Robert M Ziff

List of Publications by Citations

142 papers	6,844 citations	43 h-index	80 g-index
146 ext. papers	7,395 ext. citations	3.8 avg, IF	6.26 L-index

#	Paper	IF	Citations
142	Kinetic phase transitions in an irreversible surface-reaction model. *Physical Review Letters*, **1986**, 56, 2553-2556	7.4	885
141	Efficient Monte Carlo algorithm and high-precision results for percolation. *Physical Review Letters*, **2000**, 85, 4104-7	7.4	359
140	Fast Monte Carlo algorithm for site or bond percolation. *Physical Review E*, **2001**, 64, 016706	2.4	337
139	Precise determination of the bond percolation thresholds and finite-size scaling corrections for the sc, fcc, and bcc lattices. *Physical Review E*, **1998**, 57, 230-236	2.4	267
138	Kinetics of polymerization. *Journal of Statistical Physics*, **1980**, 23, 241-263	1.5	235
137	Spanning probability in 2D percolation. *Physical Review Letters*, **1992**, 69, 2670-2673	7.4	208
136	Coagulation equations with gelation. *Journal of Statistical Physics*, **1983**, 31, 519-563	1.5	190
135	Kinetics of polymer gelation. *Journal of Chemical Physics*, **1980**, 73, 3492-3499	3.9	166
134	Precise determination of the critical percolation threshold for the three-dimensional "Swiss cheese" model using a growth algorithm. *Journal of Chemical Physics*, **2001**, 114, 3659-3661	3.9	158
133	Nanoscale Adhesion Ligand Organization Regulates Osteoblast Proliferation and Differentiation. *Nano Letters*, **2004**, 4, 1501-1506	11.5	154
132	Random sequential adsorption of unoriented rectangles onto a plane. *Journal of Chemical Physics*, **1989**, 91, 2599-2602	3.9	153
131	Efficient measurement of the percolation threshold for fully penetrable discs. *Journal of Physics A*, **2000**, 33, L399-L407		151
130	Explosive growth in biased dynamic percolation on two-dimensional regular lattice networks. *Physical Review Letters*, **2009**, 103, 045701	7.4	143
129	Temperature Dependence of Hydrogen Bonding in Supercritical Water. *The Journal of Physical Chemistry*, **1996**, 100, 403-408		129
128	The efficient determination of the percolation threshold by a frontier-generating walk in a gradient. *Journal of Physics A*, **1986**, 19, L1169-L1172		129
127	Test of scaling exponents for percolation-cluster perimeters. *Physical Review Letters*, **1986**, 56, 545-548	7.4	114
126	Site percolation thresholds for Archimedean lattices. *Physical Review E*, **1999**, 60, 275-83	2.4	110

125	Investigation of the first-order phase transition in the A-B2 reaction model using a constant-coverage kinetic ensemble. *Physical Review A*, **1992**, 46, 4630-4633	2.6	100
124	Generation of percolation cluster perimeters by a random walk. *Journal of Physics A*, **1984**, 17, 3009-3017		96
123	Epidemic analysis of the second-order transition in the Ziff-Gulari-Barshad surface-reaction model. *Physical Review E*, **1997**, 56, R6241-R6244	2.4	93
122	Recent advances and open challenges in percolation. *European Physical Journal: Special Topics*, **2014**, 223, 2307-2321	2.3	90
121	Universality of the excess number of clusters and the crossing probability function in three-dimensional percolation. *Journal of Physics A*, **1998**, 31, 8147-8157		86
120	Scaling behavior of explosive percolation on the square lattice. *Physical Review E*, **2010**, 82, 051105	2.4	85
119	Universal record statistics of random walks and Lévy flights. *Physical Review Letters*, **2008**, 101, 050601	7.4	82
118	Ordinary percolation with discontinuous transitions. *Nature Communications*, **2012**, 3, 787	17.4	81
117	Four-tap shift-register-sequence random-number generators. *Computers in Physics*, **1998**, 12, 385		79
116	Asymmetry in the percolation thresholds of fully penetrable disks with two different radii. *Physical Review E*, **2007**, 76, 051115	2.4	78
115	Tricritical point in explosive percolation. *Physical Review Letters*, **2011**, 106, 095703	7.4	74
114	Universality of Finite-Size Corrections to the Number of Critical Percolation Clusters. *Physical Review Letters*, **1997**, 79, 3447-3450	7.4	62
113	Effects of A desorption on the first-order transition in the A-B2 reaction model. *Physical Review A*, **1992**, 46, 4534-4538	2.6	57
112	Generalized cell-dual-cell transformation and exact thresholds for percolation. *Physical Review E*, **2006**, 73, 016134	2.4	56
111	Exact Results for the Universal Area Distribution of Clusters in Percolation, Ising, and Potts Models. *Journal of Statistical Physics*, **2003**, 110, 1-33	1.5	56
110	Similarity of Percolation Thresholds on the HCP and FCC Lattices. *Journal of Statistical Physics*, **2000**, 98, 961-970	1.5	55
109	Convergence of threshold estimates for two-dimensional percolation. *Physical Review E*, **2002**, 66, 016129	2.4	54
108	A Stochastic Model for Wound Healing. *Journal of Statistical Physics*, **2006**, 122, 909-924	1.5	52

