Thomas C T Michaels

List of Publications by Year
in descending order

74 papers	4,612 citations	147566 31 h-index	114278 63 g-index
89 all docs	89 docs citations	89 times ranked	4679 citing authors

#	Article	IF	Citations
1	Molecular mechanisms of protein aggregation from global fitting of kinetic models. Nature Protocols, 2016, 11, 252-272.	5.5	546
2	Lipid vesicles trigger Î±-synuclein aggregation by stimulating primary nucleation. Nature Chemical Biology, 2015, 11, 229-234.	3.9	532
3	Secondary nucleation in amyloid formation. Chemical Communications, 2018, 54, 8667-8684.	2.2	323
4	Dynamics of oligomer populations formed during the aggregation of Alzheimerâ€™s AÎ²42 peptide. Nature Chemistry, 2020, 12, 445-451.	6.6	223
5	Kinetic analysis reveals the diversity of microscopic mechanisms through which molecular chaperones suppress amyloid formation. Nature Communications, 2016, 7, 10948.	5.8	219
6	Cholesterol catalyses AÎ²42 aggregation through a heterogeneous nucleation pathway in the presence of lipid membranes. Nature Chemistry, 2018, 10, 673-683.	6.6	186
7	Chemical Kinetics for Bridging Molecular Mechanisms and Macroscopic Measurements of Amyloid Fibril Formation. Annual Review of Physical Chemistry, 2018, 69, 273-298.	4.8	161
8	Distinct thermodynamic signatures of oligomer generation in the aggregation of the amyloid-Î² peptide. Nature Chemistry, 2018, 10, 523-531.	6.6	129
9	Fabrication of fibrillosomes from droplets stabilized by protein nanofibrils at all-aqueous interfaces. Nature Communications, 2016, 7, 12934.	5.8	116
10	Trodusquemine enhances AÎ²42 aggregation but suppresses its toxicity by displacing oligomers from cell membranes. Nature Communications, 2019, 10, 225.	5.8	111
11	Kinetic diversity of amyloid oligomers. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 12087-12094.	3.3	103
12	Small-molecule sequestration of amyloid-Î² as a drug discovery strategy for Alzheimerâ€™s disease. Science Advances, 2020, 6, .	4.7	95
13	Controlling the Physical Dimensions of Peptide Nanotubes by Supramolecular Polymer Coassembly. ACS Nano, 2016, 10, 7436-7442.	7.3	91
14	Physical determinants of the self-replication of protein fibrils. Nature Physics, 2016, 12, 874-880.	6.5	90
15	Dynamic microfluidic control of supramolecular peptide self-assembly. Nature Communications, 2016, 7, 13190.	5.8	89
16	Budding-like division of all-aqueous emulsion droplets modulated by networks of protein nanofibrils. Nature Communications, 2018, 9, 2110.	5.8	82
17	Kinetics of spontaneous filament nucleation via oligomers: Insights from theory and simulation. Journal of Chemical Physics, 2016, 145, 211926.	1.2	73
18	Measurement of Tau Filament Fragmentation Provides Insights into Prion-like Spreading. ACS Chemical Neuroscience, 2018, 9, 1276-1282.	1.7	68

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19	Physical Determinants of Amyloid Assembly in Biofilm Formation. MBio, 2019, 10, .	1.8	66
20	Î²-Synuclein suppresses both the initiation and amplification steps of Î±-synuclein aggregation via competitive binding to surfaces. Scientific Reports, 2016, 6, 36010.	1.6	65
21	Identification of on- and off-pathway oligomers in amyloid fibril formation. Chemical Science, 2020, 11, 6236-6247.	3.7	64
22	SAR by kinetics for drug discovery in protein misfolding diseases. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 10245-10250.	3.3	54
23	Thermodynamic and kinetic design principles for amyloid-aggregation inhibitors. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 24251-24257.	3.3	49
24	Quantitative analysis of co-oligomer formation by amyloid-beta peptide isoforms. Scientific Reports, 2016, 6, 28658.	1.6	45
25	Direct Observation of Oligomerization by Single Molecule Fluorescence Reveals a Multistep Aggregation Mechanism for the Yeast Prion Protein Ure2. Journal of the American Chemical Society, 2018, 140, 2493-2503.	6.6	44
26	Dynamics of protein aggregation and oligomer formation governed by secondary nucleation. Journal of Chemical Physics, 2015, 143, 054901.	1.2	41
27	Quantifying Co-Oligomer Formation by Î±-Synuclein. ACS Nano, 2018, 12, 10855-10866.	7.3	38
28	Direct measurement of lipid membrane disruption connects kinetics and toxicity of AÎ²42 aggregation. Nature Structural and Molecular Biology, 2020, 27, 886-891.	3.6	38
29	Spatial control of irreversible protein aggregation. ELife, 2019, 8, .	2.8	37
30	Role of filament annealing in the kinetics and thermodynamics of nucleated polymerization. Journal of Chemical Physics, 2014, 140, 214904.	1.2	36
31	Scale invariance of a diodelike tunnel junction. Physical Review B, 2013, 87, .	1.1	34
32	Mean-field master equation formalism for biofilament growth. American Journal of Physics, 2014, 82, 476-483.	0.3	33
33	Elastic instability-mediated actuation by a supra-molecular polymer. Nature Physics, 2016, 12, 926-930.	6.5	32
34	Hamiltonian Dynamics of Protein Filament Formation. Physical Review Letters, 2016, 116, 038101.	2.9	32
35	Fluctuations in the Kinetics of Linear Protein Self-Assembly. Physical Review Letters, 2016, 116, 258103.	2.9	32
36	Asymptotic solutions of the Oosawa model for the length distribution of biofilaments. Journal of Chemical Physics, 2014, 140, 194906.	1.2	28

