Gleb Oshanin

List of Publications by Year
in descending order

151 papers	4,478 citations	76322 40 h-index	149686 56 g-index
152 all docs	152 docs citations	152 times ranked	2070 citing authors

#	Article	IF	Citations
1	Droplet Spreading:â€‰ Partial Wetting Regime Revisited. Langmuir, 1999, 15, 2209-2216.	3.5	230
2	First-Passage Phenomena and Their Applications. , 2014, , .		186
3	Precursor films in wetting phenomena. Journal of Physics Condensed Matter, 2012, 24, 243102.	1.8	136
4	First passages in bounded domains: When is the mean first passage time meaningful?. Physical Review E, 2012, 86, 031143.	2.1	124
5	Survival of an evasive prey. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 13696-13701.	7.1	101
6	First passages for a search by a swarm of independent random searchers. Journal of Statistical Mechanics: Theory and Experiment, 2011, 2011, P06022.	2.3	100
7	Strong defocusing of molecular reaction times results from an interplay of geometry and reaction control. Communications Chemistry, 2018, 1, .	4.5	93
8	Geometry-Induced Superdiffusion in Driven Crowded Systems. Physical Review Letters, 2013, 111, 260601.	7.8	74
9	Confinement effects on diffusiophoretic self-propellers. Journal of Chemical Physics, 2009, 130, 194702.	3.0	73
10	Microscopic Model of Upward Creep of an Ultrathin Wetting Film. Physical Review Letters, 1996, 76, 86-89.	7.8	71
11	Kinetics of stochastically gated diffusion-limited reactions and geometry of random walk trajectories. Physical Review E, 2000, 61, 3388-3406.	2.1	66
12	Motion of a driven tracer particle in a one-dimensional symmetric lattice gas. Physical Review E, 1996, 54, 3165-3172.	2.1	65
13	Spectral Content of a Single Non-Brownian Trajectory. Physical Review X, 2019, 9, .	8.9	65
14	Active Transport in Dense Diffusive Single-File Systems. Physical Review Letters, 2013, 111, 038102.	7.8	63
15	Microscopic Theory for Negative Differential Mobility in Crowded Environments. Physical Review Letters, 2014, 113, 268002.	7.8	62
16	Diffusive escape through a narrow opening: new insights into a classic problem. Physical Chemistry Chemical Physics, 2017, 19, 2723-2739.	2.8	62
17	Power spectral density of a single Brownian trajectory: what one can and cannot learn from it. New Journal of Physics, 2018, 20, 023029.	2.9	62
18	Two-temperature Langevin dynamics in a parabolic potential. Physical Review E, 2013, 87, 062130.	2.1	59

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19	Models of chemical reactions with participation of polymers. Advances in Colloid and Interface Science, 1994, 49, 1-46.	14.7	58
20	Intermittent random walks for an optimal search strategy: one-dimensional case. Journal of Physics Condensed Matter, 2007, 19, 065142.	1.8	58
21	Trapping reactions with randomly moving traps: Exact asymptotic results for compact exploration. Physical Review E, 2002, 66, 060101.	2.1	56
22	Dynamics of Spreading of Liquid Microdroplets on Substrates of Increasing Surface Energies. Langmuir, 1998, 14, 5951-5958.	3.5	55
23	Pascal principle for diffusion-controlled trapping reactions. Physical Review E, 2003, 67, 045104.	2.1	54
24	Molecular Weight Dependence of Spreading Rates of Ultrathin Polymeric Films. Physical Review Letters, 1998, 80, 5377-5380.	7.8	52
25	Bias- and bath-mediated pairing of particles driven through a quiescent medium. Soft Matter, 2011, 7, 993-1000.	2.7	52
26	Survival probability of a particle in a sea of mobile traps: A tale of tails. Physical Review E, 2008, 78, 021105.	2.1	50
27	Towards a full quantitative description of single-molecule reaction kinetics in biological cells. Physical Chemistry Chemical Physics, 2018, 20, 16393-16401.	2.8	50
28	Full distribution of first exit times in the narrow escape problem. New Journal of Physics, 2019, 21, 122001.	2.9	50
29	Ultraslow vacancy-mediated tracer diffusion in two dimensions: The Einstein relation verified. Physical Review E, 2002, 66, 031101.	2.1	49
30	Efficient search by optimized intermittent random walks. Journal of Physics A: Mathematical and Theoretical, 2009, 42, 434008.	2.1	49
31	Diffusion and Subdiffusion of Interacting Particles on Comblike Structures. Physical Review Letters, 2015, 115, 220601.	7.8	48
32	Active colloids in the context of chemical kinetics. Journal of Physics A: Mathematical and Theoretical, 2017, 50, 134001.	2.1	47
33	Kinetic description of diffusion-limited reactions in random catalytic media. Journal of Chemical Physics, 1998, 108, 1140-1147.	3.0	46
34	Spectral content of fractional Brownian motion with stochastic reset. Journal of Physics A: Mathematical and Theoretical, 2018, 51, 435001.	2.1	46
35	Dynamics and conformational properties of polyampholytes in external electrical fields. Journal of Chemical Physics, 1995, 103, 5070-5074.	3.0	44
36	Optimal estimates of the diffusion coefficient of a single Brownian trajectory. Physical Review E, 2012, 85, 031136.	2.1	44