107	Determination of the bond percolation threshold for the Kagomé lattice. *Journal of Physics A*, **1997**, 30, 5351-5359		50
106	Comparison of rigid and flexible simple point charge water models at supercritical conditions. *Journal of Computational Chemistry*, **1996**, 17, 1757-1770	3.5	50
105	Exact bond percolation thresholds in two dimensions. *Journal of Physics A*, **2006**, 39, 15083-15090		48
104	Kinetics of random sequential adsorption of rectangles and line segments. *Journal of Chemical Physics*, **1990**, 93, 8270-8272	3.9	48
103	Self-sustained oscillations in a heterrogeneous catalytic reaction: a monte carlo simulation. *Chemical Engineering Science*, **1989**, 44, 1403-1411	4.4	47
102	Patchy percolation on a hierarchical network with small-world bonds. *Physical Review E*, **2009**, 80, 041115	2.4	46
101	Percolation threshold, Fisher exponent, and shortest path exponent for four and five dimensions. *Physical Review E*, **2001**, 64, 026115	2.4	44
100	Fractal kinetics of COVID-19 pandemic (with update 3/1/20)		44
99	Critical behavior of the susceptible-infected-recovered model on a square lattice. *Physical Review E*, **2010**, 82, 051921	2.4	43
98	Shape-dependent universality in percolation. *Physica A: Statistical Mechanics and Its Applications*, **1999**, 266, 17-26	3.3	40
97	Response of a catalytic reaction to periodic variation of the CO pressure: increased CO2 production and dynamic phase transition. *Physical Review E*, **2005**, 71, 016120	2.4	37
96	Percolation thresholds on two-dimensional Voronoi networks and Delaunay triangulations. *Physical Review E*, **2009**, 80, 041101	2.4	36
95	In a search for a shape maximizing packing fraction for two-dimensional random sequential adsorption. *Journal of Chemical Physics*, **2016**, 145, 044708	3.9	30
94	Shortest-path fractal dimension for percolation in two and three dimensions. *Physical Review E*, **2012**, 86, 061101	2.4	29
93	Critical surfaces for general bond percolation problems. *Physical Review Letters*, **2008**, 100, 185701	7.4	29
92	Percolation crossing formulae and conformal field theory. *Journal of Physics A: Mathematical and Theoretical*, **2007**, 40, F771-F784	2	29
91	Percolation of disordered jammed sphere packings. *Journal of Physics A: Mathematical and Theoretical*, **2017**, 50, 085001	2	28
90	Correction-to-scaling exponent for two-dimensional percolation. *Physical Review E*, **2011**, 83, 020107	2.4	28

