

# Robert M Ziff

## List of Publications by Year in descending order

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144  
papers

7,910  
citations

57758

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146  
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146  
docs citations

146  
times ranked

3898  
citing authors

#	ARTICLE	IF	CITATIONS
1	Kinetic Phase Transitions in an Irreversible Surface-Reaction Model. <i>Physical Review Letters</i> , 1986, 56, 2553-2556.	7.8	950
2	Efficient Monte Carlo Algorithm and High-Precision Results for Percolation. <i>Physical Review Letters</i> , 2000, 85, 4104-4107.	7.8	418
3	Fast Monte Carlo algorithm for site or bond percolation. <i>Physical Review E</i> , 2001, 64, 016706.	2.1	404
4	Precise determination of the bond percolation thresholds and finite-size scaling corrections for the sc, fcc, and bcc lattices. <i>Physical Review E</i> , 1998, 57, 230-236.	2.1	291
5	Kinetics of polymerization. <i>Journal of Statistical Physics</i> , 1980, 23, 241-263.	1.2	258
6	Spanning probability in 2D percolation. <i>Physical Review Letters</i> , 1992, 69, 2670-2673.	7.8	237
7	Coagulation equations with gelation. <i>Journal of Statistical Physics</i> , 1983, 31, 519-563.	1.2	212
8	Kinetics of polymer gelation. <i>Journal of Chemical Physics</i> , 1980, 73, 3492-3499.	3.0	198
9	Precise determination of the critical percolation threshold for the three-dimensional "Swiss cheese" model using a growth algorithm. <i>Journal of Chemical Physics</i> , 2001, 114, 3659-3661.	3.0	182
10	Efficient measurement of the percolation threshold for fully penetrable discs. <i>Journal of Physics A</i> , 2000, 33, L399-L407.	1.6	177
11	Random sequential adsorption of unoriented rectangles onto a plane. <i>Journal of Chemical Physics</i> , 1989, 91, 2599-2602.	3.0	166
12	Nanoscale Adhesion Ligand Organization Regulates Osteoblast Proliferation and Differentiation. <i>Nano Letters</i> , 2004, 4, 1501-1506.	9.1	164
13	Explosive Growth in Biased Dynamic Percolation on Two-Dimensional Regular Lattice Networks. <i>Physical Review Letters</i> , 2009, 103, 045701.	7.8	162
14	Temperature Dependence of Hydrogen Bonding in Supercritical Water. <i>The Journal of Physical Chemistry</i> , 1996, 100, 403-408.	2.9	152
15	The efficient determination of the percolation threshold by a frontier-generating walk in a gradient. <i>Journal of Physics A</i> , 1986, 19, L1169-L1172.	1.6	139
16	Site percolation thresholds for Archimedean lattices. <i>Physical Review E</i> , 1999, 60, 275-283.	2.1	132
17	Test of scaling exponents for percolation-cluster perimeters. <i>Physical Review Letters</i> , 1986, 56, 545-548.	7.8	123
18	Generation of percolation cluster perimeters by a random walk. <i>Journal of Physics A</i> , 1984, 17, 3009-3017.	1.6	107

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19	Recent advances and open challenges in percolation. European Physical Journal: Special Topics, 2014, 223, 2307-2321.	2.6	107
20	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.	2.5	104
21	Epidemic analysis of the second-order transition in the Ziff-Gulari-Barshad surface-reaction model. Physical Review E, 1997, 56, R6241-R6244.	2.1	102
22	Universal Record Statistics of Random Walks and Lévy Flights. Physical Review Letters, 2008, 101, 050601.	7.8	98
23	Scaling behavior of explosive percolation on the square lattice. Physical Review E, 2010, 82, 051105.	2.1	96
24	Universality of the excess number of clusters and the crossing probability function in three-dimensional percolation. Journal of Physics A, 1998, 31, 8147-8157.	1.6	91
25	Ordinary percolation with discontinuous transitions. Nature Communications, 2012, 3, 787.	12.8	90
26	Asymmetry in the percolation thresholds of fully penetrable disks with two different radii. Physical Review E, 2007, 76, 051115.	2.1	88
27	Four-tap shift-register-sequence random-number generators. Computers in Physics, 1998, 12, 385.	0.5	86
28	Tricritical Point in Explosive Percolation. Physical Review Letters, 2011, 106, 095703.	7.8	78
29	Universality of Finite-Size Corrections to the Number of Critical Percolation Clusters. Physical Review Letters, 1997, 79, 3447-3450.	7.8	66
30	Convergence of threshold estimates for two-dimensional percolation. Physical Review E, 2002, 66, 016129.	2.1	66
31	Title is missing!. Journal of Statistical Physics, 2003, 110, 1-33.	1.2	66
32	Generalized cell-dual-cell transformation and exact thresholds for percolation. Physical Review E, 2006, 73, 016134.	2.1	65
33	Effects of Adsorption on the first-order transition in the A-B2 reaction model. Physical Review A, 1992, 46, 4534-4538.	2.5	60
34	Similarity of Percolation Thresholds on the HCP and FCC Lattices. Journal of Statistical Physics, 2000, 98, 961-970.	1.2	60
35	A Stochastic Model for Wound Healing. Journal of Statistical Physics, 2006, 122, 909-924.	1.2	60
36	Comparison of rigid and flexible simple point charge water models at supercritical conditions. Journal of Computational Chemistry, 1996, 17, 1757-1770.	3.3	59

