

Alexei V Tkachenko

List of Publications by Year in descending order

Source: <https://exaly.com/author-pdf/7799122/publications.pdf>

Version: 2024-02-01

80
papers

3,472
citations

172457

29
h-index

144013

57
g-index

89
all docs

89
docs citations

89
times ranked

3770
citing authors

#	ARTICLE	IF	CITATIONS
1	Calcitic microlenses as part of the photoreceptor system in brittlestars. <i>Nature</i> , 2001, 412, 819-822.	27.8	605
2	Diamond family of nanoparticle superlattices. <i>Science</i> , 2016, 351, 582-586.	12.6	331
3	Self-organized architectures from assorted DNA-framed nanoparticles. <i>Nature Chemistry</i> , 2016, 8, 867-873.	13.6	210
4	Stress propagation through frictionless granular material. <i>Physical Review E</i> , 1999, 60, 687-696.	2.1	155
5	Memory Effects in Granular Materials. <i>Physical Review Letters</i> , 2000, 85, 3632-3635.	7.8	138
6	Morphological Diversity of DNA-Colloidal Self-Assembly. <i>Physical Review Letters</i> , 2002, 89, 148303.	7.8	137
7	Simple Quantitative Model for the Reversible Association of DNA Coated Colloids. <i>Physical Review Letters</i> , 2009, 102, 048301.	7.8	124
8	In situ microscopy of the self-assembly of branched nanocrystals in solution. <i>Nature Communications</i> , 2016, 7, 11213.	12.8	91
9	DNA-programmed mesoscopic architecture. <i>Physical Review E</i> , 2013, 87, 062310.	2.1	89
10	Fluctuation-Stabilized Surface Freezing of Chain Molecules. <i>Physical Review Letters</i> , 1996, 76, 2527-2530.	7.8	85
11	Aggregation-disaggregation transition of DNA-coated colloids: Experiments and theory. <i>Physical Review E</i> , 2010, 81, 041404.	2.1	84
12	Design Rule for Colloidal Crystals of DNA-Functionalized Particles. <i>Physical Review Letters</i> , 2011, 107, 045902.	7.8	74
13	Two-Dimensional DNA-Programmable Assembly of Nanoparticles at Liquid Interfaces. <i>Journal of the American Chemical Society</i> , 2014, 136, 8323-8332.	13.7	73
14	Linear Mesostructures in DNA- α -Nanorod Self-Assembly. <i>ACS Nano</i> , 2013, 7, 5437-5445.	14.6	72
15	Time-dependent heterogeneity leads to transient suppression of the COVID-19 epidemic, not herd immunity. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2021, 118, .	7.1	57
16	Kinetic Pinning and Biological Antifreezes. <i>Physical Review Letters</i> , 2004, 93, 128102.	7.8	54
17	Communication: A simple analytical formula for the free energy of ligand-receptor-mediated interactions. <i>Journal of Chemical Physics</i> , 2013, 138, 021102.	3.0	52
18	Stress in frictionless granular material: Adaptive network simulations. <i>Physical Review E</i> , 2000, 62, 2510-2516.	2.1	44