89	Boundary conditions in random sequential adsorption. *Journal of Statistical Mechanics: Theory and Experiment*, **2018**, 2018, 043302	1.9	27
88	Analytical solutions to fragmentation equations with flow. *AICHE Journal*, **1988**, 34, 2073-2076	3.6	27
87	Formulation predictive dissolution (fPD) testing to advance oral drug product development: An introduction to the US FDA funded '21st Century BA/BE' project. *International Journal of Pharmaceutics*, **2018**, 548, 120-127	6.5	27
86	Universal condition for critical percolation thresholds of kagom□like lattices. *Physical Review E*, **2009**, 79, 020102	2.4	26
85	Capture of particles undergoing discrete random walks. *Journal of Chemical Physics*, **2009**, 130, 204104	3.9	26
84	Predictions of bond percolation thresholds for the kagom□and Archimedean (3, 12(2)) lattices. *Physical Review E*, **2006**, 73, 045102	2.4	26
83	Exact results at the two-dimensional percolation point. *Physical Review B*, **1998**, 57, R8075-R8078	3.3	26
82	Topological percolation on hyperbolic simplicial complexes. *Physical Review E*, **2018**, 98,	2.4	26
81	Mass Transport Analysis of Bicarbonate Buffer: Effect of the CO-HCO Hydration-Dehydration Kinetics in the Fluid Boundary Layer and the Apparent Effective p K Controlling Dissolution of Acids and Bases. *Molecular Pharmaceutics*, **2019**, 16, 2626-2635	5.6	25
80	Unified Solution of the Expected Maximum of a Discrete Time Random Walk and the Discrete Flux to a Spherical Trap. *Journal of Statistical Physics*, **2006**, 122, 833-856	1.5	25
79	Shapes for maximal coverage for two-dimensional random sequential adsorption. *Physical Chemistry Chemical Physics*, **2015**, 17, 24376-81	3.6	24
78	Effective boundary extrapolation length to account for finite-size effects in the percolation crossing function. *Physical Review E*, **1996**, 54, 2547-2554	2.4	22
77	Critical surfaces for general inhomogeneous bond percolation problems. *Journal of Statistical Mechanics: Theory and Experiment*, **2010**, 2010, P03021	1.9	20
76	Short-range correlations in percolation at criticality. *Physical Review E*, **2014**, 90, 042106	2.4	18
75	Hull-generating walks. *Physica D: Nonlinear Phenomena*, **1989**, 38, 377-383	3.3	18
74	Retention capacity of random surfaces. *Physical Review Letters*, **2012**, 108, 045703	7.4	17
73	Fugacity coefficients for free radicals in dense fluids: HO2 in supercritical water. *AICHE Journal*, **1997**, 43, 1287-1299	3.6	16
72	Exact critical exponent for the shortest-path scaling function in percolation. *Journal of Physics A*, **1999**, 32, L457-L459		16

71	Boundary effects in a surface reaction model for CO oxidation. *Journal of Chemical Physics*, **1993**, 98, 674-677	3.9	16
70	Flux to a trap. *Journal of Statistical Physics*, **1991**, 65, 1217-1233	1.5	16
69	The critical manifolds of inhomogeneous bond percolation on bow-tie and checkerboard lattices. *Journal of Physics A: Mathematical and Theoretical*, **2012**, 45, 494005	2	15
68	The effects of surface defects in a catalysis model. *Surface Science*, **2002**, 517, 75-86	1.8	15
67	Percolation in networks with voids and bottlenecks. *Physical Review E*, **2009**, 79, 021118	2.4	14
66	Anchored critical percolation clusters and 2D electrostatics. *Physical Review Letters*, **2006**, 97, 115702	7.4	14
65	Precise bond percolation thresholds on several four-dimensional lattices. *Physical Review Research*, **2020**, 2,	3.9	14
64	Percolation and the pandemic. *Physica A: Statistical Mechanics and Its Applications*, **2021**, 568, 125723	3.3	14
63	Critical percolation clusters in seven dimensions and on a complete graph. *Physical Review E*, **2018**, 97, 022107	2.4	13
62	Renormalization group for link percolation on planar hyperbolic manifolds. *Physical Review E*, **2019**, 100, 022306	2.4	13
61	Computation of nucleation at a nonequilibrium first-order phase transition using a rare-event algorithm. *Journal of Chemical Physics*, **2010**, 133, 174107	3.9	13
60	A new scale-invariant ratio and finite-size scaling for the stochastic susceptible□nfected□ecovered model. *Journal of Statistical Mechanics: Theory and Experiment*, **2011**, 2011, P03006	1.9	13
59	Percolation on branching simplicial and cell complexes and its relation to interdependent percolation. *Physical Review E*, **2019**, 100, 062311	2.4	13
58	On Cardy's formula for the critical crossing probability in 2D percolation. *Journal of Physics A*, **1995**, 28, 1249-1255		12
57	The barrier method: a technique for calculating very long transition times. *Journal of Chemical Physics*, **2010**, 133, 124103	3.9	11
56	Crossing on hyperbolic lattices. *Physical Review E*, **2012**, 85, 051141	2.4	11
55	Crossover from isotropic to directed percolation. *Physical Review E*, **2012**, 86, 021102	2.4	11
54	Exact factorization of correlation functions in two-dimensional critical percolation. *Physical Review E*, **2007**, 76, 041106	2.4	11

