Christian Wagner

List of Publications by Year
in descending order

120 papers	4,014 citations	109137 35 h-index	138251 58 g-index
125 all docs	125 docs citations	125 times ranked	3786 citing authors

#	Article	IF	Citations
1	Rheology of Human Blood Plasma: Viscoelastic Versus Newtonian Behavior. Physical Review Letters, 2013, 110, 078305.	2.9	221
2	Elasto-inertial turbulence. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 10557-10562.	3.3	174
3	Optical tweezers reveal relationship between microstructure and nanoparticle penetration of pulmonary mucus. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 18355-18360.	3.3	160
4	Nonlinear Elastic Instability in Channel Flows at Low Reynolds Numbers. Physical Review Letters, 2013, 110, 174502.	2.9	147
5	Analytic Stability Theory for Faraday Waves and the Observation of the Harmonic Surface Response. Physical Review Letters, 1997, 78, 2357-2360.	2.9	124
6	Droplet Detachment and Satellite Bead Formation in Viscoelastic Fluids. Physical Review Letters, 2005, 95, 164504.	2.9	121
7	Size-Limited Penetration of Nanoparticles into Porcine Respiratory Mucus after Aerosol Deposition. Biomacromolecules, 2016, 17, 1536-1542.	2.6	114
8	Regulation of Phosphatidylserine Exposure in Red Blood Cells. Cellular Physiology and Biochemistry, 2011, 28, 847-856.	1.1	111
9	The plasma protein fibrinogen stabilizes clusters of red blood cells in microcapillary flows. Scientific Reports, 2014, 4, 4348.	1.6	107
10	Blistering Pattern and Formation of Nanofibers in Capillary Thinning of Polymer Solutions. Physical Review Letters, 2008, 100, 164502.	2.9	105
11	The final stages of capillary break-up of polymer solutions. Physics of Fluids, 2012, 24, .	1.6	96
12	Sliding Friction on Wet and Dry Sand. Physical Review Letters, 2014, 112, 175502.	2.9	88
13	Faraday Waves on a Viscoelastic Liquid. Physical Review Letters, 1999, 83, 308-311.	2.9	83
14	How viscoelastic is human blood plasma?. Soft Matter, 2018, 14, 4238-4251.	1.2	83
15	Red cell investigations: Art and artefacts. Blood Reviews, 2013, 27, 91-101.	2.8	74
16	Aggregation of red blood cells: From rouleaux to clot formation. Comptes Rendus Physique, 2013, 14, 459-469.	0.3	69
17	Serpentine channels: micro-rheometers for fluid relaxation times. Lab on A Chip, 2014, 14, 351-358.	3.1	67
18	Stimulation of human red blood cells leads to Ca2+-mediated intercellular adhesion. Cell Calcium, 2011, 50, 54-61.	1.1	66

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19	Drop Formation in Non-Newtonian Fluids. Physical Review Letters, 2013, 110, 034501.	2.9	62
20	Classification of red blood cell shapes in flow using outlier tolerant machine learning. PLoS Computational Biology, 2018, 14, e1006278.	1.5	62
21	Quantification of Depletion-Induced Adhesion of Red Blood Cells. Physical Review Letters, 2013, 110, 018102.	2.9	61
22	Numericalâ€"experimental observation of shape bistability of red blood cells flowing in a microchannel. Soft Matter, 2018, 14, 2032-2043.	1.2	59
23	Intrinsic Route to Melt Fracture in Polymer Extrusion: A Weakly Nonlinear Subcritical Instability of Viscoelastic Poiseuille Flow. Physical Review Letters, 2003, 90, 024502.	2.9	57
24	Glutaraldehyde â€" A Subtle Tool in the Investigation of Healthy and Pathologic Red Blood Cells. Frontiers in Physiology, 2019, 10, 514.	1.3	57
25	The Molecular Structure of Human Red Blood Cell Membranes from Highly Oriented, Solid Supported Multi-Lamellar Membranes. Scientific Reports, 2017, 7, 39661.	1.6	53
26	Experimental Evidence for an Intrinsic Route to Polymer Melt Fracture Phenomena: A Nonlinear Instability of Viscoelastic Poiseuille Flow. Physical Review Letters, 2003, 90, 114502.	2.9	52
27	Is there a relation between the relaxation time measured in CaBER experiments and the first normal stress coefficient?. Journal of Non-Newtonian Fluid Mechanics, 2010, 165, 1265-1274.	1.0	50
28	Effective viscosity of non-gravitactic Chlamydomonas Reinhardtii microswimmer suspensions. Europhysics Letters, 2013, 101, 54004.	0.7	50
29	Measuring the rotational viscosity of ferrofluids without shear flow. Physical Review E, 2000, 61, R2196-R2199.	0.8	49
30	Lysophosphatidic acid induced red blood cell aggregation in vitro. Bioelectrochemistry, 2012, 87, 89-95.	2.4	47
31	Macro- and Microrheological Properties of Mucus Surrogates in Comparison to Native Intestinal and Pulmonary Mucus. Biomacromolecules, 2019, 20, 3504-3512.	2.6	45
32	Direct Measurement of Shear-Induced Cross-Correlations of Brownian Motion. Physical Review Letters, 2009, 103, 230602.	2.9	41
33	Load Response of the Flagellar Beat. Physical Review Letters, 2016, 117, 258101.	2.9	40
34	3D tomography of cells in micro-channels. Applied Physics Letters, 2017, 111, .	1.5	38
35	Measuring the transverse magnetization of rotating ferrofluids. Physical Review E, 2006, 73, 036302.	0.8	37
36	Turbulent-drag reduction of polyelectrolyte solutions: Relation with the elongational viscosity. Europhysics Letters, 2003, 64, 823-829.	0.7	36