#	ARTICLE	IF	CITATIONS
37	Exact bond percolation thresholds in two dimensions. Journal of Physics A, 2006, 39, 15083-15090.	1.6	56
38	Critical behavior of the susceptible-infected-recovered model on a square lattice. Physical Review E, 2010, 82, 051921.	2.1	56
39	Determination of the bond percolation threshold for the KagomÃ© lattice. Journal of Physics A, 1997, 30, 5351-5359.	1.6	55
40	Kinetics of random sequential adsorption of rectangles and line segments. Journal of Chemical Physics, 1990, 93, 8270-8272.	3.0	54
41	Self-sustained oscillations in a heterogeneous catalytic reaction: a monte carlo simulation. Chemical Engineering Science, 1989, 44, 1403-1411.	3.8	51
42	Percolation threshold, Fisher exponent, and shortest path exponent for four and five dimensions. Physical Review E, 2001, 64, 026115.	2.1	51
43	Patchy percolation on a hierarchical network with small-world bonds. Physical Review E, 2009, 80, 041115.	2.1	50
44	Shape-dependent universality in percolation. Physica A: Statistical Mechanics and Its Applications, 1999, 266, 17-26.	2.6	45
45	Percolation of disordered jammed sphere packings. Journal of Physics A: Mathematical and Theoretical, 2017, 50, 085001.	2.1	43
46	Percolation thresholds on two-dimensional Voronoi networks and Delaunay triangulations. Physical Review E, 2009, 80, 041101.	2.1	42
47	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.	5.2	41
48	Topological percolation on hyperbolic simplicial complexes. Physical Review E, 2018, 98, .	2.1	40
49	Response of a catalytic reaction to periodic variation of the CO pressure: Increased CO <sub>2</sub> production and dynamic phase transition. Physical Review E, 2005, 71, 016120.	2.1	39
50	In a search for a shape maximizing packing fraction for two-dimensional random sequential adsorption. Journal of Chemical Physics, 2016, 145, 044708.	3.0	39
51	Percolation crossing formulae and conformal field theory. Journal of Physics A: Mathematical and Theoretical, 2007, 40, F771-F784.	2.1	36
52	Mass Transport Analysis of Bicarbonate Buffer: Effect of the CO <sub>2</sub> and H <sub>2</sub> CO <sub>3</sub> Hydration/Dehydration Kinetics in the Fluid Boundary Layer and the Apparent Effective $pK_a$ Controlling Dissolution of Acids and Bases. Molecular Pharmaceutics, 2019, 16, 2626-2635.	4.6	34
53	Boundary conditions in random sequential adsorption. Journal of Statistical Mechanics: Theory and Experiment, 2018, 2018, 043302.	2.3	33
54	Predictions of bond percolation thresholds for the kagomÃ© and Archimedean(3,122)lattices. Physical Review E, 2006, 73, 045102.	2.1	32

