Charles N Baroud

List of Publications by Year
in descending order

71 papers	4,523 citations	136950 32 h-index	102487 66 g-index
81 all docs	81 docs citations	81 times ranked	4959 citing authors

#	Article	IF	Citations
1	Dynamics of microfluidic droplets. Lab on A Chip, 2010, 10, 2032.	6.0	828
2	Capillary Origami: Spontaneous Wrapping of a Droplet with an Elastic Sheet. Physical Review Letters, 2007, 98, 156103.	7.8	388
3	An optical toolbox for total control of droplet microfluidics. Lab on A Chip, 2007, 7, 1029.	6.0	263
4	Droplet microfluidics driven by gradients of confinement. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 853-858.	7.1	220
5	Thermocapillary valve for droplet production and sorting. Physical Review E, 2007, 75, 046302.	2.1	196
6	Rails and anchors: guiding and trapping droplet microreactors in two dimensions. Lab on A Chip, 2011, 11, 813-821.	6.0	190
7	Microchannel deformations due to solvent-induced PDMS swelling. Lab on A Chip, 2010, 10, 2972.	6.0	134
8	Multiscale cytometry and regulation of 3D cell cultures on a chip. Nature Communications, 2017, 8, 469.	12.8	132
9	Anomalous Self-Similarity in a Turbulent Rapidly Rotating Fluid. Physical Review Letters, 2002, 88, 114501.	7.8	99
10	Combining rails and anchors with laser forcing for selective manipulation within 2D droplet arrays. Lab on A Chip, 2011, 11, 4228.	6.0	92
11	Transitions between three swimming gaits in Paramecium escape. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 7290-7295.	7.1	89
12	Scaling in three-dimensional and quasi-two-dimensional rotating turbulent flows. Physics of Fluids, 2003, 15, 2091-2104.	4.0	86
13	Trapping Microfluidic Drops in Wells of Surface Energy. Physical Review Letters, 2011, 107, 124501.	7.8	85
14	The physical mechanisms of step emulsification. Journal Physics D: Applied Physics, 2013, 46, 114003.	2.8	85
15	Laser-Induced Force on a Microfluidic Drop: Origin and Magnitude. Langmuir, 2009, 25, 5127-5134.	3.5	81
16	Multiphase flows in microfluidics. Comptes Rendus Physique, 2004, 5, 547-555.	0.9	78
17	Reaction-diffusion dynamics: Confrontation between theory and experiment in a microfluidic reactor. Physical Review E, 2003, 67, 060104.	2.1	77
18	Arresting dissolution by interfacial rheology design. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 10373-10378.	7.1	76

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19	Thermocapillary manipulation of droplets using holographic beam shaping: Microfluidic pin ball. Applied Physics Letters, 2008, 93, .	3.3	75
20	Individual Control and Quantification of 3D Spheroids in a High-Density Microfluidic Droplet Array. Cell Reports, 2020, 31, 107670.	6.4	70
21	Monitoring the orientation of rare-earth-doped nanorods for flow shear tomography. Nature Nanotechnology, 2017, 12, 914-919.	31.5	65
22	Quantitative analysis of the dripping and jetting regimes in co-flowing capillary jets. Physics of Fluids, 2011, 23, .	4.0	58
23	Cell Culture in Microfluidic Droplets. Chemical Reviews, 2022, 122, 7061-7096.	47.7	56
24	Monitoring a Reaction at Submillisecond Resolution in Picoliter Volumes. Analytical Chemistry, 2011, 83, 1462-1468.	6.5	53
25	Electrically initiated upstream coalescence cascade of droplets in a microfluidic flow. Physical Review E, 2009, 80, 046303.	2.1	51
26	Time-resolved temperature rise in a thin liquid film due to laser absorption. Physical Review E, 2009, 79, 011201.	2.1	51
27	Universal microfluidic platform for bioassays in anchored droplets. Lab on A Chip, 2016, 16, 4200-4211.	6.0	49
28	Sickling of red blood cells through rapid oxygen exchange in microfluidic drops. Lab on A Chip, 2010, 10, 2505.	6.0	48
29	TetrahymenaRIB72A and RIB72B are microtubule inner proteins in the ciliary doublet microtubules. Molecular Biology of the Cell, 2018, 29, 2566-2577.	2.1	47
30	Proteins that control the geometry of microtubules at the ends of cilia. Journal of Cell Biology, 2018, 217, 4298-4313.	5.2	46
31	Transport of wetting liquid plugs in bifurcating microfluidic channels. Journal of Colloid and Interface Science, 2007, 308, 231-238.	9.4	40
32	The propagation of low-viscosity fingers into fluid-filled branching networks. Journal of Fluid Mechanics, 2006, 546, 285.	3.4	38
33	Mixing via thermocapillary generation of flow patterns inside a microfluidic drop. New Journal of Physics, 2009, 11, 075033.	2.9	37
34	Mapping the structure and biological functions within mesenchymal bodies using microfluidics. Science Advances, 2020, 6, eaaw7853.	10.3	35
35	Parameciumswimming and ciliary beating patterns: a study on four RNA interference mutations. Integrative Biology (United Kingdom), 2015, 7, 90-100.	1.3	33
36	Experimental and numerical studies of an eastward jet over topography. Journal of Fluid Mechanics, 2001, 438, 129-157.	3.4	32

