Randy Ewoldt

List of Publications by Year
in descending order

118 papers	6,504 citations	94269 37 h-index	66788 78 g-index
120 all docs	120 docs citations	120 times ranked	5576 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	A microcomposite hydrogel for repeated on-demand ultrasound-triggered drug delivery. Biomaterials, 2010, 31, 5208-5217.	5.7	118
13	Defining nonlinear rheological material functions for oscillatory shear. Journal of Rheology, 2013, 57, 177-195.	1.3	115
14	Quantifying compressive forces between living cell layers and within tissues using elastic round microgels. Nature Communications, 2018, 9, 1878.	5.8	91
15	Mechanically active materials in three-dimensional mesostructures. Science Advances, 2018, 4, eaat8313.	4.7	89
16	Design of yield-stress fluids: a rheology-to-structure inverse problem. Soft Matter, 2017, 13, 7578-7594.	1.2	83
17	Mapping thixo-elasto-visco-plastic behavior. Rheologica Acta, 2017, 56, 195-210.	1.1	79
18	Temporal Modulation of Stem Cell Activity Using Magnetoactive Hydrogels. Advanced Healthcare Materials, 2016, 5, 2536-2544.	3.9	73

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19	Nonlinear viscoelastic biomaterials: meaningful characterization and engineering inspiration. Integrative and Comparative Biology, 2009, 49, 40-50.	0.9	67
20	Designing and transforming yield-stress fluids. Current Opinion in Solid State and Materials Science, 2019, 23, 100758.	5.6	66
21	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
22	How Dr. Malcom M. Cross may have tackled the development of â€œAn apparent viscosity function for shear thickening fluidsâ€. Journal of Non-Newtonian Fluid Mechanics, 2011, 166, 1421-1424.	1.0	58
23	Precision rheometry: Surface tension effects on low-torque measurements in rotational rheometers. Journal of Rheology, 2013, 57, 1515-1532.	1.3	55
24	Dynamic Remodeling of Covalent Networks via Ring-Opening Metathesis Polymerization. ACS Macro Letters, 2018, 7, 933-937.	2.3	54
25	Regulating dynamic signaling between hematopoietic stem cells and niche cells via a hydrogel matrix. Biomaterials, 2017, 125, 54-64.	5.7	53
26	Turbulent and transitional velocity measurements in a rectangular microchannel using microscopic particle image velocimetry. Experimental Thermal and Fluid Science, 2005, 29, 435-446.	1.5	52
27	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
28	Constitutive model fingerprints in medium-amplitude oscillatory shear. Journal of Rheology, 2015, 59, 557-592.	1.3	50
29	The general low-frequency prediction for asymptotically nonlinear material functions in oscillatory shear. Journal of Rheology, 2014, 58, 891-910.	1.3	47
30	Operating windows for oscillatory interfacial shear rheology. Journal of Rheology, 2020, 64, 141-160.	1.3	47
31	Nanometer-scale flow of molten polyethylene from a heated atomic force microscope tip. Nanotechnology, 2012, 23, 215301.	1.3	45
32	Non-linear viscoelasticity of hagfish slime. International Journal of Non-Linear Mechanics, 2011, 46, 627-636.	1.4	44
33	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
34	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
35	Acid-Triggered, Acid-Generating, and Self-Amplifying Degradable Polymers. Journal of the American Chemical Society, 2019, 141, 2838-2842.	6.6	43
36	Extremely Soft: Design with Rheologically Complex Fluids. Soft Robotics, 2014, 1, 12-20.	4.6	42

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37	Extending yield-stress fluid paradigms. Journal of Rheology, 2018, 62, 357-369.	1.3	39
38	From ultra-soft slime to hard Â-keratins: The many lives of intermediate filaments. Integrative and Comparative Biology, 2009, 49, 32-39.	0.9	38
39	Controllable adhesion using field-activated fluids. Physics of Fluids, 2011, 23, .	1.6	37
40	Particleâ€Free Emulsions for 3D Printing Elastomers. Advanced Functional Materials, 2018, 28, 1707032.	7.8	37
41	Vibration of fresh concrete understood through the paradigm of granular physics. Cement and Concrete Research, 2019, 115, 31-42.	4.6	37
42	Quantitative rheological model selection: Good fits versus credible models using Bayesian inference. Journal of Rheology, 2015, 59, 667-701.	1.3	36
43	Asymmetric surface textures decrease friction with Newtonian fluids in full film lubricated sliding contact. Tribology International, 2016, 97, 490-498.	3.0	34
44	A strain stiffening theory for transient polymer networks under asymptotically nonlinear oscillatory shear. Journal of Rheology, 2017, 61, 643-665.	1.3	34
45	Dual function organic active materials for nonaqueous redox flow batteries. Materials Advances, 2021, 2, 1390-1401.	2.6	33
46	Designing Complex Fluids. Annual Review of Fluid Mechanics, 2022, 54, 413-441.	10.8	32
47	Flow accelerates adhesion between functional polyethylene and polyurethane. AIChE Journal, 2011, 57, 3496-3506.	1.8	31
48	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
49	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
50	Modulating Noncovalent Cross-links with Molecular Switches. Journal of the American Chemical Society, 2019, 141, 3597-3604.	6.6	28
51	Sticking and splashing in yield-stress fluid drop impacts on coated surfaces. Physics of Fluids, 2015, 27, .	1.6	27
52	Nonlinear viscoelasticity of fat crystal networks. Rheologica Acta, 2018, 57, 251-266.	1.1	27
53	A critical gel fluid with high extensibility: The rheology of chewing gum. Journal of Rheology, 2014, 58, 821-838.	1.3	26
54	Frequency-sweep medium-amplitude oscillatory shear (MAOS). Journal of Rheology, 2018, 62, 277-293.	1.3	26

