Dmitrii E Makarov

List of Publications by Year
in descending order

81	3,434	147801	155660
papers	citations	31 h-index	55 g-index

86	86	86	2653
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Molecular nanosprings in spider capture-silk threads. Nature Materials, 2003, 2, 278-283.	27.5	342
2	Quantifying internal friction in unfolded and intrinsically disordered proteins with single-molecule spectroscopy. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 17800-17806.	7.1	282
3	The topomer search model: A simple, quantitative theory of two-state protein folding kinetics. Protein Science, 2003, 12, 17-26.	7.6	176
4	How the folding rate constant of simple, single-domain proteins depends on the number of native contacts. Proceedings of the National Academy of Sciences of the United States of America, 2002, 99, 3535-3539.	7.1	137
5	Molecular Catch Bonds and the Anti-Hammond Effect in Polymer Mechanochemistry. Journal of the American Chemical Society, 2013, 135, 12722-12729.	13.7	118
6	Chemical reactions modulated by mechanical stress: Extended Bell theory. Journal of Chemical Physics, 2011, 135, 164103.	3.0	101
7	Integrated view of internal friction in unfolded proteins from single-molecule FRET, contact quenching, theory, and simulations. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, E1833-E1839.	7.1	94
8	Concerted Dihedral Rotations Give Rise to Internal Friction in Unfolded Proteins. Journal of the American Chemical Society, 2014, 136, 8708-8713.	13.7	93
9	A harmonic transition state approximation for the duration of reactive events in complex molecular rearrangements. Journal of Chemical Physics, 2010, 133, 034118.	3.0	88
10	Perspective: Mechanochemistry of biological and synthetic molecules. Journal of Chemical Physics, 2016, 144, 030901.	3.0	82
11	Theoretical studies of the mechanical unfolding of the muscle protein titin: Bridging the time-scale gap between simulation and experiment. Journal of Chemical Physics, 2003, 119, 9260-9268.	3.0	81
12	Transition path times of coupled folding and binding reveal the formation of an encounter complex. Nature Communications, 2018, 9, 4708.	12.8	79
13	Computer simulations of the translocation and unfolding of a protein pulled mechanically through a pore. Journal of Chemical Physics, 2005, 123, 124903.	3.0	70
14	Site-specific Dimensions Across a Highly Denatured Protein; A Single Molecule Study. Journal of Molecular Biology, 2005, 352, 672-682.	4.2	68
15	Topography of the free-energy landscape probed via mechanical unfolding of proteins. Journal of Chemical Physics, 2005, 122, 234915.	3.0	67
16	Computer Simulations and Theory of Protein Translocation. Accounts of Chemical Research, 2009, 42, 281-289.	15.6	60
17	Exploring the role of internal friction in the dynamics of unfolded proteins using simple polymer models. Journal of Chemical Physics, 2013, 138, 074112.	3.0	57
18	A Mechanistic Study of Electron Transfer from the Distal Termini of Electrode-Bound, Single-Stranded DNAs. Journal of the American Chemical Society, 2010, 132, 16120-16126.	13.7	56

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19	Transition path times reveal memory effects and anomalous diffusion in the dynamics of protein folding. Journal of Chemical Physics, 2017, 147, 152707.	3.0	56
20	Entropic and Electrostatic Effects on the Folding Free Energy of a Surface-Attached Biomolecule: An Experimental and Theoretical Study. Journal of the American Chemical Society, 2012, 134, 2120-2126.	13.7	47
21	Quantum transition-state theory below the crossover temperature. Physical Review E, 1995, 52, 178-188.	2.1	45
22	Nanosecond Dynamics of Single Polypeptide Molecules Revealed by Photoemission Statistics of Fluorescence Resonance Energy Transfer:Â A Theoretical Study. Journal of Physical Chemistry B, 2003, 107, 5617-5622.	2.6	42
23	Exploring the topography of the stress-modified energy landscapes of mechanosensitive molecules. Journal of Chemical Physics, 2014, 140, 104114.	3.0	41
24	Reaction Coordinates and Pathways of Mechanochemical Transformations. Journal of Physical Chemistry B, 2016, 120, 1537-1545.	2.6	41
25	Extracting intrinsic dynamic parameters of biomolecular folding from singleâ€molecule force spectroscopy experiments. Protein Science, 2016, 25, 123-134.	7.6	40
26	Generalized Langevin Equation as a Model for Barrier Crossing Dynamics in Biomolecular Folding. Journal of Physical Chemistry B, 2019, 123, 802-810.	2.6	40
27	Influence of local and residual structures on the scaling behavior and dimensions of unfolded proteins. Biopolymers, 2007, 86, 321-328.	2.4	37
28	Interplay of non-Markov and internal friction effects in the barrier crossing kinetics of biopolymers: Insights from an analytically solvable model. Journal of Chemical Physics, 2013, 138, 014102.	3.0	37
29	The Length and Viscosity Dependence of End-to-End Collision Rates in Single-Stranded DNA. Biophysical Journal, 2009, 97, 205-210.	0.5	34
30	Shapes of dominant transition paths from single-molecule force spectroscopy. Journal of Chemical Physics, 2015, 143, 194103.	3.0	34
31	Broad distributions of transition-path times are fingerprints of multidimensionality of the underlying free energy landscapes. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 27116-27123.	7.1	33
32	The rate constant of polymer reversal inside a pore. Journal of Chemical Physics, 2008, 128, 114903.	3.0	32
33	Theoretical and computational validation of the Kuhn barrier friction mechanism in unfolded proteins. Scientific Reports, 2017, 7, 269.	3.3	31
34	Transition Path Times in Non-Markovian Activated Rate Processes. Journal of Physical Chemistry B, 2018, 122, 11400-11413.	2.6	31
35	Rate of intramolecular contact formation in peptides: The loop length dependence. Journal of Chemical Physics, 2002, 117, 4591-4593.	3.0	29
36	A Theoretical Model for the Mechanical Unfolding of Repeat Proteins. Biophysical Journal, 2009, 96, 2160-2167.	0.5	27

