Randy H Ewoldt

List of Publications by Year
in descending order

90 papers	5,845 citations	126708 33 h-index	74018 75 g-index
91 all docs	91 docs citations	91 times ranked	4787 citing authors

#	Article	IF	Citations
1	A review of nonlinear oscillatory shear tests: Analysis and application of large amplitude oscillatory shear (LAOS). Progress in Polymer Science, 2011, 36, 1697-1753.	11.8	1,109
2	New measures for characterizing nonlinear viscoelasticity in large amplitude oscillatory shear. Journal of Rheology, 2008, 52, 1427-1458.	1.3	787
3	<i>Helicobacter pylori</i> moves through mucus by reducing mucin viscoelasticity. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 14321-14326.	3.3	347
4	Large amplitude oscillatory shear of pseudoplastic and elastoviscoplastic materials. Rheologica Acta, 2010, 49, 191-212.	1.1	273
5	Rheology of Gastric Mucin Exhibits a pH-Dependent Solâˆ’Gel Transition. Biomacromolecules, 2007, 8, 1580-1586.	2.6	250
6	Describing and prescribing the constitutive response of yield stress fluids using large amplitude oscillatory shear stress (LAOStress). Journal of Rheology, 2013, 57, 27-70.	1.3	218
7	Rheological fingerprinting of gastropod pedal mucus and synthetic complex fluids for biomimicking adhesive locomotion. Soft Matter, 2007, 3, 634.	1.2	192
8	Experimental Challenges of Shear Rheology: How to Avoid Bad Data. Biological and Medical Physics Series, 2015, , 207-241.	0.3	148
9	Large amplitude oscillatory shear flow of gluten dough: A model power-law gel. Journal of Rheology, 2011, 55, 627-654.	1.3	135
10	On secondary loops in LAOS via self-intersection of Lissajousâ€“Bowditch curves. Rheologica Acta, 2010, 49, 213-219.	1.1	126
11	Low-dimensional intrinsic material functions for nonlinear viscoelasticity. Rheologica Acta, 2013, 52, 201-219.	1.1	125
12	Defining nonlinear rheological material functions for oscillatory shear. Journal of Rheology, 2013, 57, 177-195.	1.3	115
13	Quantifying compressive forces between living cell layers and within tissues using elastic round microgels. Nature Communications, 2018, 9, 1878.	5.8	91
14	Mechanically active materials in three-dimensional mesostructures. Science Advances, 2018, 4, eaat8313.	4.7	89
15	Design of yield-stress fluids: a rheology-to-structure inverse problem. Soft Matter, 2017, 13, 7578-7594.	1.2	83
16	Mapping thixo-elasto-visco-plastic behavior. Rheologica Acta, 2017, 56, 195-210.	1.1	79
17	Temporal Modulation of Stem Cell Activity Using Magnetoactive Hydrogels. Advanced Healthcare Materials, 2016, 5, 2536-2544.	3.9	73
18	Nonlinear viscoelastic biomaterials: meaningful characterization and engineering inspiration. Integrative and Comparative Biology, 2009, 49, 40-50.	0.9	67

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19	Designing and transforming yield-stress fluids. Current Opinion in Solid State and Materials Science, 2019, 23, 100758.	5.6	66
20	Solution Properties and Practical Limits of Concentrated Electrolytes for Nonaqueous Redox Flow Batteries. Journal of Physical Chemistry C, 2018, 122, 8159-8172.	1.5	59
21	Precision rheometry: Surface tension effects on low-torque measurements in rotational rheometers. Journal of Rheology, 2013, 57, 1515-1532.	1.3	55
22	Dynamic Remodeling of Covalent Networks via Ring-Opening Metathesis Polymerization. ACS Macro Letters, 2018, 7, 933-937.	2.3	54
23	Regulating dynamic signaling between hematopoietic stem cells and niche cells via a hydrogel matrix. Biomaterials, 2017, 125, 54-64.	5.7	53
24	Effect of the environmental humidity on the bulk, interfacial and nanoconfined properties of an ionic liquid. Physical Chemistry Chemical Physics, 2016, 18, 22719-22730.	1.3	51
25	Constitutive model fingerprints in medium-amplitude oscillatory shear. Journal of Rheology, 2015, 59, 557-592.	1.3	50
26	The general low-frequency prediction for asymptotically nonlinear material functions in oscillatory shear. Journal of Rheology, 2014, 58, 891-910.	1.3	47
27	Linear and nonlinear rheology and structural relaxation in dense glassy and jammed soft repulsive pNIPAM microgel suspensions. Soft Matter, 2019, 15, 1038-1052.	1.2	44
28	A simple thixotropicâ€"viscoelastic constitutive model produces unique signatures in large-amplitude oscillatory shear (LAOS). Journal of Non-Newtonian Fluid Mechanics, 2014, 208-209, 27-41.	1.0	43
29	Acid-Triggered, Acid-Generating, and Self-Amplifying Degradable Polymers. Journal of the American Chemical Society, 2019, 141, 2838-2842.	6.6	43
30	Extremely Soft: Design with Rheologically Complex Fluids. Soft Robotics, 2014, 1, 12-20.	4.6	42
31	Extending yield-stress fluid paradigms. Journal of Rheology, 2018, 62, 357-369.	1.3	39
32	Controllable adhesion using field-activated fluids. Physics of Fluids, 2011, 23, .	1.6	37
33	Particleâ€Free Emulsions for 3D Printing Elastomers. Advanced Functional Materials, 2018, 28, 1707032.	7.8	37
34	Quantitative rheological model selection: Good fits versus credible models using Bayesian inference. Journal of Rheology, 2015, 59, 667-701.	1.3	36
35	A strain stiffening theory for transient polymer networks under asymptotically nonlinear oscillatory shear. Journal of Rheology, 2017, 61, 643-665.	1.3	34
36	Dual function organic active materials for nonaqueous redox flow batteries. Materials Advances, 2021, 2, 1390-1401.	2.6	33

