Albert Libchaber

List of Publications by Year
in descending order

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Version: 2024-02-01

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	Membrane molecular crowding enhances MreB polymerization to shape synthetic cells from spheres to rods. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 1902-1909.	3.3	46
2	From Biology to Physics and Back: The Problem of Brownian Movement. Annual Review of Condensed Matter Physics, 2019, 10, 275-293.	5.2	14
3	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
4	Oxygen dynamics in a two-dimensional microbial ecosystem. Physical Review E, 2018, 98, .	0.8	2
5	Subsurface Microbial Ecosystems: A Photon Flux and a Metabolic Cascade. Journal of Statistical Physics, 2017, 167, 763-776.	0.5	5
6	Fundamental amino acid mass distributions and entropy costs in proteomes. Journal of Theoretical Biology, 2016, 410, 119-124.	0.8	7
7	From Bacteria to Artificial Cells, the Problem of Self-reproduction. , 2016, , 147-157.		0
8	Biophysical basis for convergent evolution of two veil-forming microbes. Royal Society Open Science, 2015, 2, 150437.	1.1	13
9	Fast-Moving Bacteria Self-Organize into Active Two-Dimensional Crystals of Rotating Cells. Physical Review Letters, 2015, 114, 158102.	2.9	175
10	Using First Passage Statistics to Extract Environmentally Dependent Amino Acid Correlations. PLoS ONE, 2014, 9, e101665.	1.1	3
11	Hydrodynamics and collective behavior of the tethered bacterium Thiovulum majus. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, E537-45.	3.3	25
12	On growth and form of Bacillus subtilis biofilms. Interface Focus, 2014, 4, 20130051.	1.5	62
13	Pressure and Temperature Dependence of Growth and Morphology ofÂEscherichia coli: Experiments and Stochastic Model. Biophysical Journal, 2013, 105, 783-793.	0.2	45
14	Effects of long DNA folding and small RNA stemâ€“loop in thermophoresis. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 17972-17977.	3.3	71
15	Assembly of MreB Filaments on Liposome Membranes: A Synthetic Biology Approach. ACS Synthetic Biology, 2012, 1, 53-59.	1.9	100
16	Kinetics of Bulge Bases in Small RNAs and the Effect of Pressure on It. PLoS ONE, 2012, 7, e42052.	1.1	7
17	Thermal Separation: Interplay between the Soret Effect and Entropic Force Gradient. Physical Review Letters, 2011, 107, 038301.	2.9	74
18	Development of an artificial cell, from self-organization to computation and self-reproduction. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 3473-3480.	3.3	270

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19	Effects of population density and chemical environment on the behavior ofEscherichia coliin shallow temperature gradients. Physical Biology, 2011, 8, 063001.	0.8	18
20	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
21	Emergence of a Code in the Polymerization of Amino Acids along RNA Templates. PLoS ONE, 2009, 4, e5773.	1.1	18
22	Degeneracy of the genetic code and stability of the base pair at the second position of the anticodon. Rna, 2008, 14, 1264-1269.	1.6	56
23	High-Q microsphere biosensor - analysis for adsorption of rodlike bacteria. Optics Express, 2007, 15, 17410.	1.7	140
24	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
25	A concentration-dependent switch in the bacterial response to temperature. Nature Cell Biology, 2007, 9, 1098-1100.	4.6	73
26	Examining how the spatial organization of chromatin signals influences metaphase spindle assembly. Nature Cell Biology, 2006, 8, 924-932.	4.6	33
27	Toward an artificial cell based on gene expression in vesicles. Physical Biology, 2005, 2, P1-P8.	0.8	138
28	High-Fidelity DNA Sensing by Protein Binding Fluctuations. Physical Review Letters, 2004, 93, 258103.	2.9	18
29	A vesicle bioreactor as a step toward an artificial cell assembly. Proceedings of the National Academy of Sciences of the United States of America, 2004, 101, 17669-17674.	3.3	1,045
30	Thermal force approach to molecular evolution. Physical Biology, 2004, 1, P1-P8.	0.8	80
31	Single-Molecule Measurements of Gold-Quenched Quantum Dots. Physical Review Letters, 2004, 93, 166108.	2.9	244
32	Multiplexed DNA Quantification by Spectroscopic Shift of Two Microsphere Cavities. Biophysical Journal, 2003, 85, 1974-1979.	0.2	264
33	Principles of cell-free genetic circuit assembly. Proceedings of the National Academy of Sciences of the United States of America, 2003, 100, 12672-12677.	3.3	248
34	Lock-in by molecular multiplication. Applied Physics Letters, 2003, 83, 5554-5556.	1.5	17
35	Exponential DNA Replication by Laminar Convection. Physical Review Letters, 2003, 91, 158103.	2.9	122
36	Goddardet al.Reply:. Physical Review Letters, 2002, 88, .	2.9	8

