

Albert Libchaber

List of Publications by Year in descending order

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88
papers

13,428
citations

46918

47
h-index

53109

85
g-index

88
all docs

88
docs citations

88
times ranked

11766
citing authors

#	ARTICLE	IF	CITATIONS
1	In Vivo Imaging of Quantum Dots Encapsulated in Phospholipid Micelles. <i>Science</i> , 2002, 298, 1759-1762.	6.0	2,961
2	A vesicle bioreactor as a step toward an artificial cell assembly. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2004, 101, 17669-17674.	3.3	1,045
3	Scaling of hard thermal turbulence in Rayleigh-Bénard convection. <i>Journal of Fluid Mechanics</i> , 1989, 204, 1.	1.4	929
4	Particle Diffusion in a Quasi-Two-Dimensional Bacterial Bath. <i>Physical Review Letters</i> , 2000, 84, 3017-3020.	2.9	723
5	Flexible filaments in a flowing soap film as a model for one-dimensional flags in a two-dimensional wind. <i>Nature</i> , 2000, 408, 835-839.	13.7	604
6	DNA Solution of the Maximal Clique Problem. <i>Science</i> , 1997, 278, 446-449.	6.0	540
7	Trapping of DNA by Thermophoretic Depletion and Convection. <i>Physical Review Letters</i> , 2002, 89, 188103.	2.9	342
8	Sequence Dependent Rigidity of Single Stranded DNA. <i>Physical Review Letters</i> , 2000, 85, 2400-2403.	2.9	275
9	Global Universality at the Onset of Chaos: Results of a Forced Rayleigh-Bénard Experiment. <i>Physical Review Letters</i> , 1985, 55, 2798-2801.	2.9	272
10	Development of an artificial cell, from self-organization to computation and self-reproduction. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2011, 108, 3473-3480.	3.3	270
11	Multiplexed DNA Quantification by Spectroscopic Shift of Two Microsphere Cavities. <i>Biophysical Journal</i> , 2003, 85, 1974-1979.	0.2	264
12	Turbulence in helium-gas free convection. <i>Physical Review A</i> , 1989, 40, 6421-6430.	1.0	256
13	Principles of cell-free genetic circuit assembly. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2003, 100, 12672-12677.	3.3	248
14	Single-Molecule Measurements of Gold-Quenched Quantum Dots. <i>Physical Review Letters</i> , 2004, 93, 166108.	2.9	244
15	Mechanics of Microtubule-Based Membrane Extension. <i>Physical Review Letters</i> , 1997, 79, 4497-4500.	2.9	213
16	Escape and synchronization of a Brownian particle. <i>Physical Review Letters</i> , 1992, 68, 3375-3378.	2.9	176
17	Fast-Moving Bacteria Self-Organize into Active Two-Dimensional Crystals of Rotating Cells. <i>Physical Review Letters</i> , 2015, 114, 158102.	2.9	175
18	Frequency power spectrum of temperature fluctuations in free convection. <i>Physical Review Letters</i> , 1990, 64, 2140-2143.	2.9	170

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19	Phase diagram of microtubules. <i>Physical Review E</i> , 1994, 50, 1579-1588.	0.8	170
20	Coherent structures in turbulent convection, an experimental study. <i>Physica A: Statistical Mechanics and Its Applications</i> , 1990, 166, 387-407.	1.2	161
21	Buckling Microtubules in Vesicles. <i>Physical Review Letters</i> , 1996, 76, 4078-4081.	2.9	156
22	Elasticity and Structure of Eukaryote Chromosomes Studied by Micromanipulation and Micropipette Aspiration. <i>Journal of Cell Biology</i> , 1997, 139, 1-12.	2.3	152
23	Temperature and velocity boundary layers in turbulent convection. <i>Physical Review E</i> , 1994, 50, 269-279.	0.8	151
24	Solitary Modes and the Eckhaus Instability in Directional Solidification. <i>Physical Review Letters</i> , 1988, 61, 2574-2577.	2.9	148
25	Scaling relations in thermal turbulence: The aspect-ratio dependence. <i>Physical Review A</i> , 1992, 45, 842-845.	1.0	144
26	High-Q microsphere biosensor - analysis for adsorption of rodlike bacteria. <i>Optics Express</i> , 2007, 15, 17410.	1.7	140
27	Toward an artificial cell based on gene expression in vesicles. <i>Physical Biology</i> , 2005, 2, P1-P8.	0.8	138
28	Exponential DNA Replication by Laminar Convection. <i>Physical Review Letters</i> , 2003, 91, 158103.	2.9	122
29	Assembly of MreB Filaments on Liposome Membranes: A Synthetic Biology Approach. <i>ACS Synthetic Biology</i> , 2012, 1, 53-59.	1.9	100
30	Faceted crystal growth in two dimensions. <i>Nature</i> , 1991, 350, 322-324.	13.7	97
31	Periodic forcing of a Brownian particle. <i>Physical Review E</i> , 1995, 51, 5239-5250.	0.8	97
32	Non-Boussinesq effect: Thermal convection with broken symmetry. <i>Physics of Fluids</i> , 1997, 9, 1034-1042.	1.6	93
33	Non-Boussinesq effects in free thermal convection. <i>Physical Review A</i> , 1991, 43, 2833-2839.	1.0	85
34	Instabilities of a Moving Nematic-Isotropic Interface. <i>Physical Review Letters</i> , 1987, 58, 2318-2321.	2.9	80
35	Thermal force approach to molecular evolution. <i>Physical Biology</i> , 2004, 1, P1-P8.	0.8	80
36	Boundary layer length scales in thermal turbulence. <i>Physical Review Letters</i> , 1993, 70, 4067-4070.	2.9	75