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37	The buckling instability of aggregating red blood cells. Scientific Reports, 2017, 7, 7928.	1.6	36
38	Turbulent drag reduction by polymers. Journal of Physics Condensed Matter, 2005, 17, S1195-S1202.	0.7	35
39	Spatiotemporal characterization of interfacial Faraday waves by means of a light absorption technique. Physical Review E, 2005, 72, 036209.	0.8	35
40	Pattern formation at the bicritical point of the Faraday instability. Physical Review E, 2003, 68, 066204.	0.8	33
41	Vesicle dynamics in a confined Poiseuille flow: From steady state to chaos. Physical Review E, 2014, 90, 033011.	0.8	33
42	Flagellar number governs bacterial spreading and transport efficiency. Science Advances, 2018, 4, eaar6425.	4.7	31
43	Spontaneous Formation of Nanopatterns in Velocity-Dependent Dip-Coated Organic Films: From Dragonflies to Stripes. ACS Nano, 2014, 8, 9954-9963.	7.3	30
44	Determination of the rheological properties of Matrigel for optimum seeding conditions in microfluidic cell cultures. AIP Advances, 2018, 8, .	0.6	28
45	Antimargination of Microparticles and Platelets in the Vicinity of Branching Vessels. Biophysical Journal, 2018, 115, 411-425.	0.2	28
46	Effect of spectrin network elasticity on the shapes of erythrocyte doublets. Soft Matter, 2018, 14, 6278-6289.	1.2	26
47	Red blood cell phenotyping from 3D confocal images using artificial neural networks. PLoS Computational Biology, 2021, 17, e1008934.	1.5	26
48	Comparing the impact of an acute exercise bout on plasma amino acid composition, intraerythrocytic Ca2+ handling, and red cell function in athletes and untrained subjects. Cell Calcium, 2016, 60, 235-244.	1.1	25
49	A Model for the Transient Subdiffusive Behavior of Particles in Mucus. Biophysical Journal, 2017, 112, 172-179.	0.2	25
50	In-phase and anti-phase flagellar synchronization by waveform compliance and basal coupling. New Journal of Physics, 2017, 19, 113052.	1.2	25
51	Clusters of red blood cells in microcapillary flow: hydrodynamic versus macromolecule induced interaction. Soft Matter, 2016, 12, 8235-8245.	1.2	24
52	Crossover from a square to a hexagonal pattern in Faraday surface waves. Physical Review E, 2000, 62, R33-R36.	0.8	23
53	The Erythrocyte Sedimentation Rate and Its Relation to Cell Shape and Rigidity of Red Blood Cells from Chorea-Acanthocytosis Patients in an Off-Label Treatment with Dasatinib. Biomolecules, 2021, 11, 727.	1.8	21
54	Amplitude measurements of Faraday waves. Physical Review E, 2001, 63, 036305.	0.8	20

