Benno Liebchen

List of Publications by Year
in descending order

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58 papers	1,528 citations	361045 20 h-index	329751 37 g-index
63 all docs	63 docs citations	63 times ranked	1117 citing authors

#	Article	IF	Citations
1	Collective Behavior of Chiral Active Matter: Pattern Formation and Enhanced Flocking. Physical Review Letters, 2017, 119, 058002.	2.9	126
2	Clustering and Pattern Formation in Chemorepulsive Active Colloids. Physical Review Letters, 2015, 115, 258301.	2.9	111
3	Motility-Induced Temperature Difference in Coexisting Phases. Physical Review Letters, 2019, 123, 228001.	2.9	96
4	Synthetic Chemotaxis and Collective Behavior in Active Matter. Accounts of Chemical Research, 2018, 51, 2982-2990.	7.6	93
5	Light-controlled assembly of active colloidal molecules. Journal of Chemical Physics, 2019, 150, 094905.	1.2	83
6	Phoretic Interactions Generically Induce Dynamic Clusters and Wave Patterns in Active Colloids. Physical Review Letters, 2017, 118, 268001.	2.9	81
7	Ephemeral Protein Binding to DNA Shapes Stable Nuclear Bodies and Chromatin Domains. Biophysical Journal, 2017, 112, 1085-1093.	0.2	77
8	Viscotaxis : Microswimmer Navigation in Viscosity Gradients. Physical Review Letters, 2018, 120, 208002.	2.9	68
9	Activity induced synchronization: Mutual flocking and chiral self-sorting. Physical Review Research, 2019, 1, .	1.3	62
10	Strategic spatiotemporal vaccine distribution increases the survival rate in an infectious disease like Covid-19. Scientific Reports, 2020, 10, 21594.	1.6	59
11	Pattern formation in chemically interacting active rotors with self-propulsion. Soft Matter, 2016, 12, 7259-7264.	1.2	58
12	Which interactions dominate in active colloids?. Journal of Chemical Physics, 2019, 150, 061102.	1.2	47
13	Optimal navigation strategies for active particles. Europhysics Letters, 2019, 127, 34003.	0.7	38
14	Hydrodynamics can determine the optimal route for microswimmer navigation. Communications Physics, 2021, 4, .	2.0	36
15	Simultaneous phase separation and pattern formation in chiral active mixtures. Physical Review E, 2019, 100, 012406.	0.8	30
16	Micro-flock patterns and macro-clusters in chiral active Brownian disks. Journal of Physics Condensed Matter, 2018, 30, 084001.	0.7	24
17	Active Assembly of Spheroidal Photocatalytic BiVO₄ Microswimmers. Langmuir, 2020, 36, 12473-12480.	1.6	23
18	Membrane penetration and trapping of an active particle. Journal of Chemical Physics, 2019, 150, 064906.	1.2	22

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19	Interaction-induced current-reversals in driven lattices. New Journal of Physics, 2012, 14, 103032.	1.2	21
20	Interactions in active colloids. Journal of Physics Condensed Matter, 2022, 34, 083002.	0.7	21
21	Phase space interpretation of exponential Fermi acceleration. New Journal of Physics, 2011, 13, 093039.	1.2	20
22	Motility of active nematic films driven by â€œactive anchoringâ€• Soft Matter, 2017, 13, 6137-6144.	1.2	18
23	Competing Timescales Lead to Oscillations in Shear-Thickening Suspensions. Physical Review Letters, 2019, 123, 038004.	2.9	17
24	Simultaneous Control of Multispecies Particle Transport and Segregation in Driven Lattices. Physical Review Letters, 2018, 120, 218002.	2.9	16
25	Reinforcement learning of optimal active particle navigation. New Journal of Physics, 2022, 24, 073042.	1.2	16
26	Realization of a motility-trap for active particles. Communications Physics, 2020, 3, .	2.0	15
27	Active droploids. Nature Communications, 2021, 12, 6005.	5.8	15
28	Analysis of interface conversion processes of ballistic and diffusive motion in driven superlattices. Physical Review E, 2012, 86, 016201.	0.8	14
29	Unraveling modular microswimmers: From self-assembly to ion-exchange-driven motors. Physical Review E, 2018, 98, .	0.8	14
30	Clustering-induced velocity-reversals of active colloids mixed with passive particles. Journal of Chemical Physics, 2020, 152, 014903.	1.2	14
31	Formation of density waves via interface conversion of ballistic and diffusive motion. Europhysics Letters, 2011, 95, 30005.	0.7	13
32	Pattern Formation in Polymerizing Actin Flocks: Spirals, Spots, and Waves without Nonlinear Chemistry. Physical Review Letters, 2016, 117, 238002.	2.9	13
33	Propagating density spikes in light-powered motility-ratchets. Soft Matter, 2019, 15, 5185-5192.	1.2	13
34	Interaction induced directed transport in ac-driven periodic potentials. New Journal of Physics, 2015, 17, 083011.	1.2	12
35	Disorder Induced Regular Dynamics in Oscillating Lattices. Physical Review Letters, 2014, 112, 034101.	2.9	11
36	Shaping the gradients driving phoretic micro-swimmers: influence of swimming speed, budget of carbonic acid and environment. European Physical Journal E, 2021, 44, 41.	0.7	11

