

Michael F Hagan

List of Publications by Year in descending order

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100
papers

6,535
citations

57758

44
h-index

66911

78
g-index

109
all docs

109
docs citations

109
times ranked

5345
citing authors

#	ARTICLE	IF	CITATIONS
1	Steady states of active Brownian particles interacting with boundaries. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2022, 2022, 013208.	2.3	8
2	Tiling a tubule: how increasing complexity improves the yield of self-limited assembly. <i>Journal of Physics Condensed Matter</i> , 2022, 34, 134003.	1.8	6
3	Thermodynamic Size Control in Curvature-Frustrated Tubules: Self-Limitation with Open Boundaries. <i>ACS Nano</i> , 2022, 16, 9077-9085.	14.6	11
4	Microcompartment assembly around multicomponent fluid cargoes. <i>Journal of Chemical Physics</i> , 2022, 156, .	3.0	2
5	Machine learning forecasting of active nematics. <i>Soft Matter</i> , 2021, 17, 738-747.	2.7	22
6	Synchronized oscillations, traveling waves, and jammed clusters induced by steric interactions in active filament arrays. <i>Soft Matter</i> , 2021, 17, 1091-1104.	2.7	15
7	Avidity and surface mobility in multivalent ligand-receptor binding. <i>Nanoscale</i> , 2021, 13, 12602-12612.	5.6	17
8	Mechanisms of Scaffold-Mediated Microcompartment Assembly and Size Control. <i>ACS Nano</i> , 2021, 15, 4197-4212.	14.6	29
9	Equilibrium mechanisms of self-limiting assembly. <i>Reviews of Modern Physics</i> , 2021, 93, .	45.6	46
10	Programmable icosahedral shell system for virus trapping. <i>Nature Materials</i> , 2021, 20, 1281-1289.	27.5	116
11	Active liquid crystals powered by force-sensing DNA-motor clusters. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2021, 118, .	7.1	13
12	Multiscale Microtubule Dynamics in Active Nematics. <i>Physical Review Letters</i> , 2021, 127, 148001.	7.8	18
13	Vesicle shape transformations driven by confined active filaments. <i>Nature Communications</i> , 2021, 12, 7247.	12.8	22
14	Optimal Control of Active Nematics. <i>Physical Review Letters</i> , 2020, 125, 178005.	7.8	29
15	Two-step crystallization and solid-solid transitions in binary colloidal mixtures. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2020, 117, 27927-27933.	7.1	29
16	All twist and no bend makes raft edges splay: Spontaneous curvature of domain edges in colloidal membranes. <i>Science Advances</i> , 2020, 6, eaba2331.	10.3	6
17	Topological structure and dynamics of three-dimensional active nematics. <i>Science</i> , 2020, 367, 1120-1124.	12.6	135
18	Statistical properties of a tangentially driven active filament. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2020, 2020, 013216.	2.3	13