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37	Spatiotemporal correlations in denatured proteins: The dependence of fluorescence resonance energy transfer (FRET)-derived protein reconfiguration times on the location of the FRET probes. Journal of Chemical Physics, 2010, 132, 035104.	3.0	27
38	Communication: Does force spectroscopy of biomolecules probe their intrinsic dynamic properties?. Journal of Chemical Physics, 2014, 141, 241103.	3.0	26
39	Reconciling transition path time and rate measurements in reactions with large entropic barriers. Journal of Chemical Physics, 2017, 146, 071101.	3.0	26
40	Measuring distances within unfolded biopolymers using fluorescence resonance energy transfer: The effect of polymer chain dynamics on the observed fluorescence resonance energy transfer efficiency. Journal of Chemical Physics, 2009, 131, 085105.	3.0	25
41	The Rate of Intramolecular Loop Formation in DNA and Polypeptides: The Absence of the Diffusion-Controlled Limit and Fractional Power-Law Viscosity Dependence. Journal of Physical Chemistry B, 2009, 113, 14026-14034.	2.6	25
42	Failure of one-dimensional Smoluchowski diffusion models to describe the duration of conformational rearrangements in floppy, diffusive molecular systems: A case study of polymer cyclization. Journal of Chemical Physics, 2011, 134, 085104.	3.0	25
43	Chain Dynamics Limit Electron Transfer from Electrode-Bound, Single-Stranded Oligonucleotides. Journal of Physical Chemistry C, 2018, 122, 21441-21448.	3.1	25
44	How long does it take to equilibrate the unfolded state of a protein?. Protein Science, 2013, 22, 1459-1465.	7.6	24
45	Single-Molecule Test for Markovianity of the Dynamics along a Reaction Coordinate. Journal of Physical Chemistry Letters, 2018, 9, 2190-2195.	4.6	23
46	Universality in the Timescales of Internal Loop Formation in Unfolded Proteins and Single-Stranded Oligonucleotides. Biophysical Journal, 2010, 99, 3959-3968.	0.5	22
47	Mechanochemical Kinetics in Elastomeric Polymer Networks: Heterogeneity of Local Forces Results in Nonexponential Kinetics. Journal of Physical Chemistry B, 2017, 121, 2359-2365.	2.6	22
48	Communication: Transition-path velocity as an experimental measure of barrier crossing dynamics. Journal of Chemical Physics, 2018, 148, 201102.	3.0	22
49	Sequence and Temperature Dependence of the End-to-End Collision Dynamics of Single-Stranded DNA. Biophysical Journal, 2013, 104, 2485-2492.	0.5	20
50	Finding mechanochemical pathways and barriers without transition state search. Journal of Chemical Physics, 2015, 142, 174106.	3.0	20
51	On the forward/backward symmetry of transition path time distributions in nonequilibrium systems. Journal of Chemical Physics, 2019, 151, 065102.	3.0	20
52	Transition Path Dynamics of a Dielectric Particle in a Bistable Optical Trap. Physical Review Letters, 2020, 125, 146001.	7.8	20
53	Communication: Coordinate-dependent diffusivity from single molecule trajectories. Journal of Chemical Physics, 2017, 147, 201102.	3.0	18
54	Barrier Crossing Dynamics from Single-Molecule Measurements. Journal of Physical Chemistry B, 2021, 125, 2467-2476.	2.6	18