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37	Resonant population transfer in the time-dependent quantum elliptical billiard. New Journal of Physics, 2011, 13, 103019.	1.2	10
38	Mutation induced infection waves in diseases like COVID-19. Scientific Reports, 2022, 12, .	1.6	10
39	Patterned deposition of particles in spatio-temporally driven lattices. Europhysics Letters, 2011, 94, 40001.	0.7	9
40	Dimensional coupling-induced current reversal in two-dimensional driven lattices. Physical Review E, 2018, 97, 050202.	0.8	9
41	Theory of active particle penetration through a planar elastic membrane. New Journal of Physics, 2019, 21, 083014.	1.2	9
42	Swarm Hunting and Cluster Ejections in Chemically Communicating Active Mixtures. Scientific Reports, 2020, 10, 5594.	1.6	9
43	Collective self-optimization of communicating active particles. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	9
44	Freezing, accelerating, and slowing directed currents in real time with superimposed driven lattices. Physical Review E, 2016, 93, 052219.	0.8	7
45	Modeling Chemotaxis of Microswimmers: From Individual to Collective Behavior. , 2019, , 493-516.		7
46	Analysis of resonant population transfer in time-dependent elliptical quantum billiards. Physical Review E, 2013, 87, 012912.	0.8	6
47	Non-monotonic speed-dependence of microswimmers on wall distance. Soft Matter, 2021, 17, 9428-9433.	1.2	6
48	Taming polar active matter with moving substrates: directed transport and counterpropagating macrobands. New Journal of Physics, 2019, 21, 013023.	1.2	5
49	Symmetries and transport in site-dependent driven quantum lattices. Physical Review E, 2014, 90, 042913.	0.8	4
50	Response to â€œComment on â€˜Which interactions dominate in active colloids?â€™â€•[J. Chem. Phys. 151, 067101 (2019)]. Journal of Chemical Physics, 2019, 151, 067102.	1.2	4
51	Actomyosin Contraction Induces In-Bulk Motility of Cells and Droplets. Biophysical Journal, 2020, 119, 1025-1032.	0.2	4
52	Spatiotemporal Oscillation Patterns in the Collective Relaxation Dynamics of Interacting Particles in Periodic Potentials. Physical Review Letters, 2014, 112, 134102.	2.9	3
53	Site-selective particle deposition in periodically driven quantum lattices. Physical Review A, 2015, 91, .	1.0	3
54	MD simulations of charged binary mixtures reveal a generic relation between high- and low-temperature behavior. Journal of Chemical Physics, 2021, 154, 024501.	1.2	2

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55	Quench dynamics of two coupled zig-zag ion chains. Physics Letters, Section A: General, Atomic and Solid State Physics, 2016, 380, 2644-2649.	0.9	1
56	Neutral particle focusing in composite driven dissipative billiards. Nonlinear Dynamics, 2013, 74, 319-325.	2.7	0
57	Teilchendynamik fern vom Gleichgewicht. Physik in Unserer Zeit, 2014, 45, 191-197.	0.0	0
58	Excitation dynamics of interacting Rydberg atoms in small lattices. Physics Letters, Section A: General, Atomic and Solid State Physics, 2015, 379, 143-148.	0.9	0