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37	Designing Complex Fluids. Annual Review of Fluid Mechanics, 2022, 54, 413-441.	10.8	32
38	Flow accelerates adhesion between functional polyethylene and polyurethane. AIChE Journal, 2011, 57, 3496-3506.	1.8	31
39	Assessing the impact of electrolyte conductivity and viscosity on the reactor cost and pressure drop of redox-active polymer flow batteries. Journal of Power Sources, 2017, 361, 334-344.	4.0	31
40	Modulation of the Electrochemical Reactivity of Solubilized Redox Active Polymers via Polyelectrolyte Dynamics. Journal of the American Chemical Society, 2018, 140, 2093-2104.	6.6	30
41	Sticking and splashing in yield-stress fluid drop impacts on coated surfaces. Physics of Fluids, 2015, 27, .	1.6	27
42	Nonlinear viscoelasticity of fat crystal networks. Rheologica Acta, 2018, 57, 251-266.	1.1	27
43	A critical gel fluid with high extensibility: The rheology of chewing gum. Journal of Rheology, 2014, 58, 821-838.	1.3	26
44	Frequency-sweep medium-amplitude oscillatory shear (MAOS). Journal of Rheology, 2018, 62, 277-293.	1.3	26
45	Inferring the Nonlinear Mechanisms of a Reversible Network. Macromolecules, 2018, 51, 8772-8789.	2.2	25
46	Experimental Protocols for Studying Organic Non-aqueous Redox Flow Batteries. ACS Energy Letters, 2021, 6, 3932-3943.	8.8	25
47	Automatic control: the vertebral column of dogfish sharks behaves as a continuously variable transmission with smoothly shifting functions. Journal of Experimental Biology, 2016, 219, 2908-2919.	0.8	22
48	Plasmonic Optical Trapping in Biologically Relevant Media. PLoS ONE, 2014, 9, e93929.	1.1	21
49	Time-strain separability in medium-amplitude oscillatory shear. Physics of Fluids, 2019, 31, .	1.6	20
50	Reactive coupling between immiscible polymer chains: Acceleration by compressive flow. AIChE Journal, 2013, 59, 3391-3402.	1.8	19
51	Self-Assembled Solute Networks in Crowded Electrolyte Solutions and Nanoconfinement of Charged Redoxmer Molecules. Journal of Physical Chemistry B, 2020, 124, 10226-10236.	1.2	18
52	Base-triggered self-amplifying degradable polyurethanes with the ability to translate local stimulation to continuous long-range degradation. Chemical Science, 2020, 11, 3326-3331.	3.7	18
53	Non-integer asymptotic scaling of a thixotropic-viscoelastic model in large-amplitude oscillatory shear. Journal of Non-Newtonian Fluid Mechanics, 2016, 227, 80-89.	1.0	17
54	On fitting data for parameter estimates: residual weighting and data representation. Rheologica Acta, 2019, 58, 341-359.	1.1	17

