Gaetano D'Avino

List of Publications by Year
in descending order

76	2,296	218381	223531
papers	citations	26 h-index	46 g-index

77	77	77	1320
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Single line particle focusing induced by viscoelasticity of the suspending liquid: theory, experiments and simulations to design a micropipe flow-focuser. Lab on A Chip, 2012, 12, 1638.	3.1	182
2	Particle Migration due to Viscoelasticity of the Suspending Liquid and Its Relevance in Microfluidic Devices. Annual Review of Fluid Mechanics, 2017, 49, 341-360.	10.8	181
3	Particle dynamics in viscoelastic liquids. Journal of Non-Newtonian Fluid Mechanics, 2015, 215, 80-104.	1.0	153
4	Particle alignment in a viscoelastic liquid flowing in a square-shaped microchannel. Lab on A Chip, 2013, 13, 4263.	3.1	98
5	Viscoelasticity-induced migration of a rigid sphere in confined shear flow. Journal of Non-Newtonian Fluid Mechanics, 2010, 165, 466-474.	1.0	96
6	Particle motion in square channel flow of a viscoelastic liquid: Migration vs. secondary flows. Journal of Non-Newtonian Fluid Mechanics, 2013, 195, 1-8.	1.0	96
7	Viscoelastic flow-focusing in microchannels: scaling properties of the particle radial distributions. Lab on A Chip, 2013, 13, 2802.	3.1	88
8	Rotation of a sphere in a viscoelastic liquid subjected to shear flow. Part I: Simulation results. Journal of Rheology, 2008, 52, 1331-1346.	1.3	77
9	Rheometry-on-a-chip: measuring the relaxation time of a viscoelastic liquid through particle migration in microchannel flows. Lab on A Chip, 2015, 15, 783-792.	3.1	64
10	Effect of viscoelasticity on the rotation of a sphere in shear flow. Journal of Non-Newtonian Fluid Mechanics, 2011, 166, 363-372.	1.0	57
11	Effect of fluid rheology on particle migration in a square-shaped microchannel. Microfluidics and Nanofluidics, 2015, 19, 95-104.	1.0	57
12	Magnetophoresis â€˜meetsâ€™ viscoelasticity: deterministic separation of magnetic particles in a modular microfluidic device. Lab on A Chip, 2015, 15, 1912-1922.	3.1	56
13	Simulations of viscoelasticity-induced focusing of particles in pressure-driven micro-slit flow. Journal of Non-Newtonian Fluid Mechanics, 2011, 166, 1396-1405.	1.0	54
14	Numerical simulations of particle migration in a viscoelastic fluid subjected to shear flow. Computers and Fluids, 2010, 39, 709-721.	1.3	51
15	Rotation of a sphere in a viscoelastic liquid subjected to shear flow. Part II. Experimental results. Journal of Rheology, 2009, 53, 459-480.	1.3	50
16	â€œFrom the Edge to the Centerâ€• Viscoelastic Migration of Particles and Cells in a Strongly Shear-Thinning Liquid Flowing in a Microchannel. Analytical Chemistry, 2017, 89, 13146-13159.	3.2	50
17	Rheology of a dilute suspension of rigid spheres in a second order fluid. Journal of Non-Newtonian Fluid Mechanics, 2007, 147, 1-10.	1.0	41
18	Decoupled second-order transient schemes for the flow of viscoelastic fluids without a viscous solvent contribution. Journal of Non-Newtonian Fluid Mechanics, 2010, 165, 1602-1612.	1.0	41

