

Frank H Stillinger

List of Publications by Year in descending order

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82
papers

12,742
citations

101543

36
h-index

62596

80
g-index

82
all docs

82
docs citations

82
times ranked

8391
citing authors

#	ARTICLE	IF	CITATIONS
1	Supercooled liquids and the glass transition. <i>Nature</i> , 2001, 410, 259-267.	27.8	3,877
2	Hidden structure in liquids. <i>Physical Review A</i> , 1982, 25, 978-989.	2.5	1,234
3	Improving the Density of Jammed Disordered Packings Using Ellipsoids. <i>Science</i> , 2004, 303, 990-993.	12.6	1,069
4	Geometric properties of random disk packings. <i>Journal of Statistical Physics</i> , 1990, 60, 561-583.	1.2	649
5	Dynamics of structural transitions in liquids. <i>Physical Review A</i> , 1983, 28, 2408-2416.	2.5	546
6	Local density fluctuations, hyperuniformity, and order metrics. <i>Physical Review E</i> , 2003, 68, 041113.	2.1	492
7	Packing hyperspheres in high-dimensional Euclidean spaces. <i>Physical Review E</i> , 2006, 74, 041127.	2.1	314
8	Pair correlation function characteristics of nearly jammed disordered and ordered hard-sphere packings. <i>Physical Review E</i> , 2005, 71, 011105.	2.1	291
9	Phase transitions in the Gaussian core system. <i>Journal of Chemical Physics</i> , 1976, 65, 3968-3974.	3.0	288
10	Neighbor list collision-driven molecular dynamics simulation for nonspherical hard particles. I. Algorithmic details. <i>Journal of Computational Physics</i> , 2005, 202, 737-764.	3.8	279
11	Unusually Dense Crystal Packings of Ellipsoids. <i>Physical Review Letters</i> , 2004, 92, 255506.	7.8	270
12	Exponential multiplicity of inherent structures. <i>Physical Review E</i> , 1999, 59, 48-51.	2.1	248
13	Underconstrained jammed packings of nonspherical hard particles: Ellipses and ellipsoids. <i>Physical Review E</i> , 2007, 75, 051304.	2.1	219
14	Glass Transition Thermodynamics and Kinetics. <i>Annual Review of Condensed Matter Physics</i> , 2013, 4, 263-285.	14.5	217
15	Unexpected Density Fluctuations in Jammed Disordered Sphere Packings. <i>Physical Review Letters</i> , 2005, 95, 090604.	7.8	209
16	Jamming in hard sphere and disk packings. <i>Journal of Applied Physics</i> , 2004, 95, 989-999.	2.5	186
17	Disks vs. spheres: Contrasting properties of random packings. <i>Journal of Statistical Physics</i> , 1991, 64, 501-524.	1.2	179
18	Diversity of order and densities in jammed hard-particle packings. <i>Physical Review E</i> , 2002, 66, 041109.	2.1	165

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19	Neighbor list collision-driven molecular dynamics simulation for nonspherical hard particles.. Journal of Computational Physics, 2005, 202, 765-793.	3.8	143
20	Computer generation of dense polydisperse sphere packings. Journal of Chemical Physics, 2002, 117, 8212-8218.	3.0	135
21	Tetratic order in the phase behavior of a hard-rectangle system. Physical Review B, 2006, 73, .	3.2	132
22	Classical disordered ground states: Super-ideal gases and stealth and equi-luminous materials. Journal of Applied Physics, 2008, 104, .	2.5	131
23	Phase behavior of colloidal superballs: Shape interpolation from spheres to cubes. Physical Review E, 2010, 81, 061105.	2.1	107
24	A linear programming algorithm to test for jamming in hard-sphere packings. Journal of Computational Physics, 2004, 197, 139-166.	3.8	102
25	Do Binary Hard Disks Exhibit an Ideal Glass Transition?. Physical Review Letters, 2006, 96, 225502.	7.8	89
26	Inherent structure theory of liquids in the hard-sphere limit. Journal of Chemical Physics, 1985, 83, 4767-4775.	3.0	83
27	Statistical mechanical models with effective potentials: Definitions, applications, and thermodynamic consequences. Journal of Chemical Physics, 2002, 117, 288-296.	3.0	78
28	Existence of isostatic, maximally random jammed monodisperse hard-disk packings. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 18436-18441.	7.1	68
29	Capillary waves and the inherent density profile for the liquid-vapor interface. Journal of Chemical Physics, 1982, 76, 1087-1091.	3.0	49
30	Phase transitions, Kauzmann curves, and inverse melting. Biophysical Chemistry, 2003, 105, 211-220.	2.8	47
31	Nonuniversality of density and disorder in jammed sphere packings. Journal of Applied Physics, 2011, 109, .	2.5	46
32	Aspects of correlation function realizability. Journal of Chemical Physics, 2003, 119, 7065-7074.	3.0	43
33	Comment on "Jamming at zero temperature and zero applied stress: The epitome of disorder". Physical Review E, 2004, 70, 043301; discussion 043302.	2.1	43
34	Detailed characterization of rattlers in exactly isostatic, strictly jammed sphere packings. Physical Review E, 2013, 88, 062208.	2.1	42
35	Combined molecular dynamics and neural network method for predicting protein antifreeze activity. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 13252-13257.	7.1	40
36	Geometrical ambiguity of pair statistics. II. Heterogeneous media. Physical Review E, 2010, 82, 011106.	2.1	39

