Salvatore Torquato

List of Publications by Year
in descending order

436 papers	36,275 citations	1799 103 h-index	4548 171 g-index
442 all docs	442 docs citations	442 times ranked	15178 citing authors

#	Article	IF	Citations
1	Random Heterogeneous Materials. Interdisciplinary Applied Mathematics, 2002, , .	0.3	1,853
2	Is Random Close Packing of Spheres Well Defined?. Physical Review Letters, 2000, 84, 2064-2067.	7.8	1,173
3	Improving the Density of Jammed Disordered Packings Using Ellipsoids. Science, 2004, 303, 990-993.	12.6	1,069
4	Design of materials with extreme thermal expansion using a three-phase topology optimization method. Journal of the Mechanics and Physics of Solids, 1997, 45, 1037-1067.	4.8	808
5	Reconstructing random media. Physical Review E, 1998, 57, 495-506.	2.1	693
6	Jammed hard-particle packings: From Kepler to Bernal and beyond. Reviews of Modern Physics, 2010, 82, 2633-2672.	45.6	606
7	Random Heterogeneous Media: Microstructure and Improved Bounds on Effective Properties. Applied Mechanics Reviews, 1991, 44, 37-76.	10.1	585
8	Local density fluctuations, hyperuniformity, and order metrics. Physical Review E, 2003, 68, 041113.	2.1	492
9	Reconstructing random media. II. Three-dimensional media from two-dimensional cuts. Physical Review E, 1998, 58, 224-233.	2.1	446
10	Simulated Brain Tumor Growth Dynamics Using a Three-Dimensional Cellular Automaton. Journal of Theoretical Biology, 2000, 203, 367-382.	1.7	379
11	Dense packings of the Platonic and Archimedean solids. Nature, 2009, 460, 876-879.	27.8	364
12	Designer disordered materials with large, complete photonic band gaps. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 20658-20663.	7.1	363
13	Random Heterogeneous Materials: Microstructure and Macroscopic Properties. Applied Mechanics Reviews, 2002, 55, B62-B63.	10.1	357
14	Composites with extremal thermal expansion coefficients. Applied Physics Letters, 1996, 69, 3203-3205.	3.3	317
15	Packing hyperspheres in high-dimensional Euclidean spaces. Physical Review E, 2006, 74, 041127.	2.1	314
16	Pair correlation function characteristics of nearly jammed disordered and ordered hard-sphere packings. Physical Review E, 2005, 71, 011105.	2.1	291
17	Modeling heterogeneous materials via two-point correlation functions: Basic principles. Physical Review E, 2007, 76, 031110.	2.1	289
18	Neighbor list collision-driven molecular dynamics simulation for nonspherical hard particles. I. Algorithmic details. Journal of Computational Physics, 2005, 202, 737-764.	3.8	279

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19	Unusually Dense Crystal Packings of Ellipsoids. Physical Review Letters, 2004, 92, 255506.	7.8	270
20	Microstructure of twoâ€phase random media. I. The nâ€point probability functions. Journal of Chemical Physics, 1982, 77, 2071-2077.	3.0	260
21	Hyperuniform states of matter. Physics Reports, 2018, 745, 1-95.	25.6	259
22	Towards a quantification of disorder in materials: Distinguishing equilibrium and glassy sphere packings. Physical Review E, 2000, 62, 993-1001.	2.1	258
23	Reconstruction of the Structure of Dispersions. Journal of Colloid and Interface Science, 1997, 186, 467-476.	9.4	254
24	Computer simulations of dense hardâ€sphere systems. Journal of Chemical Physics, 1996, 105, 9258-9265.	3.0	251
25	A superior descriptor of random textures and its predictive capacity. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 17634-17639.	7.1	251
26	Nearest-neighbor statistics for packings of hard spheres and disks. Physical Review E, 1995, 51, 3170-3182.	2.1	249
27	Nearest-neighbor distribution functions in many-body systems. Physical Review A, 1990, 41, 2059-2075.	2.5	248
28	Effective electrical conductivity of twoâ€phase disordered composite media. Journal of Applied Physics, 1985, 58, 3790-3797.	2.5	241
29	Multifunctional Composites: Optimizing Microstructures for Simultaneous Transport of Heat and Electricity. Physical Review Letters, 2002, 89, 266601.	7.8	223
30	Precise determination of the critical threshold and exponents in a three-dimensional continuum percolation model. Journal of Physics A, 1997, 30, L585-L592.	1.6	222
31	Modeling heterogeneous materials via two-point correlation functions. II. Algorithmic details and applications. Physical Review E, 2008, 77, 031135.	2.1	222
32	Underconstrained jammed packings of nonspherical hard particles: Ellipses and ellipsoids. Physical Review E, 2007, 75, 051304.	2.1	219
33	On the design of 1â€“3 piezocomposites using topology optimization. Journal of Materials Research, 1998, 13, 1038-1048.	2.6	217
34	Lineal-path function for random heterogeneous materials. Physical Review A, 1992, 45, 922-929.	2.5	215
35	Nearest-surface distribution functions for polydispersed particle systems. Physical Review A, 1992, 45, 5530-5544.	2.5	214
36	Statistical Description of Microstructures. Annual Review of Materials Research, 2002, 32, 77-111.	9.3	210