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52	Results for a critical threshold, the correction-to-scaling exponent and susceptibility amplitude ratio for 2d percolation. *Physics Procedia*, **2011**, 15, 106-112		10
51	Factorization of percolation density correlation functions for clusters touching the sides of a rectangle. *Journal of Statistical Mechanics: Theory and Experiment*, **2009**, 2009, P02067	1.9	10
50	The harmonic measure of diffusion-limited aggregates including rare events. *Europhysics Letters*, **2009**, 87, 20001	1.6	10
49	REEXAMINATION OF SEVEN-DIMENSIONAL SITE PERCOLATION THRESHOLD. *International Journal of Modern Physics C*, **2000**, 11, 205-209	1.1	10
48	A Molecular Dynamics Investigation of Hydrogen Bonding in Supercritical Water. *ACS Symposium Series*, **1995**, 47-64	0.4	10
47	Proof of crossing formula for 2D percolation. *Journal of Physics A*, **1995**, 28, 6479-6480		10
46	Site percolation on the Penrose rhomb lattice. *Physica A: Statistical Mechanics and Its Applications*, **1999**, 269, 201-210	3.3	9
45	Partial oxidation of methane on a nickel catalyst: Kinetic Monte-Carlo simulation study. *Chemical Engineering Science*, **2016**, 147, 128-136	4.4	9
44	Elucidating structure-performance relationships in whole-cell cooperative enzyme catalysis. *Nature Catalysis*, **2019**, 2, 809-819	36.5	8
43	Dimer covering and percolation frustration. *Physical Review E*, **2015**, 92, 032134	2.4	8
42	Factorization of correlations in two-dimensional percolation on the plane and torus. *Journal of Physics A: Mathematical and Theoretical*, **2011**, 44, 065002	2	8
41	Harmonic measure for percolation and ising clusters including rare events. *Physical Review Letters*, **2008**, 101, 144102	7.4	8
40	Universal amplitude ratio Gamma-/Gamma+ for two-dimensional percolation. *Physical Review E*, **2006**, 74, 020101	2.4	8
39	General flux to a trap in one and three dimensions. *Journal of Physics Condensed Matter*, **2007**, 19, 065102	2.8	8
38	Bond percolation on simple cubic lattices with extended neighborhoods. *Physical Review E*, **2020**, 102, 012102	2.4	7
37	A formula for crossing probabilities of critical systems inside polygons. *Journal of Physics A: Mathematical and Theoretical*, **2017**, 50, 064005	2	7
36	Mathematics. Getting the jump on explosive percolation. *Science*, **2013**, 339, 1159-60	33.3	7