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37	A statistical mechanical model for inverse melting. <i>Journal of Chemical Physics</i> , 2003, 119, 4582-4591.	3.0	36
38	Thermodynamic mechanism for solution phase chiral amplification via a lattice model. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2009, 106, 15131-15135.	7.1	28
39	A Comparison of the Predictive Capabilities of the Embedded-Atom Method and Modified Embedded-Atom Method Potentials for Lithium. <i>Journal of Physical Chemistry B</i> , 2015, 119, 8960-8968.	2.6	27
40	Thermodynamic Anomalies in Stretched Water. <i>Langmuir</i> , 2017, 33, 11771-11778.	3.5	27
41	Liquid Li structure and dynamics: A comparison between OFDFT and second nearest-neighbor embedded-atom method. <i>AICHE Journal</i> , 2015, 61, 2841-2853.	3.6	24
42	Inherent structure formalism for quantum systems. <i>Journal of Chemical Physics</i> , 1988, 89, 4180-4184.	3.0	22
43	Structural and dynamic properties of liquid tin from a new modified embedded-atom method force field. <i>Physical Review B</i> , 2017, 95, .	3.2	22
44	Inherent-Structure View of Self-Diffusion in Liquids. <i>Journal of Physical Chemistry B</i> , 2004, 108, 6772-6777.	2.6	21
45	Concluding remarks for FD 146: Answers and questions. <i>Faraday Discussions</i> , 2010, 146, 395.	3.2	21
46	Alternative View of Self-Diffusion and Shear Viscosity. <i>Journal of Physical Chemistry B</i> , 2005, 109, 6604-6609.	2.6	20
47	Molecular model for chirality phenomena. <i>Journal of Chemical Physics</i> , 2016, 145, 154503.	3.0	20
48	Chiral symmetry breaking in a microscopic model with asymmetric autocatalysis and inhibition. <i>Journal of Chemical Physics</i> , 2010, 133, 224502.	3.0	19
49	Sensitivity of pair statistics on pair potentials in many-body systems. <i>Journal of Chemical Physics</i> , 2020, 153, 124106.	3.0	19
50	Pair Correlation Function Realizability: A Lattice Model Implications. <i>Journal of Physical Chemistry B</i> , 2004, 108, 19589-19594.	2.6	18
51	Scaled particle theory for hard sphere pairs. I. Mathematical structure. <i>Journal of Chemical Physics</i> , 2006, 125, 204504.	3.0	17
52	Rational design of stealthy hyperuniform two-phase media with tunable order. <i>Physical Review E</i> , 2018, 97, 023311.	2.1	17
53	Novel ground-state crystals with controlled vacancy concentrations: From kagomé to honeycomb to stripes. <i>Soft Matter</i> , 2011, 7, 6194.	2.7	15
54	Thermodynamics of DNA Hybridization from Atomistic Simulations. <i>Journal of Physical Chemistry B</i> , 2021, 125, 771-779.	2.6	15

