L Gary Leal

List of Publications by Year
in descending order

95 papers	2,819 citations	147566 31 h-index	197535 49 g-index
99 all docs	99 docs citations	99 times ranked	2163 citing authors

#	Article	IF	Citations
1	Flow-Induced Concentration Nonuniformity and Shear Banding in Entangled Polymer Solutions. Physical Review Letters, 2021, 126, 207801.	2.9	13
2	Bayesian estimations of orientation distribution functions from small-angle scattering enable direct prediction of mechanical stress in anisotropic materials. Physical Review Materials, 2021, 5, .	0.9	8
3	Modeling orthogonal superposition rheometry to probe nonequilibrium dynamics of entangled polymers. Journal of Rheology, 2021, 65, 983-998.	1.3	5
4	Predictions for flow-induced scission in well-entangled living polymers: The â€œliving Rolie-Polyâ€• model. Journal of Rheology, 2021, 65, 959-982.	1.3	7
5	Universal Gas Adsorption Mechanism for Flat Nanobubble Morphologies. Physical Review Letters, 2020, 125, 146101.	2.9	24
6	Shear induced demixing in bidisperse and polydisperse polymer blends: Predictions from a multifluid model. Journal of Rheology, 2020, 64, 1391-1408.	1.3	10
7	Coupled nonhomogeneous flows and flow-enhanced concentration fluctuations during startup shear of entangled polymer solutions. Physical Review Fluids, 2020, 5, .	1.0	6
8	Does shear induced demixing resemble a thermodynamically driven instability?. Journal of Rheology, 2019, 63, 335-359.	1.3	10
9	An integrated boundary approach for colloidal suspensions simulated using smoothed dissipative particle dynamics. Computers and Fluids, 2019, 179, 672-686.	1.3	1
10	Nonlinear rheology of polydisperse blends of entangled linear polymers: Rolie-Double-Poly models. Journal of Rheology, 2019, 63, 71-91.	1.3	40
11	Nanoparticle transport across model cellular membranes: when do solubility-diffusion models break down?. Journal Physics D: Applied Physics, 2018, 51, 294004.	1.3	15
12	Concentration fluctuations in polymer solutions under mixed flow. Journal of Rheology, 2017, 61, 711-730.	1.3	8
13	Distinguishing shear banding from shear thinning in flows with a shear stress gradient. Rheologica Acta, 2017, 56, 1007-1032.	1.1	17
14	Coupling discrete and continuum concentration particle models for multiscale and hybrid molecular-continuum simulations. Journal of Chemical Physics, 2017, 147, 234112.	1.2	12
15	Multiscale simulation of ideal mixtures using smoothed dissipative particle dynamics. Journal of Chemical Physics, 2016, 144, 084115.	1.2	17
16	Shear banding predictions for the two-fluid Rolie-Poly model. Journal of Rheology, 2016, 60, 927-951.	1.3	25
17	Surface viscosity and Marangoni stresses at surfactant laden interfaces. Journal of Fluid Mechanics, 2016, 792, 712-739.	1.4	57
18	The 2015 FranÃ§ois Naftali Frenkiel Award for Fluid Mechanics. Physics of Fluids, 2016, 28, 010201.	1.6	0

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19	Coalescence of droplets due to a constant force interaction in a quiescent viscous fluid. Physical Review Fluids, 2016, 1, .	1.0	19
20	Hybrid molecular-continuum simulations using smoothed dissipative particle dynamics. Journal of Chemical Physics, 2015, 142, 044101.	1.2	32
21	Surface shear inviscidity of soluble surfactants. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 3677-3682.	3.3	102
22	Announcement: Changes in the Editorial Organization of Physics of Fluids. Physics of Fluids, 2014, 26, 070201.	1.6	0
23	Production of W/O/W double emulsions. Part I: Visual observation of deformation and breakup of double emulsion drops and coalescence of the inner droplets. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2014, 461, 336-343.	2.3	32
24	Direct measurement of interaction forces between charged multilamellar vesiclesâ€. Soft Matter, 2014, 10, 7769-7780.	1.2	15
25	Adsorption Energies of Poly(ethylene oxide)-Based Surfactants and Nanoparticles on an Airâ€“Water Surface. Langmuir, 2014, 30, 110-119.	1.6	26
26	A study of shear banding in polymer solutions. Physics of Fluids, 2014, 26, .	1.6	55
27	Origins of Microstructural Transformations in Charged Vesicle Suspensions: The Crowding Hypothesis. Langmuir, 2014, 30, 10176-10187.	1.6	15
28	Local, Real-Time Measurement of Drying Films of Aqueous Polymer Solutions Using Active Microrheology. Langmuir, 2014, 30, 5230-5237.	1.6	11
29	Direct measurement of the interaction of model food emulsion droplets adhering by arrested coalescence. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2014, 441, 459-465.	2.3	9
30	Direct Measurements of Effect of Counterion Concentration on Mechanical Properties of Cationic Vesicles. Langmuir, 2013, 29, 14057-14065.	1.6	10
31	Cantilevered-Capillary Force Apparatus for Measuring Multiphase Fluid Interactions. Langmuir, 2013, 29, 4715-4725.	1.6	21
32	Multiscale modeling with smoothed dissipative particle dynamics. Journal of Chemical Physics, 2013, 138, 234105.	1.2	32
33	Shear banding in polymer solutions. Physics of Fluids, 2013, 25, .	1.6	78
34	Announcement: New Format for <i>Physics of Fluids</i>. Physics of Fluids, 2012, 24, .	1.6	0
35	A test of systematic coarse-graining of molecular dynamics simulations: Thermodynamic properties. Journal of Chemical Physics, 2012, 137, 164106.	1.2	54
36	The effect of interfacial slip on the rheology of a dilute emulsion of drops for small capillary numbers. Journal of Rheology, 2012, 56, 1555-1587.	1.3	25