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37	Experiments on Random Packings of Ellipsoids. Physical Review Letters, 2005, 94, 198001.	7.8	210
38	Unexpected Density Fluctuations in Jammed Disordered Sphere Packings. Physical Review Letters, 2005, 95, 090604.	7.8	209
39	Effect of the Interface on the Properties of Composite Media. Physical Review Letters, 1995, 75, 4067-4070.	7.8	206
40	Rigorous link between fluid permeability, electrical conductivity, and relaxation times for transport in porous media. Physics of Fluids A, Fluid Dynamics, 1991, 3, 2529-2540.	1.6	194
41	Pattern of self-organization in tumour systems: complex growth dynamics in a novel brain tumour spheroid model. Cell Proliferation, 2001, 34, 115-134.	5.3	187
42	Stochastic reconstruction of sandstones. Physical Review E, 2000, 62, 893-899.	2.1	186
43	Jamming in hard sphere and disk packings. Journal of Applied Physics, 2004, 95, 989-999.	2.5	186
44	Chord-length distribution function for two-phase random media. Physical Review E, 1993, 47, 2950-2953.	2.1	184
45	Metastability and Crystallization in Hard-Sphere Systems. Physical Review Letters, 1996, 77, 4198-4201.	7.8	178
46	Simulated properties of KagomÃ© and tetragonal truss core panels. International Journal of Solids and Structures, 2003, 40, 6989-6998.	2.7	178
47	Efficient measurement of the percolation threshold for fully penetrable discs. Journal of Physics A, 2000, 33, L399-L407.	1.6	177
48	Isotropic band gaps and freeform waveguides observed in hyperuniform disordered photonic solids. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 15886-15891.	7.1	174
49	Universal scaling of fluid permeability for sphere packings. Physical Review E, 1994, 50, 403-408.	2.1	172
50	Effective mechanical and transport properties of cellular solids. International Journal of Mechanical Sciences, 1998, 40, 71-82.	6.7	171
51	Effective stiffness tensor of composite mediaâ€"I. Exact series expansions. Journal of the Mechanics and Physics of Solids, 1997, 45, 1421-1448.	4.8	169
52	Inverse optimization techniques for targeted self-assembly. Soft Matter, 2009, 5, 1157.	2.7	166
53	Diversity of order and densities in jammed hard-particle packings. Physical Review E, 2002, 66, 041109.	2.1	165
54	Flow in random porous media: mathematical formulation, variational principles, and rigorous bounds. Journal of Fluid Mechanics, 1989, 206, 25-46.	3.4	164