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37	Protein-DNA computation by stochastic assembly cascade. Proceedings of the National Academy of Sciences of the United States of America, 2002, 99, 11589-11592.	3.3	37
38	Computer-based photon-counting lock-in for phase detection at the shot-noise limit. Optics Letters, 2002, 27, 1418.	1.7	25
39	Trapping of DNA by Thermophoretic Depletion and Convection. Physical Review Letters, 2002, 89, 188103.	2.9	342
40	In Vivo Imaging of Quantum Dots Encapsulated in Phospholipid Micelles. Science, 2002, 298, 1759-1762.	6.0	2,961
41	Signal and noise in bridging PCR. BMC Biotechnology, 2002, 2, 13.	1.7	18
42	Wu and Libchaber Reply:. Physical Review Letters, 2001, 86, 557-557.	2.9	18
43	Dynamics of DNA-Protein Interaction Deduced from in vitro DNA Evolution. Physical Review Letters, 2001, 86, 6022-6025.	2.9	17
44	Flexible filaments in a flowing soap film as a model for one-dimensional flags in a two-dimensional wind. Nature, 2000, 408, 835-839.	13.7	604
45	Particle Diffusion in a Quasi-Two-Dimensional Bacterial Bath. Physical Review Letters, 2000, 84, 3017-3020.	2.9	723
46	Periodic Boundary Motion in Thermal Turbulence. Physical Review Letters, 2000, 84, 4361-4364.	2.9	43
47	Sequence Dependent Rigidity of Single Stranded DNA. Physical Review Letters, 2000, 85, 2400-2403.	2.9	275
48	Non-Boussinesq effect: Asymmetric velocity profiles in thermal convection. Physics of Fluids, 1998, 10, 1534-1536.	1.6	24
49	Non-Boussinesq effect: Thermal convection with broken symmetry. Physics of Fluids, 1997, 9, 1034-1042.	1.6	93
50	Mechanics of Microtubule-Based Membrane Extension. Physical Review Letters, 1997, 79, 4497-4500.	2.9	213
51	Elasticity and Structure of Eukaryote Chromosomes Studied by Micromanipulation and Micropipette Aspiration. Journal of Cell Biology, 1997, 139, 1-12.	2.3	152
52	DNA Solution of the Maximal Clique Problem. Science, 1997, 278, 446-449.	6.0	540
53	Parallel Overlap Assembly for the Construction of Computational DNA Libraries. Journal of Theoretical Biology, 1997, 188, 333-341.	0.8	34
54	Is temperature passive or active in hard turbulence?. Physica D: Nonlinear Phenomena, 1996, 97, 155-157.	1.3	2