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37	Thermodynamics of Polypeptide Supramolecular Assembly in the Short-Chain Limit. Journal of the American Chemical Society, 2017, 139, 16134-16142.	6.6	28
38	Synthesis of Nonequilibrium Supramolecular Peptide Polymers on a Microfluidic Platform. Journal of the American Chemical Society, 2016, 138, 9589-9596.	6.6	27
39	Screening of small molecules using the inhibition of oligomer formation in Î±-synuclein aggregation as a selection parameter. Communications Chemistry, 2020, 3, .	2.0	27
40	Aggregationâ€Prone Amyloidâ€Î²â‹…Cu^{II} Species Formed on the Millisecond Timescale under Mildly Acidic Conditions. ChemBioChem, 2015, 16, 1293-1297.	1.3	26
41	Micro- and nanoscale hierarchical structure of coreâ€“shell protein microgels. Journal of Materials Chemistry B, 2016, 4, 7989-7999.	2.9	26
42	Force generation by the growth of amyloid aggregates. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 9524-9529.	3.3	25
43	Kinetic theory of protein filament growth: Self-consistent methods and perturbative techniques. International Journal of Modern Physics B, 2015, 29, 1530002.	1.0	24
44	The catalytic nature of protein aggregation. Journal of Chemical Physics, 2020, 152, 045101.	1.2	24
45	Scaling analysis reveals the mechanism and rates of prion replication in vivo. Nature Structural and Molecular Biology, 2021, 28, 365-372.	3.6	22
46	Physical principles of filamentous protein self-assembly kinetics. Journal of Physics Condensed Matter, 2017, 29, 153002.	0.7	21
47	Optimal control strategies for inhibition of protein aggregation. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 14593-14598.	3.3	21
48	The length distribution of frangible biofilaments. Journal of Chemical Physics, 2015, 143, 164901.	1.2	19
49	Reaction rate theory for supramolecular kinetics: application to protein aggregation. Molecular Physics, 2018, 116, 3055-3065.	0.8	19
50	Stochastic calculus of protein filament formation under spatial confinement. New Journal of Physics, 2018, 20, 055007.	1.2	19
51	Mechanics and kinetics of dynamic instability. ELife, 2020, 9, .	2.8	19
52	Kinetic constraints on self-assembly into closed supramolecular structures. Scientific Reports, 2017, 7, 12295.	1.6	18
53	Kinetic Analysis of Amyloid Formation. Methods in Molecular Biology, 2018, 1779, 181-196.	0.4	16
54	A rationally designed bicyclic peptide remodels AÎ²42 aggregation in vitro and reduces its toxicity in a worm model of Alzheimerâ€™s disease. Scientific Reports, 2020, 10, 15280.	1.6	15

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55	Sequential Release of Proteins from Structured Multishell Microcapsules. Biomacromolecules, 2017, 18, 3052-3059.	2.6	14
56	Self-Assembly-Mediated Release of Peptide Nanoparticles through Jets Across Microdroplet Interfaces. ACS Applied Materials & Interfaces, 2018, 10, 27578-27583.	4.0	14
57	Cooperative Assembly of Hsp70 Subdomain Clusters. Biochemistry, 2018, 57, 3641-3649.	1.2	13
58	Kinetic analysis reveals that independent nucleation events determine the progression of polyglutamine aggregation in <i>C. elegans</i>. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	13
59	pHâ€Responsive Capsules with a Fibril Scaffold Shell Assembled from an Amyloidogenic Peptide. Small, 2021, 17, e2007188.	5.2	13
60	Kinetic profiling of therapeutic strategies for inhibiting the formation of amyloid oligomers. Journal of Chemical Physics, 2022, 156, 164904.	1.2	13
61	Scaling and dimensionality in the chemical kinetics of protein filament formation. International Reviews in Physical Chemistry, 2016, 35, 679-703.	0.9	10
62	Optimal control of aging in complex networks. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 20404-20410.	3.3	10
63	Statistical Mechanics of Globular Oligomer Formation by Protein Molecules. Journal of Physical Chemistry B, 2018, 122, 11721-11730.	1.2	9
64	Quantitative Analysis of Diffusive Reactions at the Solidâ€“Liquid Interface in Finite Systems. Journal of Physical Chemistry Letters, 2014, 5, 695-699.	2.1	8
65	Deformable and Robust Coreâ€“Shell Protein Microcapsules Templated by Liquidâ€“Liquid Phaseâ€Separated Microdroplets. Advanced Materials Interfaces, 2021, 8, 2101071.	1.9	8
66	Scaling theory of electric-field-assisted tunnelling. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2014, 470, 20140014.	1.0	6
67	Domain-wall free energy in Heisenberg ferromagnets. Physical Review B, 2014, 89, .	1.1	6
68	Dynamics and Control of Peptide Self-Assembly and Aggregation. Advances in Experimental Medicine and Biology, 2019, 1174, 1-33.	0.8	6
69	The cusp of an apple. Nature Physics, 2021, 17, 1125-1129.	6.5	5
70	Dynamics of heteromolecular filament formation. Journal of Chemical Physics, 2016, 145, 175101.	1.2	4
71	Quantifying Measurement Fluctuations from Stochastic Surface Processes on Sensors with Heterogeneous Sensitivity. Physical Review Applied, 2016, 5, .	1.5	4
72	Universality of filamentous aggregation phenomena. Physical Review E, 2019, 99, 062415.	0.8	4

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73	Mechanical basis for fibrillar bundle morphology. Soft Matter, 2020, 16, 9306-9318.	1.2	4
74	Feedback control of protein aggregation. Journal of Chemical Physics, 2021, 155, 064102.	1.2	4