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19	Fluid Viscoelasticity Drives Self-Assembly of Particle Trains in a Straight Microfluidic Channel. Physical Review Applied, 2018, 10, .	1.5	38
20	Hydrodynamics and Brownian motions of a spheroid near a rigid wall. Journal of Chemical Physics, 2015, 142, 194901.	1.2	36
21	Numerical simulations of particle migration in a viscoelastic fluid subjected to Poiseuille flow. Computers and Fluids, 2011, 42, 82-91.	1.3	31
22	CFD-DEM simulations of particulate fouling in microchannels. Chemical Engineering Journal, 2019, 358, 91-100.	6.6	31
23	Numerical simulation of planar elongational flow of concentrated rigid particle suspensions in a viscoelastic fluid. Journal of Non-Newtonian Fluid Mechanics, 2008, 150, 65-79.	1.0	29
24	Migration of a sphere in a viscoelastic fluid under planar shear flow: Experiments and numerical predictions. Soft Matter, 2011, 7, 1100-1106.	1.2	29
25	Effects of confinement on the motion of a single sphere in a sheared viscoelastic liquid. Journal of Non-Newtonian Fluid Mechanics, 2009, 157, 101-107.	1.0	28
26	Validated modeling of bubble growth, impingement and retraction to predict cell-opening in thermoplastic foaming. Chemical Engineering Journal, 2016, 287, 492-502.	6.6	28
27	Numerical simulations on the dynamics of a spheroid in a viscoelastic liquid in a wide-slit microchannel. Journal of Non-Newtonian Fluid Mechanics, 2019, 263, 33-41.	1.0	27
28	Dynamics of pairs and triplets of particles in a viscoelastic fluid flowing in a cylindrical channel. Computers and Fluids, 2013, 86, 45-55.	1.3	26
29	Numerical simulations of the competition between the effects of inertia and viscoelasticity on particle migration in Poiseuille flow. Computers and Fluids, 2015, 107, 214-223.	1.3	26
30	Analysis of dynamic mechanical response in torsion. Journal of Rheology, 2016, 60, 275-287.	1.3	25
31	Migration of a sphere suspended in viscoelastic liquids in Couette flow: experiments and simulations. Rheologica Acta, 2012, 51, 215-234.	1.1	24
32	Non-Newtonian deterministic lateral displacement separator: theory and simulations. Rheologica Acta, 2013, 52, 221-236.	1.1	24
33	Migration and chaining of noncolloidal spheres suspended in a sheared viscoelastic medium. Experiments and numerical simulations. Journal of Non-Newtonian Fluid Mechanics, 2014, 203, 1-8.	1.0	24
34	Elasticity in Bubble Rupture. Langmuir, 2018, 34, 5646-5654.	1.6	24
35	Microfluidic formation of crystal-like structures. Lab on A Chip, 2021, 21, 2069-2094.	3.1	24
36	Dynamics of a microorganism in a sheared viscoelastic liquid. Soft Matter, 2017, 13, 196-211.	1.2	22

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37	A numerical method for simulating concentrated rigid particle suspensions in an elongational flow using a fixed grid. Journal of Computational Physics, 2007, 226, 688-711.	1.9	20
38	Numerical simulations on the dynamics of trains of particles in a viscoelastic fluid flowing in a microchannel. Meccanica, 2020, 55, 317-330.	1.2	19
39	Discrete Element Method Analysis of the Spreading Mechanism and Its Influence on Powder Bed Characteristics in Additive Manufacturing. Micromachines, 2021, 12, 392.	1.4	18
40	Numerical investigation of hard-gel microparticle suspension dynamics in microfluidic channels: Aggregation/fragmentation phenomena, and incipient clogging. Chemical Engineering Journal, 2016, 303, 202-216.	6.6	15
41	Stress Tensor of a Dilute Suspension of Spheres in a Viscoelastic Liquid. Physical Review Letters, 2005, 95, 246001.	2.9	14
42	The rising motion of spheres in structured fluids with yield stress. Physics of Fluids, 2017, 29, .	1.6	14
43	Numerical simulations on the dynamics of a particle pair in a viscoelastic fluid in a microchannel: effect of rheology, particle shape, and confinement. Microfluidics and Nanofluidics, 2019, 23, 1.	1.0	14
44	Numerical simulations of the dynamics of a slippery particle in Newtonian and viscoelastic fluids subjected to shear and Poiseuille flows. Journal of Non-Newtonian Fluid Mechanics, 2016, 228, 46-54.	1.0	13
45	Numerical simulation of clogging in a microchannel with planar contraction. Physics of Fluids, 2021, 33, .	1.6	13
46	Rheology of a dilute viscoelastic suspension of spheroids in unconfined shear flow. Rheologica Acta, 2015, 54, 915-928.	1.1	11
47	Numerical simulations of a stick-slip spherical particle in Poiseuille flow. Physics of Fluids, 2019, 31, 083603.	1.6	11
48	Viscoelastic Particle Train Formation in Microfluidic Flows Using a Xanthan Gum Aqueous Solution. Analytical Chemistry, 2021, 93, 5503-5512.	3.2	11
49	Confinement effect on the viscoelastic particle ordering in microfluidic flows: Numerical simulations and experiments. Physics of Fluids, 2022, 34, .	1.6	11
50	A critical appraisal of the <mml:math altimg="si36.gif" display="inline" overflow="scroll" xmlns:xocs="http://www.elsevier.com/xml/xocs/dtd" xmlns:xs="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns="http://www.elsevier.com/xml/ja/dtd" xmlns:ja="http://www.elsevier.com/xml/ja/dtd" xmlns:mml="http://www.w3.org/1998/Math/MathML" xmlns:tb="http://www.elsevier.com/xml/common/table/dtd" xmlns:sb="http://www.elsevier.com/xml/common/struct-bib/dtd" xmlns:ce="http://www. Chemical Engi	1.9	10
51	Decoupled transient schemes for viscoelastic fluid flow with inertia. Computers and Fluids, 2012, 66, 183-193.	1.3	10
52	Modeling and simulation of viscoelastic film retraction. Journal of Non-Newtonian Fluid Mechanics, 2017, 249, 26-35.	1.0	10
53	Nanoparticles Synthesis in Wet-Operating Stirred Media: Investigation on the Grinding Efficiency. Materials, 2020, 13, 4281.	1.3	10
54	Hindered Brownian diffusion in a square-shaped geometry. Journal of Colloid and Interface Science, 2015, 447, 25-32.	5.0	9