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55	Critical Surfaces for General Bond Percolation Problems. <i>Physical Review Letters</i> , 2008, 100, 185701.	7.8	32
56	Analytical solutions to fragmentation equations with flow. <i>AIChE Journal</i> , 1988, 34, 2073-2076.	3.6	31
57	Exact results at the two-dimensional percolation point. <i>Physical Review B</i> , 1998, 57, R8075-R8078.	3.2	30
58	Unified Solution of the Expected Maximum of a Discrete Time Random Walk and the Discrete Flux to a Spherical Trap. <i>Journal of Statistical Physics</i> , 2006, 122, 833-856.	1.2	30
59	Correction-to-scaling exponent for two-dimensional percolation. <i>Physical Review E</i> , 2011, 83, 020107.	2.1	30
60	Shortest-path fractal dimension for percolation in two and three dimensions. <i>Physical Review E</i> , 2012, 86, 061101.	2.1	30
61	Universal condition for critical percolation thresholds of kagom�-like lattices. <i>Physical Review E</i> , 2009, 79, 020102.	2.1	29
62	Percolation and the pandemic. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2021, 568, 125723.	2.6	29
63	Capture of particles undergoing discrete random walks. <i>Journal of Chemical Physics</i> , 2009, 130, 204104.	3.0	28
64	Shapes for maximal coverage for two-dimensional random sequential adsorption. <i>Physical Chemistry Chemical Physics</i> , 2015, 17, 24376-24381.	2.8	28
65	Effective boundary extrapolation length to account for finite-size effects in the percolation crossing function. <i>Physical Review E</i> , 1996, 54, 2547-2554.	2.1	25
66	Exact critical exponent for the shortest-path scaling function in percolation. <i>Journal of Physics A</i> , 1999, 32, L457-L459.	1.6	23
67	Critical surfaces for general inhomogeneous bond percolation problems. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2010, 2010, P03021.	2.3	22
68	Retention Capacity of Random Surfaces. <i>Physical Review Letters</i> , 2012, 108, 045703.	7.8	20
69	Short-range correlations in percolation at criticality. <i>Physical Review E</i> , 2014, 90, 042106.	2.1	20
70	Percolation on branching simplicial and cell complexes and its relation to interdependent percolation. <i>Physical Review E</i> , 2019, 100, 062311.	2.1	20
71	Hull-generating walks. <i>Physica D: Nonlinear Phenomena</i> , 1989, 38, 377-383.	2.8	19
72	Percolation in finite matching lattices. <i>Physical Review E</i> , 2016, 94, 062152.	2.1	19

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73	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. <i>Molecular Pharmaceutics</i> , 2020, 17, 3870-3884.	4.6	19
74	Site percolation on square and simple cubic lattices with extended neighborhoods and their continuum limit. <i>Physical Review E</i> , 2021, 103, 022126.	2.1	19
75	Boundary effects in a surface reaction model for CO oxidation. <i>Journal of Chemical Physics</i> , 1993, 98, 674-677.	3.0	18
76	Anchored Critical Percolation Clusters and 2D Electrostatics. <i>Physical Review Letters</i> , 2006, 97, 115702.	7.8	18
77	The critical manifolds of inhomogeneous bond percolation on bow-tie and checkerboard lattices. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2012, 45, 494005.	2.1	18
78	Elucidating structure-performance relationships in whole-cell cooperative enzyme catalysis. <i>Nature Catalysis</i> , 2019, 2, 809-819.	34.4	18
79	Flux to a trap. <i>Journal of Statistical Physics</i> , 1991, 65, 1217-1233.	1.2	17
80	Fugacity coefficients for free radicals in dense fluids: HO <sub>2</sub> in supercritical water. <i>AIChE Journal</i> , 1997, 43, 1287-1299.	3.6	17
81	Percolation in networks with voids and bottlenecks. <i>Physical Review E</i> , 2009, 79, 021118.	2.1	17
82	A new scale-invariant ratio and finite-size scaling for the stochastic susceptible-infected-recovered model. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2011, 2011, P03006.	2.3	17
83	Critical percolation clusters in seven dimensions and on a complete graph. <i>Physical Review E</i> , 2018, 97, 022107.	2.1	17
84	On Cardy's formula for the critical crossing probability in 2D percolation. <i>Journal of Physics A</i> , 1995, 28, 1249-1255.	1.6	16
85	Precise bond percolation thresholds on several four-dimensional lattices. <i>Physical Review Research</i> , 2020, 2, .	3.6	16
86	The effects of surface defects in a catalysis model. <i>Surface Science</i> , 2002, 517, 75-86.	1.9	15
87	Crossover from isotropic to directed percolation. <i>Physical Review E</i> , 2012, 86, 021102.	2.1	15
88	Renormalization group for link percolation on planar hyperbolic manifolds. <i>Physical Review E</i> , 2019, 100, 022306.	2.1	15
89	Proof of crossing formula for 2D percolation. <i>Journal of Physics A</i> , 1995, 28, 6479-6480.	1.6	14
90	Computation of nucleation at a nonequilibrium first-order phase transition using a rare-event algorithm. <i>Journal of Chemical Physics</i> , 2010, 133, 174107.	3.0	14