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37	Lattice theory of trapping reactions with mobile species. Physical Review E, 2004, 69, 046101.	2.1	42
38	Random pure states: Quantifying bipartite entanglement beyond the linear statistics. Physical Review E, 2016, 93, 052106.	2.1	42
39	Sample-size dependence of the ground-state energy in a one-dimensional localization problem. Physical Review E, 1996, 54, 231-242.	2.1	41
40	Charging dynamics of supercapacitors with narrow cylindrical nanopores. Nanotechnology, 2014, 25, 315401.	2.6	41
41	Steady flux in a continuous-space Sinai chain. Journal of Statistical Physics, 1993, 73, 379-388.	1.2	40
42	Spreading of a thin wetting film: Microscopic approach. Physical Review E, 1996, 54, 3832-3845.	2.1	40
43	Narrow-escape times for diffusion in microdomains with a particle-surface affinity: Mean-field results. Journal of Chemical Physics, 2010, 132, 235101.	3.0	40
44	Universal Long Ranged Correlations in Driven Binary Mixtures. Physical Review Letters, 2017, 118, 118002.	7.8	39
45	Influence of transport limitations on the kinetics of homopolymerization reactions. Journal of Chemical Physics, 1995, 102, 2977-2985.	3.0	38
46	Nonlinear response and emerging nonequilibrium microstructures for biased diffusion in confined crowded environments. Physical Review E, 2016, 93, 032128.	2.1	37
47	Single-trajectory spectral analysis of scaled Brownian motion. New Journal of Physics, 2019, 21, 073043.	2.9	36
48	Tracer diffusion in crowded narrow channels. Journal of Physics Condensed Matter, 2018, 30, 443001.	1.8	34
49	Helix or coil? Fate of a melting heteropolymer. Europhysics Letters, 2009, 85, 10008.	2.0	33
50	Stokes Formula and Density Perturbances for Driven Tracer Diffusion in an Adsorbed Monolayer. Physical Review Letters, 2000, 84, 511-514.	7.8	32
51	Universal spectral features of different classes of random-diffusivity processes. New Journal of Physics, 2020, 22, 063056.	2.9	32
52	From single-particle stochastic kinetics to macroscopic reaction rates: fastest first-passage time of N random walkers. New Journal of Physics, 2020, 22, 103004.	2.9	32
53	Anomalous Fluctuations of Currents in Sinai-Type Random Chains with Strongly Correlated Disorder. Physical Review Letters, 2013, 110, 100602.	7.8	31
54	Biased Diffusion in a One-Dimensional Adsorbed Monolayer. Journal of Statistical Physics, 1999, 97, 351-371.	1.2	29