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55	Effective stiffness tensor of composite media : II. Applications to isotropic dispersions. Journal of the Mechanics and Physics of Solids, 1998, 46, 1411-1440.	4.8	159
56	Modulusâ€“density scaling behaviour and framework architecture of nanoporous self-assembled silicas. Nature Materials, 2007, 6, 418-423.	27.5	159
57	A single-bond approach to orientation-dependent interactions and its implications for liquid water. Journal of Chemical Physics, 1999, 111, 2647-2656.	3.0	157
58	Avian photoreceptor patterns represent a disordered hyperuniform solution to a multiscale packing problem. Physical Review E, 2014, 89, 022721.	2.1	154
59	Design of smart composite materials using topology optimization. Smart Materials and Structures, 1999, 8, 365-379.	3.5	153
60	Cross-property relations and permeability estimation in model porous media. Physical Review E, 1993, 48, 4584-4591.	2.1	150
61	Multiplicity of Generation, Selection, and Classification Procedures for Jammed Hard-Particle Packingsâ€. Journal of Physical Chemistry B, 2001, 105, 11849-11853.	2.6	150
62	Structural precursor to freezing in the hard-disk and hard-sphere systems. Physical Review E, 1998, 58, 3083-3088.	2.1	147
63	Hyperuniformity in point patterns and two-phase random heterogeneous media. Journal of Statistical Mechanics: Theory and Experiment, 2009, 2009, P12015.	2.3	147
64	Twoâ€point cluster function for continuum percolation. Journal of Chemical Physics, 1988, 88, 6540-6547.	3.0	145
65	Dense packings of polyhedra: Platonic and Archimedean solids. Physical Review E, 2009, 80, 041104.	2.1	144
66	Thermodynamic implications of confinement for a waterlike fluid. Journal of Chemical Physics, 2001, 114, 2401-2418.	3.0	143
67	Neighbor list collision-driven molecular dynamics simulation for nonspherical hard particles.. Journal of Computational Physics, 2005, 202, 765-793.	3.8	143
68	Morphology and physical properties of Fontainebleau sandstone via a tomographic analysis. Journal of Geophysical Research, 1996, 101, 17497-17506.	3.3	136
69	Maximally random jammed packings of Platonic solids: Hyperuniform long-range correlations and isostaticity. Physical Review E, 2011, 84, 041309.	2.1	136
70	Computer generation of dense polydisperse sphere packings. Journal of Chemical Physics, 2002, 117, 8212-8218.	3.0	135
71	Determination of the effective conductivity of heterogeneous media by Brownian motion simulation. Journal of Applied Physics, 1990, 68, 3892-3903.	2.5	134
72	Tetratic order in the phase behavior of a hard-rectangle system. Physical Review B, 2006, 73, .	3.2	132

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73	Determining elastic behavior of composites by the boundary element method. Journal of Applied Physics, 1993, 74, 159-170.	2.5	131
74	Modeling of physical properties of composite materials. International Journal of Solids and Structures, 2000, 37, 411-422.	2.7	131
75	Classical disordered ground states: Super-ideal gases and stealth and equi-luminous materials. Journal of Applied Physics, 2008, 104, .	2.5	131
76	Microstructure of twoâ€phase random media. V. The nâ€point matrix probability functions for impenetrable spheres. Journal of Chemical Physics, 1985, 82, 980-987.	3.0	129
77	Optimal packings of superballs. Physical Review E, 2009, 79, 041309.	2.1	129
78	Engineered disorder in photonics. Nature Reviews Materials, 2021, 6, 226-243.	48.7	129
79	Making Negative Poissonâ€™s Ratio Microstructures by Soft Lithography. Advanced Materials, 1999, 11, 1186-1189.	21.0	126
80	New Conjectural Lower Bounds on the Optimal Density of Sphere Packings. Experimental Mathematics, 2006, 15, 307-331.	0.7	125
81	Quantification of order in the Lennard-Jones system. Journal of Chemical Physics, 2003, 118, 2256-2263.	3.0	124
82	Packing, tiling, and covering with tetrahedra. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 10612-10617.	7.1	124
83	Diffusion and reaction in heterogeneous media: Pore size distribution, relaxation times, and mean survival time. Journal of Chemical Physics, 1991, 95, 6477-6489.	3.0	122
84	Efficient simulation technique to compute effective properties of heterogeneous media. Applied Physics Letters, 1989, 55, 1847-1849.	3.3	121
85	Optimized Interactions for Targeted Self-Assembly: Application to a Honeycomb Lattice. Physical Review Letters, 2005, 95, 228301.	7.8	121
86	Random sequential addition of hard spheres in high Euclidean dimensions. Physical Review E, 2006, 74, 061308.	2.1	121
87	Hyperuniform Long-Range Correlations are a Signature of Disordered Jammed Hard-Particle Packings. Physical Review Letters, 2011, 106, 178001.	7.8	121
88	New directions in mechanics. Mechanics of Materials, 2005, 37, 231-259.	3.2	118
89	Generating random media from limited microstructural information via stochastic optimization. Journal of Applied Physics, 1999, 86, 3428-3437.	2.5	117
90	Optimal and Manufacturable Two-dimensional, KagomÃ©-like Cellular Solids. Journal of Materials Research, 2002, 17, 137-144.	2.6	115