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19	Confinement-Induced Self-Pumping in 3D Active Fluids. <i>Physical Review Letters</i> , 2020, 125, 268003.	7.8	23
20	Structure, dynamics and phase behavior of short rod inclusions dissolved in a colloidal membrane. <i>Soft Matter</i> , 2019, 15, 7033-7042.	2.7	9
21	Equation of state of colloidal membranes. <i>Soft Matter</i> , 2019, 15, 6791-6802.	2.7	9
22	Conformational switching of chiral colloidal rafts regulates raft-raft attractions and repulsions. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2019, 116, 15792-15801.	7.1	7
23	Response of active Brownian particles to boundary driving. <i>Physical Review E</i> , 2019, 100, 042610.	2.1	11
24	Probing the transition state in enzyme catalysis by high-pressure NMR dynamics. <i>Nature Catalysis</i> , 2019, 2, 726-734.	34.4	30
25	Gaussian curvature and the budding kinetics of enveloped viruses. <i>PLoS Computational Biology</i> , 2019, 15, e1006602.	3.2	17
26	Nanoparticles binding to lipid membranes: from vesicle-based gels to vesicle tubulation and destruction. <i>Nanoscale</i> , 2019, 11, 18464-18474.	5.6	23
27	The interplay between activity and filament flexibility determines the emergent properties of active nematics. <i>Soft Matter</i> , 2019, 15, 94-101.	2.7	21
28	Identifying the Factors that Control the Size of Bacterial Microcompartments. <i>Biophysical Journal</i> , 2018, 114, 374a.	0.5	0
29	Defects and Chirality in the Nanoparticle-Directed Assembly of Spherocylindrical Shells of Virus Coat Proteins. <i>ACS Nano</i> , 2018, 12, 5323-5332.	14.6	14
30	Insensitivity of active nematic liquid crystal dynamics to topological constraints. <i>Physical Review E</i> , 2018, 97, 012702.	2.1	62
31	Why Enveloped Viruses Need Cores—The Contribution of a Nucleocapsid Core to Viral Budding. <i>Biophysical Journal</i> , 2018, 114, 619-630.	0.5	25
32	The role of the encapsulated cargo in microcompartment assembly. <i>PLoS Computational Biology</i> , 2018, 14, e1006351.	3.2	33
33	Self-assembly of convex particles on spherocylindrical surfaces. <i>Soft Matter</i> , 2018, 14, 5728-5740.	2.7	13
34	Gradation (approx. 10 size states) of synaptic strength by quantal addition of structural modules. <i>Philosophical Transactions of the Royal Society B: Biological Sciences</i> , 2017, 372, 20160328.	4.0	20
35	Steady-state distributions of ideal active Brownian particles under confinement and forcing. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2017, 2017, 043203.	2.3	48
36	Kinetic constraints on self-assembly into closed supramolecular structures. <i>Scientific Reports</i> , 2017, 7, 12295.	3.3	18

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37	Theory of microphase separation in bidisperse chiral membranes. <i>Physical Review E</i> , 2017, 96, 012704.	2.1	8
38	Equilibrium mappings in polar-isotropic confined active particles. <i>European Physical Journal E</i> , 2017, 40, 61.	1.6	18
39	Many-molecule encapsulation by an icosahedral shell. <i>ELife</i> , 2016, 5, .	6.0	36
40	The allosteric switching mechanism in bacteriophage MS2. <i>Journal of Chemical Physics</i> , 2016, 145, 035101.	3.0	12
41	Recent advances in coarse-grained modeling of virus assembly. <i>Current Opinion in Virology</i> , 2016, 18, 36-43.	5.4	94
42	Allosteric Control of Icosahedral Capsid Assembly. <i>Journal of Physical Chemistry B</i> , 2016, 120, 6306-6318.	2.6	27
43	Classical Nucleation Theory Description of Active Colloid Assembly. <i>Physical Review Letters</i> , 2016, 117, 148002.	7.8	61
44	Faceted particles formed by the frustrated packing of anisotropic colloids on curved surfaces. <i>Soft Matter</i> , 2016, 12, 8990-8998.	2.7	5
45	Interaction of chiral rafts in self-assembled colloidal membranes. <i>Physical Review E</i> , 2016, 93, 032706.	2.1	8
46	Probing a self-assembled fd virus membrane with a microtubule. <i>Physical Review E</i> , 2016, 93, 062608.	2.1	3
47	Emergent self-organization in active materials. <i>Current Opinion in Cell Biology</i> , 2016, 38, 74-80.	5.4	59
48	Activation Mechanism of a Signaling Protein at Atomic Resolution. <i>Biophysical Journal</i> , 2015, 108, 376a.	0.5	0
49	Membrane Charge Directs the Outcome of F-BAR Domain Lipid Binding and Autoregulation. <i>Cell Reports</i> , 2015, 13, 2597-2609.	6.4	35
50	Mechanisms of Virus Assembly. <i>Annual Review of Physical Chemistry</i> , 2015, 66, 217-239.	10.8	273
51	Simulations Show that Virus Assembly and Budding Are Facilitated by Membrane Microdomains. <i>Biophysical Journal</i> , 2015, 108, 585-595.	0.5	42
52	The energy landscape of adenylate kinase during catalysis. <i>Nature Structural and Molecular Biology</i> , 2015, 22, 124-131.	8.2	150
53	The Role of Packaging Sites in Efficient and Specific Virus Assembly. <i>Journal of Molecular Biology</i> , 2015, 427, 2451-2467.	4.2	39
54	Measuring Cohesion between Macromolecular Filaments One Pair at a Time: Depletion-Induced Microtubule Bundling. <i>Physical Review Letters</i> , 2015, 114, 138102.	7.8	58