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55	Dynamics and conformational properties of polyampholytes in external electrical fields: Influence of the charge distribution. Macromolecular Theory and Simulations, 1996, 5, 45-66.	1.4	27
56	Dewetting, partial wetting, and spreading of a two-dimensional monolayer on solid surface. Physical Review E, 1998, 58, R20-R23.	2.1	27
57	A biased intruder in a dense quiescent medium: looking beyond the forceâ€“velocity relation. Journal of Statistical Mechanics: Theory and Experiment, 2013, 2013, P05008.	2.3	27
58	Behavior of transport characteristics in several one-dimensional disordered systems. Chemical Physics, 1993, 177, 803-819.	1.9	26
59	Force-velocity relation and density profiles for biased diffusion in an adsorbed monolayer. Physical Review B, 2001, 63, .	3.2	26
60	Diffusion in periodic, correlated random forcing landscapes. Journal of Physics A: Mathematical and Theoretical, 2014, 47, 372001.	2.1	26
61	Nonequilibrium Fluctuations and Enhanced Diffusion of a Driven Particle in a Dense Environment. Physical Review Letters, 2018, 120, 200606.	7.8	26
62	Adsorption of reactive particles on a random catalytic chain: An exact solution. Physical Review E, 2003, 67, 016115.	2.1	25
63	Effects of the target aspect ratio and intrinsic reactivity onto diffusive search in bounded domains. New Journal of Physics, 2017, 19, 103025.	2.9	25
64	Generalized model for dynamic percolation. Physical Review E, 2000, 62, 3327-3339.	2.1	24
65	Kinetics of diffusion-limited catalytically activated reactions: An extension of the Wilemskiâ€“Fixman approach. Journal of Chemical Physics, 2005, 123, 194506.	3.0	24
66	Contact line stability of ridges and drops. Europhysics Letters, 2007, 80, 66002.	2.0	24
67	Temporal Correlations of the Running Maximum of a Brownian Trajectory. Physical Review Letters, 2016, 117, 080601.	7.8	24
68	Rouse chain dynamics in layered random flows. Physical Review E, 1994, 49, 4185-4191.	2.1	23
69	Symmetry breaking between statistically equivalent, independent channels in few-channel chaotic scattering. Physical Review E, 2011, 84, 035203.	2.1	22
70	Asymmetry relations and effective temperatures for biased Brownian gyrators. Physical Review E, 2018, 98, .	2.1	22
71	Single-species reactions on a random catalytic chain. Journal of Physics A, 2002, 35, L695-L705.	1.6	21
72	A single predator charging a herd of prey: effects of self volume and predatorâ€“prey decision-making. Journal of Physics A: Mathematical and Theoretical, 2016, 49, 225601.	2.1	21

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73	Smoluchowski approach for three-body reactions in one dimension. Physical Review E, 1995, 52, 5800-5805.	2.1	20
74	Microscopic model for spreading of a two-dimensional monolayer. Journal of Molecular Liquids, 1998, 76, 195-219.	4.9	19
75	Intermittent search strategies revisited: effect of the jump length and biased motion. Journal of Physics A: Mathematical and Theoretical, 2010, 43, 345001.	2.1	19
76	Sample-to-sample fluctuations of power spectrum of a random motion in a periodic Sinai model. Physical Review E, 2016, 94, 032131.	2.1	19
77	Dynamics and conformational properties of Rouse polymers in random layered flows. Macromolecular Theory and Simulations, 1995, 4, 87-109.	1.4	18
78	Dynamics of a driven probe molecule in a liquid monolayer. Europhysics Letters, 1997, 38, 527-532.	2.0	18
79	Two stock options at the races: Blackâ€“Scholes forecasts. Quantitative Finance, 2012, 12, 1325-1333.	1.7	18
80	Phase behaviour and structure of a superionic liquid in nonpolarized nanoconfinement. Journal of Physics Condensed Matter, 2016, 28, 464007.	1.8	18
81	Exactly Solvable Model of Reactions on a Random Catalytic Chain. Journal of Statistical Physics, 2003, 112, 541-586.	1.2	17
82	Molecular motor with a built-in escapement device. Europhysics Letters, 2004, 68, 26-32.	2.0	17
83	Velocity Anomaly of a Driven Tracer in a Confined Crowded Environment. Physical Review Letters, 2014, 113, 030603.	7.8	17
84	Influence of auto-organization and fluctuations on the kinetics of a monomer-monomer catalytic scheme. Physical Review E, 2001, 63, 021110.	2.1	16
85	Cooperative behavior of biased probes in crowded interacting systems. Soft Matter, 2017, 13, 7617-7624.	2.7	15
86	Comment on â€œPair and Triple Correlations in theA+Bâ†’BDiffusion-Controlled Reactionâ€• Physical Review Letters, 1995, 75, 585-585.	7.8	14
87	Kinetics of anchoring of polymer chains on substrates with chemically active sites. Physical Review E, 1998, 58, 6134-6144.	2.1	14
88	Exactly Solvable Model of Monomer-Monomer Reactions on a Two-Dimensional Random Catalytic Substrate. Physical Review Letters, 2004, 93, 020602.	7.8	14
89	Ballistic deposition patterns beneath a growing Kardar-Parisi-Zhang interface. Physical Review E, 2010, 82, 061107.	2.1	14
90	Proportionate vs disproportionate distribution of wealth of two individuals in a tempered Paretian ensemble. Physica A: Statistical Mechanics and Its Applications, 2011, 390, 4340-4346.	2.6	14