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37	Thermal Separation: Interplay between the Soret Effect and Entropic Force Gradient. <i>Physical Review Letters</i> , 2011, 107, 038301.	2.9	74
38	A concentration-dependent switch in the bacterial response to temperature. <i>Nature Cell Biology</i> , 2007, 9, 1098-1100.	4.6	73
39	Effects of long DNA folding and small RNA stem-loop in thermophoresis. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2012, 109, 17972-17977.	3.3	71
40	Dynamics of gas bubbles in monolayers. <i>Physical Review A</i> , 1990, 41, 6893-6900.	1.0	70
41	Structure of Arnold tongues and the $f(\hat{I}\pm)$ spectrum for period doubling: Experimental results. <i>Physical Review A</i> , 1986, 34, 1621-1624.	1.0	63
42	Destabilization of a flat nematic-isotropic interface. <i>Physical Review A</i> , 1989, 40, 2042-2056.	1.0	62
43	On growth and form of <i>Bacillus subtilis</i> biofilms. <i>Interface Focus</i> , 2014, 4, 20130051.	1.5	62
44	Finger narrowing under local perturbations in the Saffman-Taylor problem. <i>Physical Review A</i> , 1987, 36, 1894-1900.	1.0	59
45	Degeneracy of the genetic code and stability of the base pair at the second position of the anticodon. <i>Rna</i> , 2008, 14, 1264-1269.	1.6	56
46	Transitions in convective turbulence: The role of thermal plumes. <i>Physical Review A</i> , 1991, 44, 8091-8102.	1.0	53
47	Selection of Brownian particles. <i>Journal of the Chemical Society, Faraday Transactions</i> , 1995, 91, 3163.	1.7	51
48	Membrane molecular crowding enhances MreB polymerization to shape synthetic cells from spheres to rods. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2020, 117, 1902-1909.	3.3	46
49	Pressure and Temperature Dependence of Growth and Morphology of <i>Escherichia coli</i> : Experiments and Stochastic Model. <i>Biophysical Journal</i> , 2013, 105, 783-793.	0.2	45
50	Periodic Boundary Motion in Thermal Turbulence. <i>Physical Review Letters</i> , 2000, 84, 4361-4364.	2.9	43
51	Testing shape selection in directional solidification. <i>Physical Review B</i> , 1987, 35, 1393-1396.	1.1	42
52	Thermal signature of plumes in turbulent convection: The skewness of the derivative. <i>Physical Review E</i> , 1996, 53, 4893-4898.	0.8	39
53	Protein-DNA computation by stochastic assembly cascade. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2002, 99, 11589-11592.	3.3	37
54	From disks to hexagons and beyond: A study in two dimensions. <i>Physical Review Letters</i> , 1991, 67, 2489-2492.	2.9	35