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55	Realizability issues for iso-g(2)processes. <i>Molecular Physics</i> , 2005, 103, 2943-2949.	1.7	14
56	Interactions leading to disordered ground states and unusual low-temperature behavior. <i>Physical Review E</i> , 2009, 80, 031105.	2.1	14
57	Designer spin systems via inverse statistical mechanics. <i>Physical Review B</i> , 2013, 88, .	3.2	14
58	Static structural signatures of nearly jammed disordered and ordered hard-sphere packings: Direct correlation function. <i>Physical Review E</i> , 2016, 94, 032902.	2.1	14
59	Low temperature protein refolding suggested by molecular simulation. <i>Journal of Chemical Physics</i> , 2019, 151, 185101.	3.0	13
60	Spherical codes, maximal local packing density, and the golden ratio. <i>Journal of Mathematical Physics</i> , 2010, 51, .	1.1	11
61	Creation and Persistence of Chiral Asymmetry in a Microscopically Reversible Molecular Model. <i>Journal of Physical Chemistry B</i> , 2013, 117, 602-614.	2.6	10
62	Computational Investigation of the Effect of Backbone Chiral Inversions on Polypeptide Structure. <i>Journal of Physical Chemistry B</i> , 2018, 122, 6357-6363.	2.6	10
63	Structural degeneracy in pair distance distributions. <i>Journal of Chemical Physics</i> , 2019, 150, 204125.	3.0	10
64	Effect of heterochiral inversions on the structure of a β -hairpin peptide. <i>Proteins: Structure, Function and Bioinformatics</i> , 2019, 87, 569-578.	2.6	9
65	Interconversion-controlled liquid-liquid phase separation in a molecular chiral model. <i>Journal of Chemical Physics</i> , 2021, 155, 204502.	3.0	9
66	Characterization of void space, large-scale structure, and transport properties of maximally random jammed packings of superballs. <i>Physical Review Materials</i> , 2022, 6, .	2.4	9
67	Exotic Ground States of Directional Pair Potentials via Collective-Density Variables. <i>Journal of Statistical Physics</i> , 2013, 150, 414-431.	1.2	8
68	Effect of configuration-dependent multi-body forces on interconversion kinetics of a chiral tetramer model. <i>Journal of Chemical Physics</i> , 2021, 155, 084105.	3.0	8
69	Designer spin systems via inverse statistical mechanics. II. Ground-state enumeration and classification. <i>Physical Review B</i> , 2013, 88, .	3.2	7
70	A cavitation transition in the energy landscape of simple cohesive liquids and glasses. <i>Journal of Chemical Physics</i> , 2016, 145, 211905.	3.0	7
71	An inherent structure view of liquid-vapor interfaces. <i>Journal of Chemical Physics</i> , 2008, 128, 204705.	3.0	6
72	Cavitation transition in the energy landscape: Distinct tensile yielding behavior in strongly and weakly attractive systems. <i>Journal of Chemical Physics</i> , 2018, 148, 114501.	3.0	6

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73	The Handedness of DNA Assembly around Carbon Nanotubes Is Determined by the Chirality of DNA. <i>Journal of Physical Chemistry B</i> , 2020, 124, 5362-5369.	2.6	6
74	Computational investigation of retroisomer equilibrium structures: Intrinsically disordered, foldable, and cyclic peptides. <i>FEBS Letters</i> , 2020, 594, 104-113.	2.8	4
75	Genetic Algorithm Approach for the Optimization of Protein Antifreeze Activity Using Molecular Simulations. <i>Journal of Chemical Theory and Computation</i> , 2020, 16, 7866-7873.	5.3	4
76	Critical Point Confluence Phenomenon. <i>Journal of Physical Chemistry B</i> , 2018, 122, 3441-3446.	2.6	3
77	Kinetic Frustration Effects on Dense Two-Dimensional Packings of Convex Particles and Their Structural Characteristics. <i>Journal of Physical Chemistry B</i> , 2021, 125, 2450-2464.	2.6	3
78	Effects of Trehalose on Lipid Membranes under Rapid Cooling using All-Atom and Coarse-Grained Molecular Simulations. <i>Journal of Physical Chemistry B</i> , 2021, 125, 5346-5357.	2.6	3
79	Duality relations for elastic constants of the classical Gaussian core model. <i>Physical Review E</i> , 2002, 66, 066125.	2.1	2
80	Jammed hard-sphere hcp crystals permeated with trivacancy tunnels. <i>Journal of Applied Physics</i> , 2019, 126, 194901.	2.5	1
81	Perspective: An historical perspective. <i>International Journal of Quantum Chemistry</i> , 2006, 106, 3-3.	2.0	0
82	Modeling Collective Escape Processes for Nearly Jammed Systems. <i>Journal of Physical Chemistry B</i> , 2011, 115, 14184-14189.	2.6	0