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55	Dynamics and density distribution of strongly confined noninteracting nonaligning self-propelled particles in a nonconvex boundary. <i>Physical Review E</i> , 2015, 91, 012125.	2.1	65
56	Free energy landscape of activation in a signalling protein at atomic resolution. <i>Nature Communications</i> , 2015, 6, 7284.	12.8	75
57	Orientational order of motile defects in active nematics. <i>Nature Materials</i> , 2015, 14, 1110-1115.	27.5	246
58	Evidence Against the σ -T Coupling Mechanism of Activation in the Response Regulator NtrC. <i>Journal of Molecular Biology</i> , 2014, 426, 1554-1567.	4.2	27
59	Flagellar dynamics of a connected chain of active, polar, Brownian particles. <i>Journal of the Royal Society Interface</i> , 2014, 11, 20130884.	3.4	91
60	Dynamics of self-propelled particles under strong confinement. <i>Soft Matter</i> , 2014, 10, 5609-5617.	2.7	193
61	Hierarchical organization of chiral rafts in colloidal membranes. <i>Nature</i> , 2014, 513, 77-80.	27.8	54
62	Pathways for Virus Assembly around Nucleic Acids. <i>Journal of Molecular Biology</i> , 2014, 426, 3148-3165.	4.2	83
63	Using Markov state models to study self-assembly. <i>Journal of Chemical Physics</i> , 2014, 140, 214101.	3.0	46
64	Modeling Viral Capsid Assembly. <i>Advances in Chemical Physics</i> , 2014, 155, 1-68.	0.3	120
65	Reentrant phase behavior in active colloids with attraction. <i>Physical Review E</i> , 2013, 88, 012305.	2.1	147
66	Structure and Dynamics of a Phase-Separating Active Colloidal Fluid. <i>Physical Review Letters</i> , 2013, 110, 055701.	7.8	631
67	Brownian Dynamics Simulations of Polymer Mediated Capsid Assembly. <i>Biophysical Journal</i> , 2013, 104, 413a-414a.	0.5	0
68	Structure and Dynamics of a Phase-Separating Active Colloidal Fluid. <i>Biophysical Journal</i> , 2013, 104, 640a.	0.5	1
69	Viral genome structures are optimal for capsid assembly. <i>ELife</i> , 2013, 2, e00632.	6.0	113
70	Mechanisms of Budding of Nanoscale Particles through Lipid Bilayers. <i>Journal of Physical Chemistry B</i> , 2012, 116, 9595-9603.	2.6	44
71	An Examination of the Electrostatic Interactions between the N-Terminal Tail of the Brome Mosaic Virus Coat Protein and Encapsidated RNAs. <i>Journal of Molecular Biology</i> , 2012, 419, 284-300.	4.2	83
72	Simulations of HIV Capsid Protein Dimerization Reveal the Effect of Chemistry and Topography on the Mechanism of Hydrophobic Protein Association. <i>Biophysical Journal</i> , 2012, 103, 1363-1369.	0.5	13