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91	Minimal surfaces and multifunctionality. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2004, 460, 1849-1856.	2.1	115
92	Hyperuniformity and its generalizations. Physical Review E, 2016, 94, 022122.	2.1	115
93	Optimal design of manufacturable three-dimensional composites with multifunctional characteristics. Journal of Applied Physics, 2003, 94, 5748-5755.	2.5	114
94	Effective conductivity of suspensions of hard spheres by Brownian motion simulation. Journal of Applied Physics, 1991, 69, 2280-2289.	2.5	113
95	Free volume in the hard sphere liquid. Molecular Physics, 1998, 95, 289-297.	1.7	112
96	Bulk properties of twoâ€phase disordered media. I. Cluster expansion for the effective dielectric constant of dispersions of penetrable spheres. Journal of Chemical Physics, 1984, 81, 5079-5088.	3.0	111
97	Microstructure of twoâ€phase random media. III. The nâ€point matrix probability functions for fully penetrable spheres. Journal of Chemical Physics, 1983, 79, 1505-1510.	3.0	110
98	Photonic band gap in isotropic hyperuniform disordered solids with low dielectric contrast. Optics Express, 2013, 21, 19972.	3.4	110
99	Constraints on collective density variables: Two dimensions. Physical Review E, 2004, 70, 046122.	2.1	109
100	Complete band gaps in two-dimensional photonic quasicrystals. Physical Review B, 2009, 80, .	3.2	109
101	Optimal Design of Heterogeneous Materials. Annual Review of Materials Research, 2010, 40, 101-129.	9.3	109
102	Effective conductivity of anisotropic two-phase composite media. Physical Review B, 1989, 39, 4504-4515.	3.2	108
103	Scale effects on the elastic behavior of periodic andhierarchical two-dimensional composites. Journal of the Mechanics and Physics of Solids, 1999, 47, 1509-1542.	4.8	107
104	Phase behavior of colloidal superballs: Shape interpolation from spheres to cubes. Physical Review E, 2010, 81, 061105.	2.1	107
105	Cooperative Origin of Low-Density Domains in Liquid Water. Physical Review Letters, 2002, 89, 215503.	7.8	103
106	Effective properties of two-phase disordered composite media: II. Evaluation of bounds on the conductivity and bulk modulus of dispersions of impenetrable spheres. Physical Review B, 1986, 33, 6428-6435.	3.2	102
107	A linear programming algorithm to test for jamming in hard-sphere packings. Journal of Computational Physics, 2004, 197, 139-166.	3.8	102
108	Ensemble Theory for Stealthy Hyperuniform Disordered Ground States. Physical Review X, 2015, 5, .	8.9	102