#	ARTICLE	IF	CITATIONS
19	Theory of Programmable Hierarchic Self-Assembly. <i>Physical Review Letters</i> , 2011, 106, 255501.	7.8	44
20	Internal Structure of Nanoparticle Dimers Linked by DNA. <i>ACS Nano</i> , 2012, 6, 6793-6802.	14.6	43
21	Glassy behavior of the parking lot model. <i>Physical Review E</i> , 1999, 59, 3094-3099.	2.1	42
22	Theory of surface freezing of alkanes. <i>Physical Review E</i> , 1997, 55, 778-784.	2.1	41
23	Kinetic Limitations of Cooperativity-Based Drug Delivery Systems. <i>Physical Review Letters</i> , 2008, 100, 158102.	7.8	40
24	Disruption of Protein-Mediated DNA Looping by Tension in the Substrate DNA. <i>Biophysical Journal</i> , 2005, 88, 1692-1701.	0.5	36
25	Spontaneous emergence of autocatalytic information-coding polymers. <i>Journal of Chemical Physics</i> , 2015, 143, 045102.	3.0	32
26	Statistical mechanics of DNA-mediated colloidal aggregation. <i>Physical Review E</i> , 2006, 74, 041408.	2.1	30
27	Precursors of order in aggregates of patchy particles. <i>Physical Review E</i> , 2013, 88, 012302.	2.1	30
28	Nematic-Smectic Transition of Semiflexible Chains. <i>Physical Review Letters</i> , 1996, 77, 4218-4221.	7.8	29
29	Robust propagation direction of stresses in a minimal granular packing. <i>European Physical Journal E</i> , 2001, 6, 99-105.	1.6	29
30	Unifying Interfacial Self-Assembly and Surface Freezing. <i>Physical Review Letters</i> , 2011, 106, 137801.	7.8	29
31	Super-compressible DNA nanoparticle lattices. <i>Soft Matter</i> , 2013, 9, 10452.	2.7	29
32	Entropic elasticity and negative thermal expansion in a simple cubic crystal. <i>Science Advances</i> , 2019, 5, eaay2748.	10.3	28
33	Stochastic social behavior coupled to COVID-19 dynamics leads to waves, plateaus, and an endemic state. <i>ELife</i> , 2021, 10, .	6.0	28
34	Modeling COVID-19 Dynamics in Illinois under Nonpharmaceutical Interventions. <i>Physical Review X</i> , 2020, 10, .	8.9	27
35	Trachenko and Rabin Reply:. <i>Physical Review Letters</i> , 1997, 79, 532-532.	7.8	26
36	Generic phase diagram of binary superlattices. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2016, 113, 10269-10274.	7.1	26

#	ARTICLE	IF	CITATIONS
37	Structured sequences emerge from random pool when replicated by templated ligation. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.1	24
38	Programmable self-assembly of diamond polymorphs from chromatic patchy particles. Physical Review E, 2018, 98, .	2.1	22
39	Mitigation of SARS-CoV-2 transmission at a large public university. Nature Communications, 2022, 13, .	12.8	21
40	Effects of kinks on DNA elasticity. Physical Review E, 2005, 71, 051905.	2.1	20
41	Coupling between Thermodynamics and Conformations in Wormlike Polymer Nematics. Macromolecules, 1995, 28, 8646-8656.	4.8	19
42	DNA-programmable particle superlattices: Assembly, phases, and dynamic control. MRS Bulletin, 2016, 41, 381-387.	3.5	19
43	Errorproof programmable self-assembly of DNA-nanoparticle clusters. Physical Review E, 2006, 74, 041406.	2.1	18
44	Deformation-Induced Anomalous Swelling of Topologically Disordered Gels. Macromolecules, 1994, 27, 7192-7196.	4.8	16
45	Onset of natural selection in populations of autocatalytic heteropolymers. Journal of Chemical Physics, 2018, 149, 134901.	3.0	15
46	Effects of sequence disorder on DNA looping and cyclization. Physical Review E, 2007, 76, 021901.	2.1	14
47	Sequential programmable self-assembly: Role of cooperative interactions. Journal of Chemical Physics, 2016, 144, 094903.	3.0	14
48	Chromatic patchy particles: Effects of specific interactions on liquid structure. Physical Review E, 2015, 92, 012308.	2.1	13
49	Colloids with key-lock interactions: Nonexponential relaxation, aging, and anomalous diffusion. Physical Review E, 2007, 76, 041405.	2.1	12
50	A generalized theory of DNA looping and cyclization. Europhysics Letters, 2010, 89, 58005.	2.0	12
51	Layer-by-layer assembly of patchy particles as a route to nontrivial structures. Physical Review E, 2017, 96, 022601.	2.1	12
52	Self-assembly of DNA-coded nanoclusters. Physical Review E, 2006, 74, 040401.	2.1	11
53	Effect of Boundary Conditions on Fluctuations and Solid~Liquid Transition in Confined Films. Langmuir, 1997, 13, 7146-7150.	3.5	10
54	Self-assembling DNA-caged particles: Nanoblocks for hierarchical self-assembly. Physical Review E, 2009, 79, 011404.	2.1	10