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55	Viscous flow properties and hydrodynamic diameter of phenothiazine-based redox-active molecules in different supporting salt environments. Physics of Fluids, 2020, 32, .	1.6	17
56	Single-point parallel disk correction for asymptotically nonlinear oscillatory shear. Rheologica Acta, 2015, 54, 223-233.	1.1	16
57	Thermoresponsive Stiffening with Microgel Particles in a Semiflexible Fibrin Network. Macromolecules, 2019, 52, 3029-3041.	2.2	15
58	TEMPO allegro: liquid catholyte redoxmers for nonaqueous redox flow batteries. Journal of Materials Chemistry A, 2021, 9, 16769-16775.	5.2	15
59	An Ontology for Large Amplitude Oscillatory Shear Flow. AIP Conference Proceedings, 2008, , .	0.3	13
60	Setting Material Function Design Targets for Linear Viscoelastic Materials and Structures. Journal of Mechanical Design, Transactions of the ASME, 2016, 138, .	1.7	13
61	Concentration-independent mechanics and structure of hagfish slime. Acta Biomaterialia, 2018, 79, 123-134.	4.1	13
62	Continuous relaxation spectra for constitutive models in medium-amplitude oscillatory shear. Journal of Rheology, 2018, 62, 1271-1298.	1.3	13
63	First-harmonic nonlinearities can predict unseen third-harmonics in medium-amplitude oscillatory shear (MAOS). Korea Australia Rheology Journal, 2018, 30, 1-10.	0.7	13
64	Viscoplastic drop impact on thin films. Journal of Fluid Mechanics, 2020, 891, .	1.4	13
65	Linear and nonlinear viscoelasticity of concentrated thermoresponsive microgel suspensions. Journal of Colloid and Interface Science, 2021, 601, 886-898.	5.0	12
66	Design and fabrication of ceramic beads by the vibration method. Journal of the European Ceramic Society, 2015, 35, 3587-3594.	2.8	11
67	Questioning a fundamental assumption of rheology: Observation of noninteger power expansions. Journal of Rheology, 2020, 64, 625-635.	1.3	10
68	Self-adaptive hydrogels to mineralization. Soft Matter, 2017, 13, 5469-5480.	1.2	9
69	The weakly nonlinear response and nonaffine interpretation of the Johnsonâ€“Segalman/Gordonâ€“Schowalter model. Journal of Rheology, 2020, 64, 1409-1424.	1.3	9
70	Predictions for the northern coast of the shear rheology map: XXLAOS. Journal of Fluid Mechanics, 2016, 798, 1-4.	1.4	8
71	Design-Driven Modeling of Surface-Textured Full-Film Lubricated Sliding: Validation and Rationale of Nonstandard Thrust Observations. Tribology Letters, 2017, 65, 1.	1.2	8
72	Mapping linear viscoelasticity for design and tactile intuition. Applied Rheology, 2019, 29, 141-161.	3.5	8

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73	Uncertainty propagation in simulation predictions of generalized Newtonian fluid flows. Journal of Non-Newtonian Fluid Mechanics, 2019, 271, 104138.	1.0	7
74	Unravelling hagfish slime. Journal of the Royal Society Interface, 2019, 16, 20180710.	1.5	7
75	Integration of colloids into a semi-flexible network of fibrin. Soft Matter, 2017, 13, 1430-1443.	1.2	6
76	Simultaneous design of non-Newtonian lubricant and surface texture using surrogate-based multiobjective optimization. Structural and Multidisciplinary Optimization, 2019, 60, 99-116.	1.7	6
77	Thixotropy in viscoplastic drop impact on thin films. Physical Review Fluids, 2021, 6, .	1.0	6
78	Gelation under stress: impact of shear flow on the formation and mechanical properties of methylcellulose hydrogels. Soft Matter, 2022, 18, 1554-1565.	1.2	5
79	Probing Shear-Banding Transitions of Entangled Liquids Using Large Amplitude Oscillatory Shearing (LAOS) Deformations. AIP Conference Proceedings, 2008, , .	0.3	4
80	Early-Stage Design of Rheologically Complex Materials via Material Function Design Targets. , 2013, , .		4
81	Intrinsic nonlinearities in the mechanics of hard sphere suspensions. Soft Matter, 2016, 12, 7655-7662.	1.2	4
82	Particle contact dynamics as the origin for noninteger power expansion rheology in attractive suspension networks. Journal of Rheology, 2022, 66, 17-30.	1.3	4
83	QUANTITATIVE MEASURES OF YIELD-STRESS FLUID DROP IMPACTS ON COATED SURFACES. Atomization and Sprays, 2017, 27, 337-343.	0.3	3
84	Low Reynolds number friction reduction with polymers and textures. Journal of Non-Newtonian Fluid Mechanics, 2019, 273, 104167.	1.0	3
85	Design and Modeling of a Passive Hydraulic Device for Muscle Spasticity Simulation1. Journal of Medical Devices, Transactions of the ASME, 2016, 10, .	0.4	2
86	Exploiting Nonlinear Elasticity for Anomalous Magnetoresponsive Stiffening. ACS Macro Letters, 2020, 9, 1632-1637.	2.3	2
87	Optomechanical microrheology of single adherent cancer cells. APL Bioengineering, 2018, 2, 016108.	3.3	1
88	Emulsions: Particle-Free Emulsions for 3D Printing Elastomers (Adv. Funct. Mater. 21/2018). Advanced Functional Materials, 2018, 28, 1870141.	7.8	1
89	3D Printing Highâ€Resolution Conductive Elastomeric Structures with a Solid Particleâ€Free Emulsion Ink. Advanced Engineering Materials, 0, , 2100902.	1.6	1
90	Chemical Amplification of Subthreshold Base Triggers To Drive Solâ€"Gel Transitions in Polymers. , 0, , 1503-1510.		0