Alexei V Tkachenko

List of Publications by Year
in descending order

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	Controlling morphology in hybrid isotropic/patchy particle assemblies. Journal of Chemical Physics, 2022, 156, 024501.	3.0	4
2	Geometric and topological entropies of sphere packing. Physical Review E, 2022, 105, 014117.	2.1	0
3	Symmetry-specific orientational order parameters for complex structures. Journal of Chemical Physics, 2022, 156, 054108.	3.0	2
4	Mitigation of SARS-CoV-2 transmission at a large public university. Nature Communications, 2022, 13, .	12.8	21
5	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
6	Empty perovskites as Coulomb floppy networks: Entropic elasticity and negative thermal expansion. Physical Review B, 2021, 103, .	3.2	8
7	Time-dependent heterogeneity leads to transient suppression of the COVID-19 epidemic, not herd immunity. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.1	57
8	Comment on â€œColossal Pressure-Induced Softening in Scandium Fluorideâ€. Physical Review Letters, 2021, 126, 179601.	7.8	1
9	Stochastic social behavior coupled to COVID-19 dynamics leads to waves, plateaus, and an endemic state. ELife, 2021, 10, .	6.0	28
10	Modeling COVID-19 Dynamics in Illinois under Nonpharmaceutical Interventions. Physical Review X, 2020, 10, .	8.9	27
11	Conditional emergence of classical domain and branching of quantum histories. Physical Review Research, 2020, 2, .	3.6	0
12	Characterization and Modeling of Coarsening Mechanisms in Supported Nanoparticle Ensemble.. Microscopy and Microanalysis, 2019, 25, 1420-1421.	0.4	0
13	Entropic elasticity and negative thermal expansion in a simple cubic crystal. Science Advances, 2019, 5, eaay2748.	10.3	28
14	Onset of natural selection in populations of autocatalytic heteropolymers. Journal of Chemical Physics, 2018, 149, 134901.	3.0	15
15	Compact interaction potential for van der Waals nanorods. Physical Review E, 2018, 98, .	2.1	2
16	Programmable self-assembly of diamond polymorphs from chromatic patchy particles. Physical Review E, 2018, 98, .	2.1	22
17	Layer-by-layer assembly of patchy particles as a route to nontrivial structures. Physical Review E, 2017, 96, 022601.	2.1	12
18	Communication: Programmable self-assembly of thin-shell mesostructures. Journal of Chemical Physics, 2017, 147, 141103.	3.0	5

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19	Sequential programmable self-assembly: Role of cooperative interactions. Journal of Chemical Physics, 2016, 144, 094903.	3.0	14
20	DNA-programmable particle superlattices: Assembly, phases, and dynamic control. MRS Bulletin, 2016, 41, 381-387.	3.5	19
21	Generic phase diagram of binary superlattices. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 10269-10274.	7.1	26
22	In situ microscopy of the self-assembly of branched nanocrystals in solution. Nature Communications, 2016, 7, 11213.	12.8	91
23	Self-organized architectures from assorted DNA-framed nanoparticles. Nature Chemistry, 2016, 8, 867-873.	13.6	210
24	Diamond family of nanoparticle superlattices. Science, 2016, 351, 582-586.	12.6	331
25	Chromatic patchy particles: Effects of specific interactions on liquid structure. Physical Review E, 2015, 92, 012308.	2.1	13
26	Spontaneous emergence of autocatalytic information-coding polymers. Journal of Chemical Physics, 2015, 143, 045102.	3.0	32
27	Two-Dimensional DNA-Programmable Assembly of Nanoparticles at Liquid Interfaces. Journal of the American Chemical Society, 2014, 136, 8323-8332.	13.7	73
28	Super-compressible DNA nanoparticle lattices. Soft Matter, 2013, 9, 10452.	2.7	29
29	Precursors of order in aggregates of patchy particles. Physical Review E, 2013, 88, 012302.	2.1	30
30	Linear Mesostructures in DNAâ€"Nanorod Self-Assembly. ACS Nano, 2013, 7, 5437-5445.	14.6	72
31	DNA-programmed mesoscopic architecture. Physical Review E, 2013, 87, 062310.	2.1	89
32	Communication: A simple analytical formula for the free energy of ligandâ€"receptor-mediated interactions. Journal of Chemical Physics, 2013, 138, 021102.	3.0	52
33	Internal Structure of Nanoparticle Dimers Linked by DNA. ACS Nano, 2012, 6, 6793-6802.	14.6	43
34	Design Rule for Colloidal Crystals of DNA-Functionalized Particles. Physical Review Letters, 2011, 107, 045902.	7.8	74
35	Unifying Interfacial Self-Assembly and Surface Freezing. Physical Review Letters, 2011, 106, 137801.	7.8	29
36	Publisherâ€™s Note: Design Rule for Colloidal Crystals of DNA-Functionalized Particles [Phys. Rev. Lett.107, 045902 (2011)]. Physical Review Letters, 2011, 107, .	7.8	3