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91	Anomalous field-induced growth of fluctuations in dynamics of a biased intruder moving in a quiescent medium. Physical Review E, 2013, 87, 020103.	2.1	14
92	Fluctuations and correlations of a driven tracer in a hard-core lattice gas. Physical Review E, 2013, 87, .	2.1	14
93	Polymer Translocation Across a Corrugated Channel: Fickâ€“Jacobs Approximation Extended Beyond the Mean First-Passage Time. Polymers, 2019, 11, 251.	4.5	14
94	Directed random walk in adsorbed monolayer. Physica A: Statistical Mechanics and Its Applications, 1999, 272, 56-86.	2.6	13
95	Dissipation Processes at the Mesoscopic and Molecular Scale. The Case of Polymer Films. Langmuir, 1999, 15, 1522-1527.	3.5	13
96	Anchoring of Polymers by Traps Randomly Placed on a Line. Journal of Statistical Physics, 2000, 98, 281-303.	1.2	13
97	Optimal fits of diffusion constants from single-time data points of Brownian trajectories. Physical Review E, 2012, 86, 060101.	2.1	13
98	Distribution of the least-squares estimators of a single Brownian trajectory diffusion coefficient. Journal of Statistical Mechanics: Theory and Experiment, 2013, 2013, P04017.	2.3	13
99	Direct energy transfer in solutions of ideal polymer chains. Journal of Chemical Physics, 1995, 103, 9864-9875.	3.0	11
100	Polymer dynamics in time-dependent Matheronâ€“de Marsily flows: An exactly solvable model. Physical Review E, 2000, 63, 011801.	2.1	11
101	Catalytic reactions with bulk-mediated excursions: Mixing fails to restore chemical equilibrium. Physical Review E, 2004, 69, 036115.	2.1	11
102	Approach to asymptotically diffusive behavior for Brownian particles in periodic potentials: Extracting information from transients. Physical Review E, 2014, 90, 022112.	2.1	11
103	Distribution of the position of a driven tracer in a hardcore lattice gas. Journal of Statistical Mechanics: Theory and Experiment, 2015, 2015, P11016.	2.3	11
104	Joint distributions of partial and global maxima of a Brownian bridge. Journal of Physics A: Mathematical and Theoretical, 2016, 49, 335002.	2.1	11
105	Superionic Liquids in Conducting Nanoslits: Insights from Theory and Simulations. Journal of Physical Chemistry C, 2021, 125, 4968-4976.	3.1	11
106	Fluctuationâ€dominated A+Bâ†’0 kinetics under shortâ€ranged interparticle interactions. Journal of Chemical Physics, 1996, 105, 6304-6314.	3.0	10
107	On the Distribution of Surface Extrema in Several One- and Two-dimensional Random Landscapes. Journal of Statistical Physics, 2007, 126, 243-279.	1.2	10
108	Post-Tanner stages of droplet spreading: the energy balance approach revisited. Journal of Physics Condensed Matter, 2009, 21, 464131.	1.8	10

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109	Tracer diffusion on a crowded random Manhattan lattice. New Journal of Physics, 2020, 22, 033024.	2.9	10
110	Spectral density of individual trajectories of an active Brownian particle. New Journal of Physics, 2022, 24, 013018.	2.9	10
111	Atomic slide puzzle:â€ƒSelf-diffusion of an impure atom. Physical Review E, 2001, 64, 020103.	2.1	9
112	Current-mediated synchronization of a pair of beating non-identical flagella. New Journal of Physics, 2019, 21, 033036.	2.9	9
113	Superionic liquids in conducting nanoslits: A variety of phase transitions and ensuing charging behavior. Journal of Chemical Physics, 2019, 151, 184105.	3.0	9
114	Exact first-passage time distributions for three random diffusivity models. Journal of Physics A: Mathematical and Theoretical, 2021, 54, 04LT01.	2.1	9
115	Exactly solvable model of A + A â†' 0 reactions on a heterogeneous catalytic chain. Europhysics Letters, 2003, 62, 69-75.	2.0	8
116	Reversible diffusion-limited reactions: â€œChemical Equilibriumâ€•state and the Law of Mass Action revisited. Europhysics Letters, 2005, 69, 177-183.	2.0	8
117	Optimal least-squares estimators of the diffusion constant from a single Brownian trajectory. European Physical Journal: Special Topics, 2013, 216, 57-71.	2.6	8
118	Exact distributions of the maximum and range of random diffusivity processes. New Journal of Physics, 2021, 23, 023014.	2.9	8
119	Biased Tracer Diffusion in Hard-Core Lattice Gases: Some Notes on the Validity of the Einstein Relation. Nonlinear Phenomena and Complex Systems, 2004, , 33-74.	0.0	8
120	Correlation-induced non-monotonic behavior of reversible chemical reactions. Journal of Molecular Liquids, 1995, 63, 175-197.	4.9	7
121	Stochastic theory of diffusion-controlled reactions. Physica A: Statistical Mechanics and Its Applications, 2003, 327, 99-104.	2.6	7
122	Saltatory drift in a randomly driven two-wave potential. Journal of Physics Condensed Matter, 2005, 17, S3697-S3707.	1.8	7
123	Diffusive spreading and mixing of fluid monolayers. Journal of Physics Condensed Matter, 2005, 17, S4189-S4198.	1.8	7
124	Post-Tanner spreading of nematic droplets. Journal of Physics Condensed Matter, 2009, 21, 464134.	1.8	7
125	On the structure and phase transitions of power-law Poissonian ensembles. Journal of Physics A: Mathematical and Theoretical, 2012, 45, 405003.	2.1	7
126	Trajectory-to-Trajectory Fluctuations in First-Passage Phenomena in Bounded Domains. , 2014, , 203-225.		7