35	Self-dual Planar Hypergraphs and Exact Bond Percolation Thresholds. *Electronic Journal of Combinatorics*, **2011**, 18,	1.1	7
34	Hierarchical Mass Transfer Analysis of Drug Particle Dissolution, Highlighting the Hydrodynamics, pH, Particle Size, and Buffer Effects for the Dissolution of Ionizable and Nonionizable Drugs in a Compendial Dissolution Vessel. *Molecular Pharmaceutics*, **2020**, 17, 3870-3884	5.6	7
33	Fractal dimensions of theQ-state Potts model for complete and external hulls. *Journal of Statistical Mechanics: Theory and Experiment*, **2010**, 2010, P03004	1.9	6
32	Cluster pinch-point densities in polygons. *Journal of Physics A: Mathematical and Theoretical*, **2012**, 45, 505002	2	6
31	Dynamic behavior of the monomer–monomer surface reaction model with adsorbate interactions. *Journal of Chemical Physics*, **1997**, 107, 7397-7401	3.9	6
30	Renormalization group theory of percolation on pseudofractal simplicial and cell complexes. *Physical Review E*, **2020**, 102, 012308	2.4	6
29	Site percolation on square and simple cubic lattices with extended neighborhoods and their continuum limit. *Physical Review E*, **2021**, 103, 022126	2.4	6
28	Honeycomb lattices with defects. *Physical Review E*, **2016**, 93, 042132	2.4	5
27	No-Enclave Percolation Corresponds to Holes in the Cluster Backbone. *Physical Review Letters*, **2016**, 117, 185701	7.4	5
26	Universal features of cluster numbers in percolation. *Physical Review E*, **2017**, 96, 052119	2.4	4
25	Cluster densities at 2D critical points in rectangular geometries. *Journal of Physics A: Mathematical and Theoretical*, **2011**, 44, 385002	2	4
24	Jamming and percolation of dimers in restricted-valence random sequential adsorption. *Physical Review Research*, **2020**, 2,	3.9	4
23	Random sequential adsorption of particles with tetrahedral symmetry. *Physical Review E*, **2019**, 100, 052903	2.4	4
22	Percolation on hypergraphs with four-edges. *Journal of Physics A: Mathematical and Theoretical*, **2015**, 48, 405004	2	3
21	Retention capacity of correlated surfaces. *Physical Review E*, **2014**, 89, 062141	2.4	3
20	The density of critical percolation clusters touching the boundaries of strips and squares. *Journal of Statistical Mechanics: Theory and Experiment*, **2007**, 2007, P06012-P06012	1.9	3
19	Excess number of percolation clusters on the surface of a sphere. *Physica A: Statistical Mechanics and Its Applications*, **2001**, 296, 1-8	3.3	3
18	Percolation crossing probabilities in hexagons: a numerical study. *Journal of Physics A: Mathematical and Theoretical*, **2015**, 48, 025001	2	2

17	Exact finite-size corrections in the dimer model on a planar square lattice. *Journal of Physics A: Mathematical and Theoretical*, **2019**, 52, 335001	2	2
16	Harmonic measure for critical Potts clusters. *Physical Review E*, **2009**, 80, 031141	2.4	2
15	Site and bond percolation thresholds on regular lattices with compact extended-range neighborhoods in two and three dimensions.. *Physical Review E*, **2022**, 105, 024105	2.4	2
14	Critical pore radius and transport properties of disordered hard- and overlapping-sphere models. *Physical Review E*, **2021**, 104, 014127	2.4	2
13	Kinetic Monte-Carlo Simulation of Methane Steam Reforming over a Nickel Surface. *Catalysts*, **2019**, 9, 946	4	2
12	Comparison of rigid and flexible simple point charge water models at supercritical conditions **1996**, 17, 1757		2
11	Simple algorithm to test for linking to Wilson loops in percolation. *Physical Review E*, **2005**, 72, 017104	2.4	1
10	Permeation of Selected Organic Compounds Through Untreated and Barrier-Treated High-Density Polyethylene. *Materials Research Society Symposia Proceedings*, **1990**, 215, 145		1
9	Universal correlations in percolation. *Frontiers of Physics*, **2020**, 15, 1	3.7	1
8	Critical percolation on the kagome hypergraph. *Journal of Physics A: Mathematical and Theoretical*, **2021**, 54, 055006	2	1
7	Influence of surface nano-patterning on the placement of InAs quantum dots. *Journal of Applied Physics*, **2018**, 124, 115307	2.5	1
6	Improving Dissolution Behavior and Oral Absorption of Drugs with pH-Dependent Solubility Using pH Modifiers: A Physiologically Realistic Mass Transport Analysis. *Molecular Pharmaceutics*, **2021**, 18, 3326-3341	5.6	1
5	Comparison of rigid and flexible simple point charge water models at supercritical conditions **1996**, 17, 1757		1
4	Site and bond percolation on four-dimensional simple hypercubic lattices with extended neighborhoods. *Journal of Statistical Mechanics: Theory and Experiment*, **2022**, 2022, 033202	1.9	1
3	Bond percolation between k separated points on a square lattice. *Physical Review E*, **2020**, 101, 062143	2.4	0
2	Effect of pore-scale heterogeneity on scale-dependent permeability: Pore-network simulation and finite-size scaling analysis. *Water Resources Research*,e2021WR030664	5.4	0
1	Efficient Simulation of Percolation Lattices **2009**, 25-47		