, 2000, 90, 117-123.	1.0	10
112	Size Segregation in Sheared Two-Dimensional Polydisperse Foam. Langmuir, 2013, 29, 1370-1378.	1.6	10
113	Boundary conditions at a gel-fluid interface. Physical Review Fluids, 2020, 5, .	1.0	10
114	Effects of elastic anisotropy on the flow and orientation of sheared nematic liquid crystals. Journal of Rheology, 2003, 47, 1051-1070.	1.3	9
115	Dynamic interfacial properties between a flexible-chain polymer and a thermotropic liquid crystalline polymer investigated by an ellipsoidal drop retraction method. Journal of Applied Polymer Science, 2004, 94, 1404-1410.	1.3	9
116	A Rho-GTPase based model explains group advantage in collective chemotaxis of neural crest cells. Physical Biology, 2020, 17, 036002.	0.8	9
117	Size-Differentiated Lateral Migration of Bubbles in Couette Flow of Two-Dimensional Foam. Physical Review Letters, 2012, 109, 084502.	2.9	8
118	Modeling of van der Waals force with smoothed particle hydrodynamics: Application to the rupture of thin liquid films. Applied Mathematical Modelling, 2020, 83, 719-735.	2.2	8
119	Anomalous coalescence in sheared two-dimensional foam. Physical Review E, 2012, 85, 066301.	0.8	7
120	A biomechanical model for the transendothelial migration of cancer cells. Physical Biology, 2020, 17, 036004.	0.8	7
121	Tear-film breakup: The role of membrane-associated mucin polymers. Physical Review E, 2021, 103, 013108.	0.8	7
122	The effect of normal electric field on the evolution of immiscible Rayleigh-Taylor instability. Theoretical and Computational Fluid Dynamics, 2016, 30, 469-483.	0.9	6
123	Bubble migration in two-dimensional foam sheared in a wide-gap Couette device: Effects of non-Newtonian rheology. Journal of Rheology, 2014, 58, 1809-1827.	1.3	4
124	A three-dimensional vertex model for Drosophila salivary gland invagination. Physical Biology, 2021, 18, 046005.	0.8	4
125	An arbitrary Lagrangian-Eulerian method for simulating interfacial dynamics between a hydrogel and a fluid. Journal of Computational Physics, 2022, 451, 110851.	1.9	4
126	Extensional viscosity of a thermotropic liquid crystalline polymer measured by thread disintegration method. Polymer Testing, 2005, 24, 513-518.	2.3	3

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127	Dynamic Simulation of Capillary Breakup of Nematic Fibers: Molecular Orientation and Interfacial Rupture. Journal of Computational and Theoretical Nanoscience, 2010, 7, 683-692.	0.4	3
128	Comment on Machado et al., â€œCytoskeletal turnover and myosin contractility drive cell autonomous oscillations in a model of Drosophila dorsal closureâ€• European Physical Journal: Special Topics, 2014, 223, 1437-1439.	1.2	3
129	Interfacial dynamics in complex fluids. Journal of Fluid Science and Technology, 2016, 11, JFST0021-JFST0021.	0.2	3
130	Phase-field model for elastocapillary flows of liquid crystals. Physical Review E, 2021, 103, 022706.	0.8	3
131	Dielectrophoretic interaction of circular particles in a uniform electric field. European Journal of Mechanics, B/Fluids, 2019, 78, 194-202.	1.2	2
132	A model of tear-film breakup with continuous mucin concentration and viscosity profiles â€“ CORRIGENDUM. Journal of Fluid Mechanics, 2020, 889, .	1.4	2
133	Particle rotation speeds up capillary interactions. European Physical Journal E, 2021, 44, 30.	0.7	2
134	Temporal evolution of microstructure and rheology of sheared two-dimensional foams. Journal of Non-Newtonian Fluid Mechanics, 2015, 223, 1-8.	1.0	1
135	Long term sedimentation of an elliptic disc subject to an electrostatic field using smoothed particle hydrodynamics method. International Journal of Multiphase Flow, 2021, 135, 103524.	1.6	1
136	10.1063/1.4955085.1. , 2016, , .		1
137	Particle trapped at the isotropic-nematic liquid crystal interface: Elastocapillary phenomena and drag forces. Physical Review E, 2022, 105, 044607.	0.8	1
138	Dynamic interfacial tension between a thermotropic liquid-crystalline polymer and a flexible polymer. Journal of Applied Polymer Science, 2006, 101, 3114-3120.	1.3	0
139	Discussion notes on â€œSlip velocity during the flow of a liquid over a solid surfaceâ€• by E. Ruckenstein. European Physical Journal: Special Topics, 2011, 197, 211-211.	1.2	0
140	Occlusion of Micro-Capillaries by Malaria Infected Red Blood Cells. Biophysical Journal, 2013, 104, 150a.	0.2	0
141	A Cell-Level Mechanobiological Model of Drosophila Dorsal Closure. Biophysical Journal, 2013, 104, 477a.	0.2	0
142	Film deposition and transition on a partially wetting plate in dip coating â€“ CORRIGENDUM. Journal of Fluid Mechanics, 2016, 796, 789-789.	1.4	0
143	A mechanical test of the tenertaxis hypothesis for leukocyte diapedesis. European Physical Journal E, 2021, 44, 93.	0.7	0
144	Zieglerâ€“Natta Catalysis. , 2005, , 3247-3259.		0