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37	Theory of Programmable Hierarchic Self-Assembly. Physical Review Letters, 2011, 106, 255501.	7.8	44
38	Aggregation-disaggregation transition of DNA-coated colloids: Experiments and theory. Physical Review E, 2010, 81, 041404.	2.1	84
39	A generalized theory of DNA looping and cyclization. Europhysics Letters, 2010, 89, 58005.	2.0	12
40	A Generalized Theory of DNA Cyclization and Loop Formation. Biophysical Journal, 2010, 98, 469a.	0.5	0
41	Self-assembling DNA-caged particles: Nanoblocks for hierarchical self-assembly. Physical Review E, 2009, 79, 011404.	2.1	10
42	Simple Quantitative Model for the Reversible Association of DNA Coated Colloids. Physical Review Letters, 2009, 102, 048301.	7.8	124
43	The Role of Sequence-Dependent Mechanics in DNA Looping. Biophysical Journal, 2009, 96, 20a.	0.5	0
44	Kinetic Limitations of Cooperativity-Based Drug Delivery Systems. Physical Review Letters, 2008, 100, 158102.	7.8	40
45	Dynamics of particles with â€œkey-lockâ€•interactions. Europhysics Letters, 2008, 81, 48009.	2.0	4
46	How to build nanoblocks using DNA scaffolds. Europhysics Letters, 2008, 84, 20010.	2.0	7
47	Colloids with key-lock interactions: Nonexponential relaxation, aging, and anomalous diffusion. Physical Review E, 2007, 76, 041405.	2.1	12
48	Effects of sequence disorder on DNA looping and cyclization. Physical Review E, 2007, 76, 021901.	2.1	14
49	Understanding the role of thermal fluctuations in DNA looping. , 2007, , .		5
50	Elasticity of strongly stretched ssDNA. Physica A: Statistical Mechanics and Its Applications, 2007, 384, 133-136.	2.6	6
51	Self-assembly of DNA-coded nanoclusters. Physical Review E, 2006, 74, 040401.	2.1	11
52	Errorproof programmable self-assembly of DNA-nanoparticle clusters. Physical Review E, 2006, 74, 041406.	2.1	18
53	Electrostatic effects in DNA stretching. Physical Review E, 2006, 74, 041801.	2.1	6
54	Statistical mechanics of DNA-mediated colloidal aggregation. Physical Review E, 2006, 74, 041408.	2.1	30

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55	The role of thermal fluctuations and mechanical constraints in protein-mediated DNA looping. , 2005, , .		2
56	Effects of kinks on DNA elasticity. Physical Review E, 2005, 71, 051905.	2.1	20
57	Disruption of Protein-Mediated DNA Looping by Tension in the Substrate DNA. Biophysical Journal, 2005, 88, 1692-1701.	0.5	36
58	Unfolding and unzipping of single-stranded DNA by stretching. Physical Review E, 2004, 70, 051901.	2.1	5
59	Kinetic Pinning and Biological Antifreezes. Physical Review Letters, 2004, 93, 128102.	7.8	54
60	Morphological Diversity of DNA-Colloidal Self-Assembly. Physical Review Letters, 2002, 89, 148303.	7.8	137
61	Reply to the Comment by J.N. Roux on â€œRobust propagation direction of stresses in a minimal granular packingâ€• European Physical Journal E, 2002, 7, 299-300.	1.6	0
62	Robust propagation direction of stresses in a minimal granular packing. European Physical Journal E, 2001, 6, 99-105.	1.6	29
63	Calcitic microlenses as part of the photoreceptor system in brittlestars. Nature, 2001, 412, 819-822.	27.8	605
64	Stress in frictionless granular material: Adaptive network simulations. Physical Review E, 2000, 62, 2510-2516.	2.1	44
65	Memory Effects in Granular Materials. Physical Review Letters, 2000, 85, 3632-3635.	7.8	138
66	Glassy behavior of the parking lot model. Physical Review E, 1999, 59, 3094-3099.	2.1	42
67	Stress propagation through frictionless granular material. Physical Review E, 1999, 60, 687-696.	2.1	155
68	Isotropicâ€"nematicâ€"smectic: importance of being flexible. Physica A: Statistical Mechanics and Its Applications, 1998, 249, 380-385.	2.6	4
69	Effect of chain flexibility on the nematic-smectic transition. Physical Review E, 1998, 58, 5997-6002.	2.1	6
70	Tkachenko and Rabin Reply:. Physical Review Letters, 1997, 79, 532-532.	7.8	26
71	Theory of surface freezing of alkanes. Physical Review E, 1997, 55, 778-784.	2.1	41
72	Effect of Boundary Conditions on Fluctuations and Solidâ^'Liquid Transition in Confined Films. Langmuir, 1997, 13, 7146-7150.	3.5	10

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73	Confinement-induced freezing and the Lindemann criterion. Solid State Communications, 1997, 103, 361-364.	1.9	8
74	Fluctuations, Lindemann Criterion and Liquid-Solid Transition in Thin Films. Materials Research Society Symposia Proceedings, 1996, 463, 293.	0.1	0
75	Fluctuation-Stabilized Surface Freezing of Chain Molecules. Physical Review Letters, 1996, 76, 2527-2530.	7.8	85
76	Nematic-Smectic Transition of Semiflexible Chains. Physical Review Letters, 1996, 77, 4218-4221.	7.8	29
77	Coupling between Thermodynamics and Conformations in Wormlike Polymer Nematics. Macromolecules, 1995, 28, 8646-8656.	4.8	19
78	Thermomechanical force in superfluid HE II. Journal of Low Temperature Physics, 1994, 96, 61-71.	1.4	0
79	Deformation-Induced Anomalous Swelling of Topologically Disordered Gels. Macromolecules, 1994, 27, 7192-7196.	4.8	16
80	Chaos over Order: Mapping 3D Rotation of Triaxial Asteroids and Minor Planets. Monthly Notices of the Royal Astronomical Society, 0, , .	4.4	2