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55	Is there a role of <scp>C</scp>â€reactive protein in red blood cell aggregation?. International Journal of Laboratory Hematology, 2015, 37, 474-482.	0.7	20
56	The ring phenomenon of diluted blood droplets. International Journal of Legal Medicine, 2016, 130, 731-736.	1.2	20
57	Applicability of Different Hydraulic Parameters to Describe Soil Detachment in Eroding Rills. PLoS ONE, 2013, 8, e64861.	1.1	20
58	Red blood cell shape transitions and dynamics in time-dependent capillary flows. Biophysical Journal, 2022, 121, 23-36.	0.2	20
59	Assessment of the â€œcross-bridgeâ€•induced interaction of red blood cells by optical trapping combined with microfluidics. Journal of Biomedical Optics, 2017, 22, 091516.	1.4	19
60	Statistics of Colloidal Suspensions Stirred by Microswimmers. Physical Review Letters, 2019, 122, 148101.	2.9	19
61	The TRPV2 channel mediates Ca2+ influx and the Î”9-THC-dependent decrease in osmotic fragility in red blood cells. Haematologica, 2021, 106, 2246-2250.	1.7	19
62	Viscoelastic surface instabilities. Comptes Rendus Physique, 2009, 10, 712-727.	0.3	18
63	Visualization of the flow profile inside a thinning filament during capillary breakup of a polymer solution via particle image velocimetry and particle tracking velocimetry. Physics of Fluids, 2012, 24, .	1.6	18
64	Ru/Al Multilayers Integrate Maximum Energy Density and Ductility for Reactive Materials. Scientific Reports, 2016, 6, 19535.	1.6	18
65	Dextran adsorption onto red blood cells revisited: single cell quantification by laser tweezers combined with microfluidics. Biomedical Optics Express, 2018, 9, 2755.	1.5	18
66	Cross-sectional focusing of red blood cells in a constricted microfluidic channel. Soft Matter, 2020, 16, 534-543.	1.2	18
67	Acanthocyte Sedimentation Rate as a Diagnostic Biomarker for Neuroacanthocytosis Syndromes: Experimental Evidence and Physical Justification. Cells, 2021, 10, 788.	1.8	18
68	Hybrid Erythrocyte Liposomes: Functionalized Red Blood Cell Membranes for Molecule Encapsulation. Advanced Biology, 2020, 4, e1900185.	3.0	17
69	Faraday Instability in a Surface-Frozen Liquid. Physical Review Letters, 2005, 94, 184504.	2.9	16
70	Single particles accelerate final stages of capillary break-up. Europhysics Letters, 2015, 110, 64002.	0.7	16
71	On the rheology of red blood cell suspensions with different amounts of dextran: separating the effect of aggregation and increase in viscosity of the suspending phase. Rheologica Acta, 2016, 55, 477-483.	1.1	16
72	Hydrodynamic pairing of soft particles in a confined flow. Physical Review Fluids, 2017, 2, .	1.0	16

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73	Reorientation of a single red blood cell during sedimentation. Journal of Fluid Mechanics, 2016, 806, 102-128.	1.4	15
74	Assessment of Fibrinogen Macromolecules Interaction with Red Blood Cells Membrane by Means of Laser Aggregometry, Flow Cytometry, and Optical Tweezers Combined with Microfluidics. Biomolecules, 2020, 10, 1448.	1.8	15
75	Effect of Red Blood Cell Aging In Vivo on Their Aggregation Properties In Vitro: Measurements with Laser Tweezers. Applied Sciences (Switzerland), 2020, 10, 7581.	1.3	15
76	Optimizing pressure-driven pulsatile flows in microfluidic devices. Lab on A Chip, 2021, 21, 2605-2613.	3.1	14
77	Erysense, a Lab-on-a-Chip-Based Point-of-Care Device to Evaluate Red Blood Cell Flow Properties With Multiple Clinical Applications. Frontiers in Physiology, 2022, 13, 884690.	1.3	14
78	Different macro- and micro-rheological properties of native porcine respiratory and intestinal mucus. International Journal of Pharmaceutics, 2016, 510, 164-167.	2.6	13
79	A foam model highlights the differences of the macro- and microrheology of respiratory horse mucus. Journal of the Mechanical Behavior of Biomedical Materials, 2017, 71, 216-222.	1.5	13
80	Lingering Dynamics in Microvascular Blood Flow. Biophysical Journal, 2021, 120, 432-439.	0.2	12
81	Erythrocyte Sedimentation: Collapse of a High-Volume-Fraction Soft-Particle Gel. Physical Review Letters, 2022, 128, 088101.	2.9	12
82	Geometric scaling of elastic instabilities in the Taylorâ€“Couette geometry: A theoretical, experimental and numerical study. Journal of Non-Newtonian Fluid Mechanics, 2018, 259, 78-90.	1.0	11
83	Erythrocyte sedimentation: Effect of aggregation energy on gel structure during collapse. Physical Review E, 2022, 105, 024610.	0.8	11
84	Spatio-temporal Fourier analysis of Faraday surface wave patterns on a two-liquid interface. Europhysics Letters, 2004, 65, 857-863.	0.7	10
85	Dissipation in quasistatically sheared wet and dry sand under confinement. Physical Review E, 2012, 86, 020103.	0.8	10
86	Measuring the anomalous dispersion branch of surface waves on ferrofluids. Europhysics Letters, 2007, 78, 44003.	0.7	9
87	The Evolution of Erythrocytes Becoming Red in Respect to Fluorescence. Frontiers in Physiology, 2019, 10, 753.	1.3	8
88	Delay of disorder by diluted polymers. Europhysics Letters, 2006, 75, 441-447.	0.7	7
89	Impact height and wall distance in bloodstain pattern analysisâ€"what patterns of round bloodstains can tell us. International Journal of Legal Medicine, 2015, 129, 133-140.	1.2	7
90	Imaging Erythrocyte Sedimentation in Whole Blood. Frontiers in Physiology, 2021, 12, 729191.	1.3	7