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109	Microstructure characterization and bulk properties of disordered two-phase media. Journal of Statistical Physics, 1986, 45, 843-873.	1.2	101
110	Perspective: Basic understanding of condensed phases of matter via packing models. Journal of Chemical Physics, 2018, 149, 020901.	3.0	99
111	On the use of homogenization theory to design optimal piezocomposites for hydrophone applications. Journal of the Mechanics and Physics of Solids, 1997, 45, 689-708.	4.8	98
112	Point processes in arbitrary dimension from fermionic gases, random matrix theory, and number theory. Journal of Statistical Mechanics: Theory and Experiment, 2008, 2008, P11019.	2.3	97
113	Optimized Structures for Photonic Quasicrystals. Physical Review Letters, 2008, 101, 073902.	7.8	96
114	Precise algorithm to generate random sequential addition of hard hyperspheres at saturation. Physical Review E, 2013, 88, 053312.	2.1	96
115	Designed interaction potentials via inverse methods for self-assembly. Physical Review E, 2006, 73, 011406.	2.1	95
116	Evolutionaryâ€Optimized Photonic Network Structure in White Beetle Wing Scales. Advanced Materials, 2018, 30, e1702057.	21.0	95
117	Diffusionâ€controlled reactions: Mathematical formulation, variational principles, and rigorous bounds. Journal of Chemical Physics, 1988, 88, 6372-6380.	3.0	94
118	Distinctive features arising in maximally random jammed packings of superballs. Physical Review E, 2010, 81, 041304.	2.1	94
119	Emergent Behaviors from a Cellular Automaton Model for Invasive Tumor Growth in Heterogeneous Microenvironments. PLoS Computational Biology, 2011, 7, e1002314.	3.2	94
120	Modeling the effects of vasculature evolution on early brain tumor growth. Journal of Theoretical Biology, 2006, 243, 517-531.	1.7	93
121	Extraction of morphological quantities from a digitized medium. Journal of Applied Physics, 1995, 77, 6087-6099.	2.5	92
122	Cellular automaton of idealized brain tumor growth dynamics. BioSystems, 2000, 55, 119-127.	2.0	90
123	Some Observations on the Random Packing of Hard Ellipsoids. Industrial & Engineering Chemistry Research, 2006, 45, 6960-6965.	3.7	90
124	Do Binary Hard Disks Exhibit an Ideal Glass Transition?. Physical Review Letters, 2006, 96, 225502.	7.8	89
125	Mean Nearest-Neighbor Distance in Random Packings of HardD-Dimensional Spheres. Physical Review Letters, 1995, 74, 2156-2159.	7.8	88
126	Local volume fraction fluctuations in heterogeneous media. Journal of Chemical Physics, 1990, 93, 3452-3459.	3.0	85

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127	Relationship between permeability and diffusion-controlled trapping constant of porous media. Physical Review Letters, 1990, 64, 2644-2646.	7.8	84
128	Robust algorithm to generate a diverse class of dense disordered and ordered sphere packings via linear programming. Physical Review E, 2010, 82, 061302.	2.1	84
129	Diagnosing hyperuniformity in two-dimensional, disordered, jammed packings of soft spheres. Physical Review E, 2015, 91, 012302.	2.1	81
130	Generating microstructures with specified correlation functions. Journal of Applied Physics, 2001, 89, 53-60.	2.5	79
131	Morphology and effective properties of disordered heterogeneous media. International Journal of Solids and Structures, 1998, 35, 2385-2406.	2.7	78
132	Statistical mechanical models with effective potentials: Definitions, applications, and thermodynamic consequences. Journal of Chemical Physics, 2002, 117, 288-296.	3.0	78
133	Strong-contrast expansions and approximations for the effective conductivity of isotropic multiphase composites. Journal of Applied Physics, 2003, 94, 6591-6602.	2.5	78
134	Improved Bounds on the Effective Elastic Moduli of Random Arrays of Cylinders. Journal of Applied Mechanics, Transactions ASME, 1992, 59, 1-6.	2.2	77
135	Emergence of a Subpopulation in a Computational Model of Tumor Growth. Journal of Theoretical Biology, 2000, 207, 431-441.	1.7	77
136	Optimal Packings of Superdisks and the Role of Symmetry. Physical Review Letters, 2008, 100, 245504.	7.8	77
137	Thermal expansion of isotropic multiphase composites and polycrystals. Journal of the Mechanics and Physics of Solids, 1997, 45, 1223-1252.	4.8	76
138	Structure and transport properties of a porous magnetic gel via x-ray microtomography. Physical Review E, 1996, 54, 2663-2669.	2.1	75
139	Chord-distribution functions of three-dimensional random media: Approximate first-passage times of Gaussian processes. Physical Review E, 1999, 59, 4953-4963.	2.1	74
140	Monte Carlo study of correlated continuum percolation: Universality and percolation thresholds. Physical Review A, 1990, 41, 5338-5344.	2.5	72
141	Effective conductivity, dielectric constant, and diffusion coefficient of digitized composite media via first-passage-time equations. Journal of Applied Physics, 1999, 85, 1560-1571.	2.5	72
142	Designing disordered hyperuniform two-phase materials with novel physical properties. Acta Materialia, 2018, 142, 152-161.	7.9	72
143	Diffusion of finiteâ€sized Brownian particles in porous media. Journal of Chemical Physics, 1992, 96, 1498-1503.	3.0	70
144	Transport and diffusion in three-dimensional composite media. Physica A: Statistical Mechanics and Its Applications, 1994, 207, 28-36.	2.6	70