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37	The effect of interfacial slip on the dynamics of a drop in flow: Part I. Stretching, relaxation, and breakup. Journal of Rheology, 2012, 56, 45-97.	1.3	24
38	Adhesive Interactions between Vesicles in the Strong Adhesion Limit. Langmuir, 2011, 27, 59-73.	1.6	36
39	Announcement: New Format for Physics of Fluids. Physics of Fluids, 2011, 23, 120201.	1.6	0
40	Microfabricated deflection tensiometers for insoluble surfactants. Applied Physics Letters, 2010, 97, 133505.	1.5	12
41	A scaling theory for the hydrodynamic interaction between a pair of vesicles or capsules. Physics of Fluids, 2010, 22, .	1.6	18
42	Dilution Technique To Determine the Hydrodynamic Volume Fraction of a Vesicle Suspension. Langmuir, 2010, 26, 15169-15176.	1.6	16
43	Drop deformation and break-up in concentrated suspensions. Journal of Rheology, 2010, 54, 981-1008.	1.3	20
44	Three-dimensional stability of a thin film between two approaching drops. Physics of Fluids, 2009, 21, .	1.6	15
45	Deformation of a viscoelastic drop in planar extensional flows of a Newtonian fluid. Journal of Non-Newtonian Fluid Mechanics, 2009, 160, 176-180.	1.0	24
46	Stress Relaxation of Comb Polymers with Short Branches. Macromolecules, 2009, 42, 9592-9608.	2.2	63
47	Viscous coalescence of expanding low-viscosity drops; the dueling drops experiment. Journal of Colloid and Interface Science, 2008, 319, 263-269.	5.0	14
48	Effect of Multiple Branch Points on Non-Linear Rheology. AIP Conference Proceedings, 2008, , .	0.3	0
49	The mechanism of surfactant effects on drop coalescence. Physics of Fluids, 2008, 20, .	1.6	90
50	Editorial: Fifty years of <i>Physics of Fluids</i>. Physics of Fluids, 2008, 20, .	1.6	1
51	Coalescence of two equal-sized deformable drops in an axisymmetric flow. Physics of Fluids, 2007, 19, .	1.6	103
52	Transient surface patterns during adhesion and coalescence of thin liquid films. Soft Matter, 2007, 3, 88-93.	1.2	26
53	Interfacial Activity of Polymer-Coated Gold Nanoparticles. Langmuir, 2007, 23, 12497-12502.	1.6	22
54	Experimental investigation of the effects of copolymer surfactants on flow-induced coalescence of drops. Physics of Fluids, 2007, 19, 023102.	1.6	38

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55	Linear stability of a draining film squeezed between two approaching droplets. Journal of Colloid and Interface Science, 2007, 307, 188-202.	5.0	27
56	Droplet coalescence and breakup with application to polymer blending. Central South University, 2007, 14, 1-5.	0.5	14
57	Shear Rheology of Asymmetric Star Polymers. Macromolecules, 2006, 39, 4605-4614.	2.2	8
58	Effect of overall drop deformation on flow-induced coalescence at low capillary numbers. Physics of Fluids, 2006, 18, 013602.	1.6	52
59	Two touching spherical drops in uniaxial extensional flow: Analytic solution to the creeping flow problem. Journal of Colloid and Interface Science, 2005, 289, 262-270.	5.0	7
60	Rheo-Optical Evidence of CCR in an Entangled Four-Arm Star. Macromolecules, 2005, 38, 1451-1455.	2.2	14
61	Viscosity ratio effects on the coalescence of two equal-sized drops in a two-dimensional linear flow. Journal of Fluid Mechanics, 2005, 525, 355-379.	1.4	81
62	Experimental analysis of the coalescence process via head-on collisions in a time-dependent flow. Physics of Fluids, 2004, 16, 3945-3954.	1.6	35
63	Study of molecular weight effects on coalescence: Interface slip layer. Journal of Rheology, 2003, 47, 911-942.	1.3	41
64	Texture evolution of sheared liquid crystalline polymers: Numerical predictions of roll-cells instability, director turbulence, and striped texture with a molecular model. Journal of Rheology, 2003, 47, 1417-1444.	1.3	14
65	Hydrodynamic Interaction between Spheres Coated with Deformable Thin Liquid Films. Journal of Colloid and Interface Science, 2002, 250, 457-465.	5.0	15
66	Transient director patterns upon flow start-up of nematic liquid crystals (an explanation for stress) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50	1.1	1
67	Drop deformation, breakup, and coalescence with compatibilizer. Physics of Fluids, 2000, 12, 484-489.	1.6	199
68	A differential constitutive equation for entangled polymer solutions. Journal of Non-Newtonian Fluid Mechanics, 1999, 80, 115-134.	1.0	17
69	Flow-aligning and tumbling in small-molecule liquid crystals: pure components and mixtures. Rheologica Acta, 1999, 38, 183-197.	1.1	25
70	Surfactant and viscoelastic effects on drop deformation in 2-D extensional flow. AICHE Journal, 1999, 45, 929-937.	1.8	35
71	Effects of flexibility on liquid crystalline polymer behavior: The nematic broken rod. Journal of Polymer Science, Part B: Polymer Physics, 1999, 37, 281-300.	2.4	3
72	Comparison of dumbell-based theory and experiment for a dilute polymer solution in a corotating two-roll mill. Journal of Rheology, 1999, 43, 197-218.	1.3	57