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127	Field-driven tracer diffusion through curved bottlenecks: fine structure of first passage events. Physical Chemistry Chemical Physics, 2020, 22, 18414-18422.	2.8	7
128	Bath-mediated interactions between driven tracers in dense single files. Physical Review Research, 2019, 1, .	3.6	7
129	Distribution of first-reaction times with target regions on boundaries of shell-like domains. New Journal of Physics, 2021, 23, 123049.	2.9	7
130	Passive advection of fractional Brownian motion by random layered flows. New Journal of Physics, 2020, 22, 053052.	2.9	6
131	Time-dependence of the effective temperatures of a two-dimensional Brownian gyrator with cold and hot components. Journal of Physics A: Mathematical and Theoretical, 2021, 54, 105002.	2.1	6
132	Smoluchowski rate for diffusion-controlled reactions of molecules with antenna. Journal of Physics A: Mathematical and Theoretical, 2017, 50, 264004.	2.1	5
133	Order-disorder transitions in lattice gases with annealed reactive constraints. Journal of Statistical Mechanics: Theory and Experiment, 2018, 2018, 043206.	2.3	5
134	<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi>N</mml:mi></mml:math> -tag probability law of the symmetric exclusion process. Physical Review E, 2018, 97, 062119.	2.1	5
135	Binary reactive adsorbate on a random catalytic substrate. Journal of Physics Condensed Matter, 2007, 19, 065126.	1.8	4
136	Finding passwords by random walks: how long does it take?. Journal of Physics A: Mathematical and Theoretical, 2009, 42, 434016.	2.1	4
137	On the non-equivalence of two standard random walks. Physica A: Statistical Mechanics and Its Applications, 2013, 392, 3909-3911.	2.6	4
138	Covariance of the running range of a Brownian trajectory. Journal of Physics A: Mathematical and Theoretical, 2019, 52, 345003.	2.1	4
139	Special issue on transport in narrow channels. Journal of Physics Condensed Matter, 2019, 31, 270201.	1.8	4
140	A molecular relay race: sequential first-passage events to the terminal reaction centre in a cascade of diffusion controlled processes. New Journal of Physics, 2021, 23, 093004.	2.9	4
141	Ionic liquids in conducting nanoslits: how important is the range of the screened electrostatic interactions?. Journal of Physics Condensed Matter, 2022, 34, 26LT01.	1.8	4
142	Dynamical disorder in diffusion-limited reactions. Physica A: Statistical Mechanics and Its Applications, 2002, 306, 169-179.	2.6	3
143	Microscopic model of charge carrier transfer in complex media. Chemical Physics, 2005, 319, 16-27.	1.9	3
144	Trapping of diffusing particles by periodic absorbing rings on a cylindrical tube. Journal of Chemical Physics, 2019, 150, 206101.	3.0	3

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145	Distribution of Schmidt-like eigenvalues for Gaussian ensembles of the random matrix theory. Journal of Physics A: Mathematical and Theoretical, 2013, 46, 115002.	2.1	2
146	Intrinsic friction of adsorbed monolayers. Journal of Physics Condensed Matter, 2001, 13, 4835-4851.	1.8	1
147	The shadow principle: An optimal survival strategy for a prey chased by random predators. Physica A: Statistical Mechanics and Its Applications, 2013, 392, 2837-2846.	2.6	1
148	Equilibrium properties of two-species reactive lattice gases on random catalytic chains. Physical Review E, 2020, 102, 032121.	2.1	1
149	Recognition capabilities of a Hopfield model with auxiliary hidden neurons. Physical Review E, 2021, 103, L060401.	2.1	1
150	Dynamics of wetting. Journal of Physics Condensed Matter, 2009, 21, 460302.	1.8	0
151	Binary lattice-gases of particles with soft exclusion: exact phase diagrams for tree-like lattices. Journal of Physics A: Mathematical and Theoretical, 2021, 54, 385003.	2.1	0