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91	Molecular configurations in the droplet detachment process of a complex liquid. Physical Review E, 2007, 75, 051805.	0.8	6
92	Vortical flow structures induced by red blood cells in capillaries. Microcirculation, 2021, 28, e12693.	1.0	6
93	Continuous Percoll Gradient Centrifugation of Erythrocytesâ€"Explanation of Cellular Bands and Compromised Age Separation. Cells, 2022, 11, 1296.	1.8	6
94	Stick-slip instability for viscous fingering in a gel. Europhysics Letters, 2002, 58, 524-529.	0.7	5
95	Vesicle dynamics in confined steady and harmonically modulated Poiseuille flows. Physical Review E, 2018, 98, .	0.8	5
96	Bouncing of polymeric droplets on liquid interfaces. Physical Review E, 2012, 86, 066314.	0.8	4
97	Living fluids. Comptes Rendus Physique, 2013, 14, 447-450.	0.3	4
98	Swimming of bacterium Bacillus subtilis with multiple bundles of flagella. Soft Matter, 2019, 15, 10029-10034.	1.2	4
99	Transient receptor potential channel vanilloid type 2 in red cells of cannabis consumer. American Journal of Hematology, 2022, 97, .	2.0	4
100	Faraday Waves under Time-Reversed Excitation. Physical Review Letters, 2013, 110, 094503.	2.9	3
101	Deconvolution of time series in the laboratory. American Journal of Physics, 2016, 84, 752-763.	0.3	3
102	A deep learning-based concept for high throughput image flow cytometry. Applied Physics Letters, 2021, 118, 123701.	1.5	3
103	In Vitro Erythropoiesis at Different pO2 Induces Adaptations That Are Independent of Prior Systemic Exposure to Hypoxia. Cells, 2022, 11, 1082.	1.8	3
104	Phase relaxation of Faraday surface waves. Physical Review E, 2002, 65, 066304.	0.8	2
105	Dynamics of polymers in elongational flow studied by the neutron spin-echo technique. Physica B: Condensed Matter, 2010, 405, 3690-3693.	1.3	2
106	Wide band Fresnel super-resolution applied to capillary breakup of viscoelastic fluids. Experiments in Fluids, 2013, 54, 1.	1.1	2
107	In Vitro Red Blood Cell Segregation in Sickle Cell Anemia. Frontiers in Physics, 2021, 9, .	1.0	2
108	Comment on â€œSuperlattice, Rhombus, Square, and Hexagonal Standing Waves in Magnetically Driven Ferrofluid Surfaceâ€• Physical Review Letters, 2001, 87, .	2.9	1

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109	Polymer solutions in co-rotating Taylorâ€"Couette flow without vorticity. Physica A: Statistical Mechanics and Its Applications, 2012, 391, 464-473.	1.2	1
110	Optical tweezers for measuring the interaction of the two single red blood cells in flow condition. , 2017, , .		1
111	Rare Anemias: Are Their Names Just Smoke and Mirrors?. Frontiers in Physiology, 2021, 12, 690604.	1.3	1
112	Microrheology and Rheological Phenomena in Microfluidics 2006 Workshop of the German Rheological Society (DRG). Applied Rheology, 2007, 17, 42-43.	3.5	0
113	Rheologentagung 2009 Berlin. Applied Rheology, 2009, 19, 179-179.	3.5	0
114	Calcium Signalling in Red Blood Cells. Biophysical Journal, 2011, 100, 518a.	0.2	0
115	Gamma globulins-induced interaction between two red blood cells: forces measurement with optical tweezers. , 2017, , .		0
116	Joint Symposium Rheology â€" 360Â° of the Belgian Group of Rheology, German Rheological Society, and ProcessNet-Subject Division Rheology. Applied Rheology, 2018, 28, 53-53.	3.5	0
117	Do fluorocarbons substantially increase transdermal oxygen delivery? A proof-of-principle study in mice. Open Research Europe, 0, 1, 39.	2.0	0
118	Joint Focus Session Rheology of the German Rheological Society (DRG) together with the German Physical Society (DPG). Applied Rheology, 2012, 22, 213-213.	3.5	0
119	PS3-2 Orientation angle of a single red blood cell during sedimentation(PS3: Poster Short) Tj ETQq1 1 0.784314 rgBT /Overlock 10 Tf Emerging Science and Technology in Biomechanics, 2015, 2015.8, 263.	0.0	0
120	A precise nanoparticle quantification approach using microfluidics and single-particle tracking. Journal of Drug Delivery Science and Technology, 2022, 75, 103579.	1.4	0