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73	Experimental trajectories of two drops in planar extensional flow. Physics of Fluids, 1999, 11, 971-981.	1.6	19
74	The response of entangled polymer solutions to step changes of shear rate: Signatures of segmental stretch?. Journal of Polymer Science, Part B: Polymer Physics, 1998, 36, 265-280.	2.4	30
75	A closure approximation for liquid-crystalline polymer models based on parametric density estimation. Journal of Rheology, 1998, 42, 177-201.	1.3	77
76	Experimental studies of an entangled polystyrene solution in steady state mixed type flows. Journal of Rheology, 1998, 42, 671-695.	1.3	14
77	The dynamics of ultradilute polymer solutions in transient flow: Comparison of dumbbell-based theory and experiment. Journal of Rheology, 1998, 42, 1039-1058.	1.3	31
78	Timeâ€resolved velocity gradient and optical anisotropy in linear flow by photon correlation spectroscopy. Physics of Fluids, 1994, 6, 3519-3534.	1.6	18
79	A new computational method for the solution of flow problems of microstructured fluids. Part 2. Inhomogeneous shear flow of a suspension. Journal of Fluid Mechanics, 1994, 262, 171-204.	1.4	32
80	Symposium on Micromechanical Models for Complex Fluids. Applied Mechanics Reviews, 1994, 47, S228-S228.	4.5	0
81	Numerical solutions for the deformation of a bubble rising in dilute polymeric fluids. Physics of Fluids A, Fluid Dynamics, 1993, 5, 1315-1332.	1.6	42
82	Microstructure suspended in three-dimensional flows. Journal of Fluid Mechanics, 1993, 250, 143-167.	1.4	24
83	A new computational method for the solution of flow problems of microstructured fluids. Part 1. Theory. Journal of Fluid Mechanics, 1992, 242, 549-576.	1.4	37
84	Rigid particles suspended in time-dependent flows: irregular versus regular motion, disorder versus order. Journal of Fluid Mechanics, 1992, 237, 33-56.	1.4	35
85	Flow birefringence studies of a concentrated polystyrene solution in a two-roll mill. I. Steady flow and start-up of steady flow. Journal of Polymer Science, Part B: Polymer Physics, 1992, 30, 1329-1349.	2.4	15
86	On the dynamics of suspended microstructure in unsteady, spatially inhomogeneous, two-dimensional fluid flows. Journal of Fluid Mechanics Digital Archive, 1991, 228, 207.	0.6	14
87	Strong flows of dilute suspensions of microstructure. Physics of Fluids A, Fluid Dynamics, 1991, 3, 1438-1438.	1.6	1
88	The onset of chaotic oscillations and rapid growth of a spherical bubble at subcritical conditions in an incompressible liquid. Physics of Fluids A, Fluid Dynamics, 1991, 3, 551-555.	1.6	13
89	A Newton's method scheme for solving free-surface flow problems. International Journal for Numerical Methods in Fluids, 1989, 9, 1469-1486.	0.9	11
90	Existence of solutions for all Deborah numbers for a non-Newtonian model modified to include diffusion. Journal of Non-Newtonian Fluid Mechanics, 1989, 33, 257-287.	1.0	134

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91	Buoyancy-driven motion of a deformable drop through a quiescent liquid at intermediate Reynolds numbers. Journal of Fluid Mechanics, 1989, 208, 161-192.	1.4	141
92	Particle motion in Stokes flow near a plane fluidâ€“fluid interface. Part 2. Linear shear and axisymmetric straining flows. Journal of Fluid Mechanics, 1984, 149, 275.	1.4	38
93	Particle motion in Stokes flow near a plane fluid-fluid interface. Part 1. Slender body in a quiescent fluid. Journal of Fluid Mechanics, 1983, 136, 393.	1.4	34
94	Interfacial resistance to interphase mass transfer in quiescent two-phase systems. AICHE Journal, 1978, 24, 246-254.	1.8	29
95	Light scattering from spheroids in shear flows. I. The orientation correlation. Journal of Chemical Physics, 1978, 68, 5348-5356.	1.2	12