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37	The airâ€“liquid flow in a microfluidic airway tree. Medical Engineering and Physics, 2011, 33, 849-856.	1.7	32
38	Trapping and release of giant unilamellar vesicles in microfluidic wells. Soft Matter, 2014, 10, 5878.	2.7	31
39	Airway reopening through catastrophic events in a hierarchical network. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 859-864.	7.1	28
40	Marangoni induced force on a drop in a Hele Shaw cell. Physics of Fluids, 2014, 26, .	4.0	28
41	Energy criteria for elasto-capillary wrapping. Journal of Fluids and Structures, 2010, 26, 205-217.	3.4	25
42	Probing the Mechanical Strength of an Armored Bubble and Its Implication to Particle-Stabilized Foams. Physical Review X, 2016, 6, .	8.9	24
43	High resolution microfluidic assay and probabilistic modeling reveal cooperation between T cells in tumor killing. Nature Communications, 2022, 13, .	12.8	22
44	Breaking Anchored Droplets in a Microfluidic Hele-Shaw Cell. Physical Review Applied, 2015, 3, .	3.8	19
45	Highâ€Throughput Measurements of Intraâ€Cellular and Secreted Cytokine from Single Spheroids Using Anchored Microfluidic Droplets. Small, 2020, 16, e2002303.	10.0	18
46	Tracking the Evolution of Transiently Transfected Individual Cells in a Microfluidic Platform. Scientific Reports, 2018, 8, 1225.	3.3	16
47	Interface-induced recirculation within a stationary microfluidic drop. Soft Matter, 2012, 8, 10750.	2.7	15
48	Flow distribution in parallel microfluidic networks and its effect on concentration gradient. Biomicrofluidics, 2015, 9, 054119.	2.4	15
49	Parallel measurements of reaction kinetics using ultralow-volumes. Lab on A Chip, 2013, 13, 4326.	6.0	14
50	Growing from a few cells: combined effects of initial stochasticity and cell-to-cell variability. Journal of the Royal Society Interface, 2019, 16, 20180935.	3.4	13
51	Local Interactions and the Global Organization of a Two-Phase Flow in a Branching Tree. Physical Review Letters, 2010, 105, 134501.	7.8	12
52	Behavior of liquid plugs at bifurcations in a microfluidic tree network. Biomicrofluidics, 2012, 6, 034105.	2.4	11
53	Measuring Fast and Slow Enzyme Kinetics in Stationary Droplets. Analytical Chemistry, 2015, 87, 11915-11922.	6.5	11
54	Nonextensivity in turbulence in rotating two-dimensional and three-dimensional flows. Physica D: Nonlinear Phenomena, 2003, 184, 21-28.	2.8	10

#	Article	IF	Citations
55	Capture of colloidal particles by a moving microfluidic bubble. Soft Matter, 2018, 14, 992-1000.	2.7	10
56	Frugal Droplet Microfluidics Using Consumer Opto-Electronics. PLoS ONE, 2016, 11, e0161490.	2.5	9
57	Highly sensitive pH measurements using a transistor composed of a large array of parallel silicon nanowires. Sensors and Actuators B: Chemical, 2012, 171-172, 127-134.	7.8	8
58	Universal anchored-droplet device for cellular bioassays. Methods in Cell Biology, 2018, 148, 177-199.	1.1	6
59	Order to Disorder Transition in a Coarsening Two-Dimensional Foam. Physical Review Letters, 2019, 123, 238006.	7.8	6
60	Quantifying the solâ€“gel process and detecting toxic gas in an array of anchored microfluidic droplets. Lab on A Chip, 2020, 20, 236-243.	6.0	6
61	Induced Micro-Variations in Hydrodynamic Bearings. Journal of Tribology, 2000, 122, 585-589.	1.9	4
62	Collective behavior during the exit of a wetting liquid through a network of channels. Journal of Colloid and Interface Science, 2008, 326, 445-450.	9.4	4
63	Nonlinear determinism in time series measurements of two-dimensional turbulence. Physica D: Nonlinear Phenomena, 2002, 162, 244-255.	2.8	2
64	Droplet Microfluidics in Two-Dimensional Channels. Biological and Medical Physics Series, 2014, , 7-29.	0.4	2
65	Tip Streaming of a Lipid-Stabilized Double Emulsion Generated in a Microfluidic Channel. Langmuir, 2021, 37, 7442-7448.	3.5	2
66	Intermittent dynamics of bubble dissolution due to interfacial growth of fat crystals. Soft Matter, 2021, 17, 10042-10052.	2.7	2
67	Laser-actuated microfluidic building blocks. , 2005, , .		1
68	Holographic control of droplet microfluidics. , 2008, , .		1
69	Optical blocking of microfluidic droplets through laser-induced thermocapillarity. , 2009, , .		0
70	Structural and Functional Mapping of Mesenchymal Bodies. Bio-protocol, 2021, 11, e4177.	0.4	0
71	Marangoni Convection. , 2015, , 1705-1711.		0