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73	Banding, excitability and chaos in active nematic suspensions. <i>Nonlinearity</i> , 2012, 25, 2245-2269.	1.4	76
74	Self-assembly of 2D membranes from mixtures of hard rods and depleting polymers. <i>Soft Matter</i> , 2012, 8, 707-714.	2.7	44
75	Sitting at the Edge: How Biomolecules use Hydrophobicity to Tune Their Interactions and Function. <i>Journal of Physical Chemistry B</i> , 2012, 116, 2498-2503.	2.6	191
76	Spontaneous segregation of self-propelled particles with different motilities. <i>Soft Matter</i> , 2012, 8, 2527.	2.7	178
77	Reconfigurable self-assembly through chiral control of interfacial tension. <i>Nature</i> , 2012, 481, 348-351.	27.8	206
78	Dynamical self-regulation in self-propelled particle flows. <i>Physical Review E</i> , 2012, 85, 061903.	2.1	70
79	Differential assembly of Hepatitis B Virus core protein on single- and double-stranded nucleic acid suggest the dsDNA-filled core is spring-loaded. <i>Virology</i> , 2012, 430, 20-29.	2.4	68
80	Dynamic Encapsidation of a Flexible Polymer by an Icosahedral Virus. <i>Biophysical Journal</i> , 2011, 100, 402a.	0.5	0
81	Excitable Patterns in Active Nematics. <i>Physical Review Letters</i> , 2011, 106, 218101.	7.8	100
82	Mechanisms of kinetic trapping in self-assembly and phase transformation. <i>Journal of Chemical Physics</i> , 2011, 135, 104115.	3.0	93
83	Theoretical calculation of the phase behavior of colloidal membranes. <i>Physical Review E</i> , 2011, 84, 051402.	2.1	8
84	Prolonging assembly through dissociation: A self-assembly paradigm in microtubules. <i>Physical Review E</i> , 2011, 83, 051904.	2.1	11
85	Self-Limited Self-Assembly of Chiral Filaments. <i>Physical Review Letters</i> , 2010, 104, 258102.	7.8	49
86	Encapsulation of a polymer by an icosahedral virus. <i>Physical Biology</i> , 2010, 7, 045003.	1.8	98
87	Understanding the Concentration Dependence of Viral Capsid Assembly Kinetics—the Origin of the Lag Time and Identifying the Critical Nucleus Size. <i>Biophysical Journal</i> , 2010, 98, 1065-1074.	0.5	95
88	Mechanisms of Capsid Assembly around a Polymer. <i>Biophysical Journal</i> , 2010, 99, 619-628.	0.5	52
89	A theory for viral capsid assembly around electrostatic cores. <i>Journal of Chemical Physics</i> , 2009, 130, 114902.	3.0	68
90	The role of collective motion in examples of coarsening and self-assembly. <i>Soft Matter</i> , 2009, 5, 1251-1262.	2.7	113

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91	Pair Potential of Charged Colloidal Stars. <i>Physical Review Letters</i> , 2009, 102, 108302.	7.8	26
92	Mechanisms Of Viral Capsid Assembly Around A Polymer. <i>Biophysical Journal</i> , 2009, 96, 420a.	0.5	0
93	Mechanisms of Size Control and Polymorphism in Viral Capsid Assembly. <i>Nano Letters</i> , 2008, 8, 3850-3857.	9.1	82
94	Controlling viral capsid assembly with templating. <i>Physical Review E</i> , 2008, 77, 051904.	2.1	66
95	Fluctuation-dissipation ratios in the dynamics of self-assembly. <i>Physical Review E</i> , 2007, 76, 021119.	2.1	49
96	Dynamic Pathways for Viral Capsid Assembly. <i>Biophysical Journal</i> , 2006, 91, 42-54.	0.5	349
97	Hybridization dynamics of surface immobilized DNA. <i>Journal of Chemical Physics</i> , 2004, 120, 4958-4968.	3.0	100
98	Atomistic understanding of kinetic pathways for single base-pair binding and unbinding in DNA. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2003, 100, 13922-13927.	7.1	117
99	Nanomechanical Forces Generated by Surface Grafted DNA. <i>Journal of Physical Chemistry B</i> , 2002, 106, 10163-10173.	2.6	139
100	Origin of nanomechanical cantilever motion generated from biomolecular interactions. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2001, 98, 1560-1564.	7.1	200