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145	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
146	A variational level set approach for surface area minimization of triply-periodic surfaces. Journal of Computational Physics, 2007, 223, 711-730.	3.8	66
147	Optical cavities and waveguides in hyperuniform disordered photonic solids. Physical Review B, 2013, 87, .	3.2	66
148	Bulk properties of twoâ€phase disordered media. III. New bounds on the effective conductivity of dispersions of penetrable spheres. Journal of Chemical Physics, 1986, 84, 6345-6359.	3.0	65
149	Densest binary sphere packings. Physical Review E, 2012, 85, 021130.	2.1	65
150	Disordered strictly jammed binary sphere packings attain an anomalously large range of densities. Physical Review E, 2013, 88, 022205.	2.1	65
151	Hyperuniformity in amorphous silicon based on the measurement of the infinite-wavelength limit of the structure factor. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 13250-13254.	7.1	65
152	Chordâ€length and freeâ€path distribution functions for manyâ€body systems. Journal of Chemical Physics, 1993, 98, 6472-6482.	3.0	64
153	Universal hidden order in amorphous cellular geometries. Nature Communications, 2019, 10, 811.	12.8	64
154	Microstructure of twoâ€phase random media. II. The Mayerâ€“Montroll and Kirkwoodâ€“Salsburg hierarchies. Journal of Chemical Physics, 1983, 78, 3262-3272.	3.0	63
155	Computer simulation results for the two-point probability function of composite media. Journal of Computational Physics, 1988, 76, 176-191.	3.8	63
156	Random-walk simulation of diffusion-controlled processes among static traps. Physical Review B, 1989, 39, 11833-11839.	3.2	63
157	Effective conductivity of suspensions of overlapping spheres. Journal of Applied Physics, 1992, 71, 2727-2735.	2.5	63
158	Toward the jamming threshold of sphere packings: Tunneled crystals. Journal of Applied Physics, 2007, 102, .	2.5	63
159	Microstructural degeneracy associated with a two-point correlation function and its information content. Physical Review E, 2012, 85, 051140.	2.1	63
160	Impact of microstructure on the effective diffusivity in random packings of hard spheres. Journal of Applied Physics, 2014, 116, .	2.5	63
161	Accurate modeling and reconstruction of three-dimensional percolating filamentary microstructures from two-dimensional micrographs via dilation-erosion method. Materials Characterization, 2014, 89, 33-42.	4.4	63
162	Effective conductivity of hardâ€sphere dispersions. Journal of Applied Physics, 1990, 68, 5486-5493.	2.5	62

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163	Link between the conductivity and elastic moduli of composite materials. Physical Review Letters, 1993, 71, 2927-2930.	7.8	62
164	Pair connectedness and mean cluster size for continuumâ€percolation models: Computerâ€simulation results. Journal of Chemical Physics, 1988, 89, 6427-6433.	3.0	61
165	Controlling the Short-Range Order and Packing Densities of Many-Particle Systemsâ€. Journal of Physical Chemistry B, 2002, 106, 8354-8359.	2.6	60
166	Diffusionâ€controlled reactions. II. Further bounds on the rate constant. Journal of Chemical Physics, 1989, 90, 1644-1647.	3.0	58
167	Synthetic diamond and wurtzite structures self-assemble with isotropic pair interactions. Physical Review E, 2007, 75, 031403.	2.1	58
168	Hard knock for thermodynamics. Nature, 2000, 405, 521-523.	27.8	57
169	Exactly solvable disordered sphere-packing model in arbitrary-dimensional Euclidean spaces. Physical Review E, 2006, 73, 031106.	2.1	57
170	Configurational entropy of binary hard-disk glasses: Nonexistence of an ideal glass transition. Journal of Chemical Physics, 2007, 127, 124509.	3.0	56
171	The phase diagram of high-pressure superionic ice. Nature Communications, 2015, 6, 8156.	12.8	56
172	Porosity for the penetrableâ€concentricâ€shell model of twoâ€phase disordered media: Computer simulation results. Journal of Chemical Physics, 1988, 89, 3258-3263.	3.0	55
173	Hard-sphere statistics along the metastable amorphous branch. Physical Review E, 1998, 58, 532-537.	2.1	55
174	Self-assembly of the simple cubic lattice with an isotropic potential. Physical Review E, 2006, 74, 021404.	2.1	55
175	Improved reconstructions of random media using dilation and erosion processes. Physical Review E, 2011, 84, 056102.	2.1	55
176	Density of States for a Specified Correlation Function and the Energy Landscape. Physical Review Letters, 2012, 108, 080601.	7.8	55
177	Necessary Conditions on Realizable Two-Point Correlation Functions of Random Mediaâ€. Industrial & Engineering Chemistry Research, 2006, 45, 6923-6928.	3.7	54
178	Transport, geometrical, and topological properties of stealthy disordered hyperuniform two-phase systems. Journal of Chemical Physics, 2016, 145, 244109.	3.0	54
179	Critical slowing down and hyperuniformity on approach to jamming. Physical Review E, 2016, 94, 012902.	2.1	54
180	Collective coordinate control of density distributions. Physical Review E, 2006, 74, 031104.	2.1	53