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55	Dynamic mechanical measurement of the viscoelasticity of single adherent cells. Applied Physics Letters, 2016, 108, .	1.5	25
56	Inferring the Nonlinear Mechanisms of a Reversible Network. Macromolecules, 2018, 51, 8772-8789.	2.2	25
57	Experimental Protocols for Studying Organic Non-aqueous Redox Flow Batteries. ACS Energy Letters, 2021, 6, 3932-3943.	8.8	25
58	Relaxation of Vitrimers with Kinetically Distinct Mixed Dynamic Bonds. Macromolecules, 2022, 55, 4450-4458.	2.2	24
59	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
60	Selfâ€Regulative Direct Ink Writing of Frontally Polymerizing Thermoset Polymers. Advanced Materials Technologies, 2022, 7, .	3.0	22
61	Plasmonic Optical Trapping in Biologically Relevant Media. PLoS ONE, 2014, 9, e93929.	1.1	21
62	Time-strain separability in medium-amplitude oscillatory shear. Physics of Fluids, 2019, 31, .	1.6	20
63	Reactive coupling between immiscible polymer chains: Acceleration by compressive flow. AICHE Journal, 2013, 59, 3391-3402.	1.8	19
64	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
65	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
66	Crowded electrolytes containing redoxmers in different states of charge: Solution structure, properties, and fundamental limits on energy density. Journal of Molecular Liquids, 2021, 334, 116533.	2.3	18
67	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
68	On fitting data for parameter estimates: residual weighting and data representation. Rheologica Acta, 2019, 58, 341-359.	1.1	17
69	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
70	Single-point parallel disk correction for asymptotically nonlinear oscillatory shear. Rheologica Acta, 2015, 54, 223-233.	1.1	16
71	Thermoresponsive Stiffening with Microgel Particles in a Semiflexible Fibrin Network. Macromolecules, 2019, 52, 3029-3041.	2.2	15
72	TEMPO allegro: liquid catholyte redoxmers for nonaqueous redox flow batteries. Journal of Materials Chemistry A, 2021, 9, 16769-16775.	5.2	15

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73	An Ontology for Large Amplitude Oscillatory Shear Flow. AIP Conference Proceedings, 2008, , .	0.3	13
74	Shear stress characteristics of microtextured surfaces in gap-controlled hydrodynamic lubrication. Tribology International, 2015, 82, 123-132.	3.0	13
75	Setting Material Function Design Targets for Linear Viscoelastic Materials and Structures. Journal of Mechanical Design, Transactions of the ASME, 2016, 138, .	1.7	13
76	Concentration-independent mechanics and structure of hagfish slime. Acta Biomaterialia, 2018, 79, 123-134.	4.1	13
77	Continuous relaxation spectra for constitutive models in medium-amplitude oscillatory shear. Journal of Rheology, 2018, 62, 1271-1298.	1.3	13
78	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
79	Viscoplastic drop impact on thin films. Journal of Fluid Mechanics, 2020, 891, .	1.4	13
80	Linear and nonlinear viscoelasticity of concentrated thermoresponsive microgel suspensions. Journal of Colloid and Interface Science, 2021, 601, 886-898.	5.0	12
81	Design and fabrication of ceramic beads by the vibration method. Journal of the European Ceramic Society, 2015, 35, 3587-3594.	2.8	11
82	Enhancing Full-Film Lubrication Performance Via Arbitrary Surface Texture Design. Journal of Mechanical Design, Transactions of the ASME, 2017, 139, .	1.7	11
83	Field sensitivity of flow predictions to rheological parameters. Journal of Non-Newtonian Fluid Mechanics, 2018, 257, 71-82.	1.0	10
84	Questioning a fundamental assumption of rheology: Observation of noninteger power expansions. Journal of Rheology, 2020, 64, 625-635.	1.3	10
85	Self-adaptive hydrogels to mineralization. Soft Matter, 2017, 13, 5469-5480.	1.2	9
86	The weakly nonlinear response and nonaffine interpretation of the Johnsonâ€"Segalman/Gordonâ€"Schowalter model. Journal of Rheology, 2020, 64, 1409-1424.	1.3	9
87	Predictions for the northern coast of the shear rheology map: XXLAOS. Journal of Fluid Mechanics, 2016, 798, 1-4.	1.4	8
88	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
89	Mapping linear viscoelasticity for design and tactile intuition. Applied Rheology, 2019, 29, 141-161.	3.5	8
90	Impacts of yield-stress fluid drops on permeable mesh substrates. Journal of Non-Newtonian Fluid Mechanics, 2016, 238, 107-114.	1.0	7