#	ARTICLE	IF	CITATIONS
55	Confinement-induced freezing and the Lindemann criterion. <i>Solid State Communications</i> , 1997, 103, 361-364.	1.9	8
56	Empty perovskites as Coulomb floppy networks: Entropic elasticity and negative thermal expansion. <i>Physical Review B</i> , 2021, 103, .	3.2	8
57	How to build nanoblocks using DNA scaffolds. <i>Europhysics Letters</i> , 2008, 84, 20010.	2.0	7
58	Effect of chain flexibility on the nematic-smectic transition. <i>Physical Review E</i> , 1998, 58, 5997-6002.	2.1	6
59	Electrostatic effects in DNA stretching. <i>Physical Review E</i> , 2006, 74, 041801.	2.1	6
60	Elasticity of strongly stretched ssDNA. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2007, 384, 133-136.	2.6	6
61	Unfolding and unzipping of single-stranded DNA by stretching. <i>Physical Review E</i> , 2004, 70, 051901.	2.1	5
62	Understanding the role of thermal fluctuations in DNA looping. , 2007, , .		5
63	Communication: Programmable self-assembly of thin-shell mesostructures. <i>Journal of Chemical Physics</i> , 2017, 147, 141103.	3.0	5
64	Isotropic–nematic–smectic: importance of being flexible. <i>Physica A: Statistical Mechanics and Its Applications</i> , 1998, 249, 380-385.	2.6	4
65	Dynamics of particles with “key-lock” interactions. <i>Europhysics Letters</i> , 2008, 81, 48009.	2.0	4
66	Controlling morphology in hybrid isotropic/patchy particle assemblies. <i>Journal of Chemical Physics</i> , 2022, 156, 024501.	3.0	4
67	Publisher’s Note: Design Rule for Colloidal Crystals of DNA-Functionalized Particles [<i>Phys. Rev. Lett.</i> 107, 045902 (2011)]. <i>Physical Review Letters</i> , 2011, 107, .	7.8	3
68	The role of thermal fluctuations and mechanical constraints in protein-mediated DNA looping. , 2005, , .		2
69	Compact interaction potential for van der Waals nanorods. <i>Physical Review E</i> , 2018, 98, .	2.1	2
70	Symmetry-specific orientational order parameters for complex structures. <i>Journal of Chemical Physics</i> , 2022, 156, 054108.	3.0	2
71	Chaos over Order: Mapping 3D Rotation of Triaxial Asteroids and Minor Planets. <i>Monthly Notices of the Royal Astronomical Society</i> , 0, , .	4.4	2
72	Comment on “Colossal Pressure-Induced Softening in Scandium Fluoride”. <i>Physical Review Letters</i> , 2021, 126, 179601.	7.8	1

#	ARTICLE	IF	CITATIONS
73	Thermomechanical force in superfluid HE II. Journal of Low Temperature Physics, 1994, 96, 61-71.	1.4	0
74	Fluctuations, Lindemann Criterion and Liquid-Solid Transition in Thin Films. Materials Research Society Symposia Proceedings, 1996, 463, 293.	0.1	0
75	Reply to the Comment by J.N. Roux on "Robust propagation direction of stresses in a minimal granular packing", European Physical Journal E, 2002, 7, 299-300.	1.6	0
76	The Role of Sequence-Dependent Mechanics in DNA Looping. Biophysical Journal, 2009, 96, 20a.	0.5	0
77	A Generalized Theory of DNA Cyclization and Loop Formation. Biophysical Journal, 2010, 98, 469a.	0.5	0
78	Characterization and Modeling of Coarsening Mechanisms in Supported Nanoparticle Ensemble.. Microscopy and Microanalysis, 2019, 25, 1420-1421.	0.4	0
79	Conditional emergence of classical domain and branching of quantum histories. Physical Review Research, 2020, 2, .	3.6	0
80	Geometric and topological entropies of sphere packing. Physical Review E, 2022, 105, 014117.	2.1	0