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55	Numerical simulations of cell sorting through inertial microfluidics. Physics of Fluids, 2022, 34, .	1.6	9
56	Separation of particles in non-Newtonian fluids flowing in T-shaped microchannels. Advanced Modeling and Simulation in Engineering Sciences, 2015, 2, .	0.7	7
57	A comparison between a collocation and weak implementation of the rigidâ€body motion constraint on a particle surface. International Journal for Numerical Methods in Fluids, 2010, 64, 1014-1040.	0.9	6
58	Computational simulations of 3D large-scale time-dependent viscoelastic flows in high performance computing environment. Journal of Non-Newtonian Fluid Mechanics, 2011, 166, 1382-1395.	1.0	6
59	The effect of wall slip on the dynamics of a spherical particle in Newtonian and viscoelastic fluids subjected to shear and Poiseuille flows. Journal of Non-Newtonian Fluid Mechanics, 2016, 236, 123-131.	1.0	6
60	Numerical simulations of the separation of elastic particles in a T-shaped bifurcation. Journal of Non-Newtonian Fluid Mechanics, 2016, 233, 75-84.	1.0	6
61	Sedimentation of Fractal Aggregates in Shear-Thinning Fluids. Applied Sciences (Switzerland), 2020, 10, 3267.	1.3	6
62	Axisymmetric bare freestanding films of highly viscous liquids: Preparation and real-time investigation of capillary leveling. Journal of Colloid and Interface Science, 2021, 596, 493-499.	5.0	6
63	Numerical simulations of linear viscoelasticity of monodisperse emulsions of Newtonian drops in a Newtonian fluid from dilute to concentrated regime. Rheologica Acta, 2014, 53, 401-416.	1.1	4
64	Rheology of a Dilute Suspension of Aggregates in Shear-Thinning Fluids. Micromachines, 2020, 11, 443.	1.4	4
65	Rheology of a Dilute Suspension of Spheres in a Viscoelastic Fluid Under Large Amplitude Oscillations. Journal of Computational and Theoretical Nanoscience, 2010, 7, 780-786.	0.4	2
66	Bubble impingement in the presence of a solid particle: A computational study. Computers and Fluids, 2018, 170, 349-356.	1.3	2
67	An Experimental and Numerical Investigation on Bubble Growth in Polymeric Foams. Entropy, 2022, 24, 183.	1.1	2
68	Effect of wall slip on the viscoelastic particle ordering in a microfluidic channel. Electrophoresis, 2022, 43, 2206-2216.	1.3	2
69	Numerical Simulations of Viscoelastic Suspension Fluid Dynamics. , 2015, , 235-280.		1
70	Numerical simulations of dispersive mixing of viscoelastic suspensions in a four-roll mill. Rheologica Acta, 2017, 56, 695-706.	1.1	1
71	Determination of the optimal periodic waveform for a continuous fermentation process. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2010, 43, 305-310.	0.4	0
72	Discussion on: â€œHigher-Order Corrections to the Pi Criterion Using Center Manifold Theoryâ€• European Journal of Control, 2012, 18, 20-21.	1.6	0

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73	Particle manipulation through polymer solutions in microfluidic processes. AIP Conference Proceedings, 2015, , .	0.3	0
74	Numerical simulations of viscoelastic particle migration in a microchannel with triangular crossâ€section. Electrophoresis, 2021, 42, 2293-2302.	1.3	0
75	Powder Bed Spreading in Additive Manufacturing: Numerical Simulations and Experimental Study. , 2021, , .		0
76	Rheo-Engineered Microfluidics @ UNINA. , 2022, 3, 100024.		0