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55	Parallel Overlap Assembly for the Construction of Computational DNA Libraries. Journal of Theoretical Biology, 1997, 188, 333-341.	0.8	34
56	Examining how the spatial organization of chromatin signals influences metaphase spindle assembly. Nature Cell Biology, 2006, 8, 924-932.	4.6	33
57	Viscous finger narrowing at the coil-stretch transition in a dilute polymer solution. Physical Review A, 1992, 45, R2165-R2168.	1.0	32
58	Pattern formation behind a moving cholesteric-smectic-A interface. Physical Review A, 1987, 36, 5832-5838.	1.0	30
59	Green function of correlated genes in a minimal mechanical model of protein evolution. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, E4559-E4568.	3.3	30
60	$f(\hat{\mu})$ curves: Experimental results. Physical Review A, 1988, 37, 523-530.	1.0	28
61	Computer-based photon-counting lock-in for phase detection at the shot-noise limit. Optics Letters, 2002, 27, 1418.	1.7	25
62	Hydrodynamics and collective behavior of the tethered bacterium <i>Thiovulum majus</i> . Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, E537-45.	3.3	25
63	Non-Boussinesq effect: Asymmetric velocity profiles in thermal convection. Physics of Fluids, 1998, 10, 1534-1536.	1.6	24
64	Observations of cellular and dendritic growth of a smectic-smectic-A interface. Physical Review A, 1988, 37, 1691-1696.	1.0	23
65	Moving interface: The stability tongue and phenomena within. Physical Review A, 1990, 41, 7090-7093.	1.0	21
66	Effects of pressure and temperature on the binding of RecA protein to single-stranded DNA. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 19913-19918.	3.3	20
67	Turbulence and internal waves in side-heated convection. Physical Review E, 1995, 51, 5681-5687.	0.8	19
68	Efficiency of a self-aminoacylating ribozyme: Effect of the length and base-composition of its 3' extension. Rna, 2007, 13, 1191-1197.	1.6	19
69	Wu and Libchaber Reply. Physical Review Letters, 2001, 86, 557-557.	2.9	18
70	Signal and noise in bridging PCR. BMC Biotechnology, 2002, 2, 13.	1.7	18
71	High-Fidelity DNA Sensing by Protein Binding Fluctuations. Physical Review Letters, 2004, 93, 258103.	2.9	18
72	Emergence of a Code in the Polymerization of Amino Acids along RNA Templates. PLoS ONE, 2009, 4, e5773.	1.1	18

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73	Effects of population density and chemical environment on the behavior of <i>Escherichia coli</i> in shallow temperature gradients. <i>Physical Biology</i> , 2011, 8, 063001.	0.8	18
74	Dynamics of DNA-Protein Interaction Deduced from in vitro DNA Evolution. <i>Physical Review Letters</i> , 2001, 86, 6022-6025.	2.9	17
75	Lock-in by molecular multiplication. <i>Applied Physics Letters</i> , 2003, 83, 5554-5556.	1.5	17
76	From Biology to Physics and Back: The Problem of Brownian Movement. <i>Annual Review of Condensed Matter Physics</i> , 2019, 10, 275-293.	5.2	14
77	Biophysical basis for convergent evolution of two veil-forming microbes. <i>Royal Society Open Science</i> , 2015, 2, 150437.	1.1	13
78	Goddard et al. Reply. <i>Physical Review Letters</i> , 2002, 88, .	2.9	8
79	Kinetics of Bulge Bases in Small RNAs and the Effect of Pressure on It. <i>PLoS ONE</i> , 2012, 7, e42052.	1.1	7
80	Fundamental amino acid mass distributions and entropy costs in proteomes. <i>Journal of Theoretical Biology</i> , 2016, 410, 119-124.	0.8	7
81	Subsurface Microbial Ecosystems: A Photon Flux and a Metabolic Cascade. <i>Journal of Statistical Physics</i> , 2017, 167, 763-776.	0.5	5
82	Turbulent convection in helium gas. <i>Physica D: Nonlinear Phenomena</i> , 1992, 58, 414-422.	1.3	3
83	Using First Passage Statistics to Extract Environmentally Dependent Amino Acid Correlations. <i>PLoS ONE</i> , 2014, 9, e101665.	1.1	3
84	Is temperature passive or active in hard turbulence?. <i>Physica D: Nonlinear Phenomena</i> , 1996, 97, 155-157.	1.3	2
85	Oxygen dynamics in a two-dimensional microbial ecosystem. <i>Physical Review E</i> , 2018, 98, .	0.8	2
86	Escape and synchronization of a Brownian particle. <i>Journal of Statistical Physics</i> , 1993, 70, 423-423.	0.5	0
87	From Bacteria to Artificial Cells, the Problem of Self-reproduction. , 2016, , 147-157.		0
88	Helium in a Big Box. , 1991, , 375-384.		0