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91	Uncertainty propagation in simulation predictions of generalized Newtonian fluid flows. Journal of Non-Newtonian Fluid Mechanics, 2019, 271, 104138.	1.0	7
92	Unravelling hagfish slime. Journal of the Royal Society Interface, 2019, 16, 20180710.	1.5	7
93	Integration of colloids into a semi-flexible network of fibrin. Soft Matter, 2017, 13, 1430-1443.	1.2	6
94	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
95	Thixotropy in viscoplastic drop impact on thin films. Physical Review Fluids, 2021, 6, .	1.0	6
96	Do-it-yourself rheometry. Physics of Fluids, 2022, 34, .	1.6	6
97	A Multiobjective Adaptive Surrogate Modeling-Based Optimization (MO-ASMO) Framework Using Efficient Sampling Strategies. , 2017, , .		5
98	Passive Hydraulic Training Simulator for Upper Arm Spasticity. Journal of Mechanisms and Robotics, 2020, 12, .	1.5	5
99	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
100	Probing Shear-Banding Transitions of Entangled Liquids Using Large Amplitude Oscillatory Shearing (LAOS) Deformations. AIP Conference Proceedings, 2008, , .	0.3	4
101	Early-Stage Design of Rheologically Complex Materials via Material Function Design Targets. , 2013, , .		4
102	Intrinsic nonlinearities in the mechanics of hard sphere suspensions. Soft Matter, 2016, 12, 7655-7662.	1.2	4
103	Efficient Optimal Surface Texture Design UsingÂLinearization. , 2018, , 632-647.		4
104	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
105	QUANTITATIVE MEASURES OF YIELD-STRESS FLUID DROP IMPACTS ON COATED SURFACES. Atomization and Sprays, 2017, 27, 337-343.	0.3	3
106	Low Reynolds number friction reduction with polymers and textures. Journal of Non-Newtonian Fluid Mechanics, 2019, 273, 104167.	1.0	3
107	On Using Adaptive Surrogate Modeling in Design for Efficient Fluid Power. , 2015, , .		2
108	Shape Parameterization Comparison for Full-Film Lubrication Texture Design. , 2016, , .		2

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109	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
110	Exploiting Nonlinear Elasticity for Anomalous Magnetoresponsive Stiffening. ACS Macro Letters, 2020, 9, 1632-1637.	2.3	2
111	Design Framework and Clinical Evaluation of a Passive Hydraulic Patient Simulator for Biceps Spasticity Assessment Training. Journal of Mechanisms and Robotics, 2021, 13, .	1.5	2
112	Simultaneous Design of Non-Newtonian Lubricant and Surface Texture Using Surrogate-Based Optimization. , 2018, , .		1
113	Optomechanical microrheology of single adherent cancer cells. APL Bioengineering, 2018, 2, 016108.	3.3	1
114	Emulsions: Particle-Free Emulsions for 3D Printing Elastomers (Adv. Funct. Mater. 21/2018). Advanced Functional Materials, 2018, 28, 1870141.	7.8	1
115	3D Printing Highâ€Resolution Conductive Elastomeric Structures with a Solid Particleâ€Free Emulsion Ink. Advanced Engineering Materials, 0, , 2100902.	1.6	1
116	Revised Design of a Passive Hydraulic Training Simulator of Biceps Spasticity. , 2018, , .		1
117	An Implantable Port for Office Laparoscopy: The AbView Access Port. Journal of Medical Devices, Transactions of the ASME, 2008, 2, .	0.4	0
118	Chemical Amplification of Subthreshold Base Triggers To Drive Solâ€"Gel Transitions in Polymers. , 0, , 1503-1510.		0