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55	Dynamics of Disordered Proteins under Confinement: Memory Effects and Internal Friction. Journal of Physical Chemistry B, 2018, 122, 9049-9060.	2.6	17
56	Configurational entropy and mechanical properties of cross-linked polymer chains: Implications for protein and RNA folding. Physical Review E, 2002, 66, 011908.	2.1	15
57	Computation of transit times using the milestoning method with applications to polymer translocation. Journal of Chemical Physics, 2013, 139, 064101.	3.0	15
58	Unraveling Individual Molecules by Mechanical Forces: Theory Meets Experiment. Biophysical Journal, 2007, 92, 4135-4136.	0.5	14
59	End-to-Surface Reaction Dynamics of a Single Surface-Attached DNA or Polypeptide. Journal of Physical Chemistry B, 2010, 114, 3321-3329.	2.6	12
60	Effect of Mutation on an Aggregation-Prone Segment of p53: From Monomer to Dimer to Multimer. Journal of Physical Chemistry B, 2016, 120, 11665-11673.	2.6	12
61	From Nonequilibrium Single-Molecule Trajectories to Underlying Dynamics. Journal of Physical Chemistry Letters, 2020, 11, 1682-1688.	4.6	12
62	On the calculation of internal forces in mechanically stressed polyatomic molecules. Journal of Chemical Physics, 2014, 141, 134115.	3.0	10
63	Kinetics of Loop Closure in Disordered Proteins: Theory vs Simulations vs Experiments. Journal of Physical Chemistry B, 2020, 124, 3482-3493.	2.6	10
64	Mechanical unfolding of spectrin reveals a super-exponential dependence of unfolding rate on force. Scientific Reports, 2019, 9, 11101.	3.3	9
65	Value of Temporal Information When Analyzing Reaction Coordinates. Journal of Chemical Theory and Computation, 2020, 16, 6077-6090.	5.3	9
66	The effect of a mechanical force on quantum reaction rate: Quantum Bell formula. Journal of Chemical Physics, 2011, 135, 194112.	3.0	8
67	Transition path dynamics in the binding of intrinsically disordered proteins: A simulation study. Journal of Chemical Physics, 2019, 151, 235101.	3.0	8
68	Computational and Theoretical Insights into Protein and Peptide Translocation. Protein and Peptide Letters, 2014, 21, 217-226.	0.9	8
69	On distributions of barrier crossing times as observed in single-molecule studies of biomolecules. Biophysical Reports, 2021, 1, 100029.	1.2	8
70	Interplay of Affinity and Surface Tethering in Protein Recognition. Journal of Physical Chemistry Letters, 2022, 13, 4021-4028.	4.6	8
71	Transient probability currents provide upper and lower bounds on non-equilibrium steady-state currents in the Smoluchowski picture. Journal of Chemical Physics, 2019, 151, 174108.	3.0	6
72	Individual Proteins Under Mechanical Stress: Lessons from Theory and Computer Simulations. , 2012, , 235-268.		6

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73	Preface: Special Topic on Single-Molecule Biophysics. Journal of Chemical Physics, 2018, 148, 123001.	3.0	5
74	Does Electric Friction Matter in Living Cells?. Journal of Physical Chemistry B, 2021, 125, 6144-6153.	2.6	5
75	The resistance curve for subcritical cracks near the threshold. International Journal of Fracture, 2011, 167, 147-155.	2.2	4
76	Life in silico: Are we close yet?. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.1	3
77	Observation of single molecule transport at surfaces via scanning microscopies: Monte Carlo wave function study of a model problem. Physical Review E, 2002, 65, 051601.	2.1	2
78	Localized potential well vs binding site: Mapping solute dynamics in a membrane channel onto one-dimensional description. Journal of Chemical Physics, 2021, 154, 111101.	3.0	2
79	Comment on â€œAsymptotic Strength Limit of Hydrogen-Bond Assemblies in Proteins at Vanishing Pulling Ratesâ€. Physical Review Letters, 2009, 102, 129801; discussion 129802.	7.8	1
80	Detailed balance for diffusion in a potential with trapping and forwardâ€“backward symmetry of trapping time distributions. Journal of Chemical Physics, 2020, 152, 226101.	3.0	1
81	Reply to â€œComment on â€˜Reaction Coordinates and Pathways of Mechanochemical Transformationsâ€™â€. Journal of Physical Chemistry B, 2016, 120, 2646-2647.	2.6	0