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181	Phase Diagram and Structural Diversity of the Densest Binary Sphere Packings. Physical Review Letters, 2011, 107, 125501.	7.8	53
182	Nearly hyperuniform network models of amorphous silicon. Physical Review B, 2013, 87, .	3.2	53
183	Statistical properties of determinantal point processes in high-dimensional Euclidean spaces. Physical Review E, 2009, 79, 041108.	2.1	52
184	Nonequilibrium hard-disk packings with controlled orientational order. Journal of Chemical Physics, 2000, 113, 4844.	3.0	51
185	Effective-medium approximation for composite media: Realizable single-scale dispersions. Journal of Applied Physics, 2001, 89, 1725.	2.5	51
186	Optimal Bounds on the Trapping Constant and Permeability of Porous Media. Physical Review Letters, 2004, 92, 255505.	7.8	51
187	Hyperuniformity, quasi-long-range correlations, and void-space constraints in maximally random jammed particle packings. I. Polydisperse spheres. Physical Review E, 2011, 83, 051308.	2.1	51
188	Ground states of stealthy hyperuniform potentials: I. Entropically favored configurations. Physical Review E, 2015, 92, 022119.	2.1	51
189	Bounds on the effective moduli of cracked materials. Journal of the Mechanics and Physics of Solids, 1996, 44, 233-242.	4.8	50
190	Simulating tumor growth in confined heterogeneous environments. Physical Biology, 2008, 5, 036010.	1.8	50
191	Toward an Ising model of cancer and beyond. Physical Biology, 2011, 8, 015017.	1.8	50
192	Effect of dimensionality on the continuum percolation of overlapping hyperspheres and hypercubes. II. Simulation results and analyses. Journal of Chemical Physics, 2012, 137, 074106.	3.0	50
193	Hyperuniformity of quasicrystals. Physical Review B, 2017, 95, .	3.2	50
194	Large-Scale Structure and Hyperuniformity of Amorphous Ices. Physical Review Letters, 2017, 119, 136002.	7.8	50
195	Bounds on the conductivity of a suspension of random impenetrable spheres. Journal of Applied Physics, 1986, 60, 3576-3581.	2.5	49
196	Communication: Designed diamond ground state via optimized isotropic monotonic pair potentials. Journal of Chemical Physics, 2013, 138, 061101.	3.0	48
197	Equilibrium Phase Behavior and Maximally Random Jammed State of Truncated Tetrahedra. Journal of Physical Chemistry B, 2014, 118, 7981-7992.	2.6	48
198	The Perfect Glass Paradigm: Disordered Hyperuniform Glasses Down to Absolute Zero. Scientific Reports, 2016, 6, 36963.	3.3	48

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199	Random scalar fields and hyperuniformity. Journal of Applied Physics, 2017, 121, .	2.5	48
200	Bulk properties of twoâ€phase disordered media. II. Effective conductivity of a dilute dispersion of penetrable spheres. Journal of Chemical Physics, 1985, 83, 4776-4785.	3.0	47
201	Exact Expression for the Effective Elastic Tensor of Disordered Composites. Physical Review Letters, 1997, 79, 681-684.	7.8	47
202	A Novel Three-Phase Model of Brain Tissue Microstructure. PLoS Computational Biology, 2008, 4, e1000152.	3.2	47
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