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55	Thermal signature of plumes in turbulent convection: The skewness of the derivative. Physical Review E, 1996, 53, 4893-4898.	0.8	39
56	Buckling Microtubules in Vesicles. Physical Review Letters, 1996, 76, 4078-4081.	2.9	156
57	Turbulence and internal waves in side-heated convection. Physical Review E, 1995, 51, 5681-5687.	0.8	19
58	Periodic forcing of a Brownian particle. Physical Review E, 1995, 51, 5239-5250.	0.8	97
59	Selection of Brownian particles. Journal of the Chemical Society, Faraday Transactions, 1995, 91, 3163.	1.7	51
60	Phase diagram of microtubules. Physical Review E, 1994, 50, 1579-1588.	0.8	170
61	Temperature and velocity boundary layers in turbulent convection. Physical Review E, 1994, 50, 269-279.	0.8	151
62	Escape and synchronization of a Brownian particle. Journal of Statistical Physics, 1993, 70, 423-423.	0.5	0
63	Boundary layer length scales in thermal turbulence. Physical Review Letters, 1993, 70, 4067-4070.	2.9	75
64	Viscous finger narrowing at the coil-stretch transition in a dilute polymer solution. Physical Review A, 1992, 45, R2165-R2168.	1.0	32
65	Escape and synchronization of a Brownian particle. Physical Review Letters, 1992, 68, 3375-3378.	2.9	176
66	Scaling relations in thermal turbulence: The aspect-ratio dependence. Physical Review A, 1992, 45, 842-845.	1.0	144
67	Turbulent convection in helium gas. Physica D: Nonlinear Phenomena, 1992, 58, 414-422.	1.3	3
68	Transitions in convective turbulence: The role of thermal plumes. Physical Review A, 1991, 44, 8091-8102.	1.0	53
69	Faceted crystal growth in two dimensions. Nature, 1991, 350, 322-324.	13.7	97
70	Non-Boussinesq effects in free thermal convection. Physical Review A, 1991, 43, 2833-2839.	1.0	85
71	From disks to hexagons and beyond: A study in two dimensions. Physical Review Letters, 1991, 67, 2489-2492.	2.9	35
72	Helium in a Big Box. , 1991, , 375-384.		0

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73	Coherent structures in turbulent convection, an experimental study. Physica A: Statistical Mechanics and Its Applications, 1990, 166, 387-407.	1.2	161
74	Dynamics of gas bubbles in monolayers. Physical Review A, 1990, 41, 6893-6900.	1.0	70
75	Moving interface: The stability tongue and phenomena within. Physical Review A, 1990, 41, 7090-7093.	1.0	21
76	Frequency power spectrum of temperature fluctuations in free convection. Physical Review Letters, 1990, 64, 2140-2143.	2.9	170
77	Destabilization of a flat nematic-isotropic interface. Physical Review A, 1989, 40, 2042-2056.	1.0	62
78	Scaling of hard thermal turbulence in Rayleigh-BÃ©nard convection. Journal of Fluid Mechanics, 1989, 204, 1.	1.4	929
79	Turbulence in helium-gas free convection. Physical Review A, 1989, 40, 6421-6430.	1.0	256
80	Observations of cellular and dendritic growth of a smectic-Bâ€“smectic-Ainterface. Physical Review A, 1988, 37, 1691-1696.	1.0	23
81	Solitary Modes and the Eckhaus Instability in Directional Solidification. Physical Review Letters, 1988, 61, 2574-2577.	2.9	148
82	f(Î±) curves: Experimental results. Physical Review A, 1988, 37, 523-530.	1.0	28
83	Testing shape selection in directional solidification. Physical Review B, 1987, 35, 1393-1396.	1.1	42
84	Finger narrowing under local perturbations in the Saffman-Taylor problem. Physical Review A, 1987, 36, 1894-1900.	1.0	59
85	Pattern formation behind a moving cholestericâ€“smectic-Ainterface. Physical Review A, 1987, 36, 5832-5838.	1.0	30
86	Instabilities of a Moving Nematic-Isotropic Interface. Physical Review Letters, 1987, 58, 2318-2321.	2.9	80
87	Structure of Arnold tongues and the f(Î±) spectrum for period doubling: Experimental results. Physical Review A, 1986, 34, 1621-1624.	1.0	63
88	Global Universality at the Onset of Chaos: Results of a Forced Rayleigh-BÃ©nard Experiment. Physical Review Letters, 1985, 55, 2798-2801.	2.9	272