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91	Crossing on hyperbolic lattices. <i>Physical Review E</i> , 2012, 85, 051141.	2.1	14
92	A formula for crossing probabilities of critical systems inside polygons. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2017, 50, 064005.	2.1	14
93	Bond percolation on simple cubic lattices with extended neighborhoods. <i>Physical Review E</i> , 2020, 102, 012102.	2.1	14
94	Exact factorization of correlation functions in two-dimensional critical percolation. <i>Physical Review E</i> , 2007, 76, 041106.	2.1	13
95	Improving Dissolution Behavior and Oral Absorption of Drugs with pH-Dependent Solubility Using pH Modifiers: A Physiologically Realistic Mass Transport Analysis. <i>Molecular Pharmaceutics</i> , 2021, 18, 3326-3341.	4.6	13
96	A Molecular Dynamics Investigation of Hydrogen Bonding in Supercritical Water. <i>ACS Symposium Series</i> , 1995, , 47-64.	0.5	12
97	Harmonic Measure for Percolation and Ising Clusters Including Rare Events. <i>Physical Review Letters</i> , 2008, 101, 144102.	7.8	12
98	Site and bond percolation thresholds on regular lattices with compact extended-range neighborhoods in two and three dimensions. <i>Physical Review E</i> , 2022, 105, 024105.	2.1	12
99	General flux to a trap in one and three dimensions. <i>Journal of Physics Condensed Matter</i> , 2007, 19, 065102.	1.8	11
100	Factorization of percolation density correlation functions for clusters touching the sides of a rectangle. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2009, 2009, P02067.	2.3	11
101	The harmonic measure of diffusion-limited aggregates including rare events. <i>Europhysics Letters</i> , 2009, 87, 20001.	2.0	11
102	The barrier method: A technique for calculating very long transition times. <i>Journal of Chemical Physics</i> , 2010, 133, 124103.	3.0	11
103	Factorization of correlations in two-dimensional percolation on the plane and torus. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2011, 44, 065002.	2.1	11
104	Results for a critical threshold, the correction-to-scaling exponent and susceptibility amplitude ratio for 2d percolation. <i>Physics Procedia</i> , 2011, 15, 106-112.	1.2	11
105	Partial oxidation of methane on a nickel catalyst: Kinetic Monte-Carlo simulation study. <i>Chemical Engineering Science</i> , 2016, 147, 128-136.	3.8	11
106	REEXAMINATION OF SEVEN-DIMENSIONAL SITE PERCOLATION THRESHOLD. <i>International Journal of Modern Physics C</i> , 2000, 11, 205-209.	1.7	10
107	No-Enclave Percolation Corresponds to Holes in the Cluster Backbone. <i>Physical Review Letters</i> , 2016, 117, 185701.	7.8	10
108	Site percolation on the Penrose rhomb lattice. <i>Physica A: Statistical Mechanics and Its Applications</i> , 1999, 269, 201-210.	2.6	9

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109	Universal amplitude ratio $\hat{\nu}^+$ for two-dimensional percolation. <i>Physical Review E</i> , 2006, 74, 020101.	2.1	9
110	Getting the Jump on Explosive Percolation. <i>Science</i> , 2013, 339, 1159-1160.	12.6	9
111	Critical pore radius and transport properties of disordered hard- and overlapping-sphere models. <i>Physical Review E</i> , 2021, 104, 014127.	2.1	9
112	Self-dual Planar Hypergraphs and Exact Bond Percolation Thresholds. <i>Electronic Journal of Combinatorics</i> , 2011, 18, .	0.4	9
113	Dimer covering and percolation frustration. <i>Physical Review E</i> , 2015, 92, 032134.	2.1	8
114	Renormalization group theory of percolation on pseudofractal simplicial and cell complexes. <i>Physical Review E</i> , 2020, 102, 012308.	2.1	8
115	Jamming and percolation of dimers in restricted-valence random sequential adsorption. <i>Physical Review Research</i> , 2020, 2, .	3.6	8
116	Cluster densities at 2D critical points in rectangular geometries. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2011, 44, 385002.	2.1	7
117	Honeycomb lattices with defects. <i>Physical Review E</i> , 2016, 93, 042132.	2.1	7
118	Universal features of cluster numbers in percolation. <i>Physical Review E</i> , 2017, 96, 052119.	2.1	7
119	Effect of pore-scale heterogeneity on scale-dependent permeability: Pore network simulation and finite-size scaling analysis. <i>Water Resources Research</i> , 0, , e2021WR030664.	4.2	7
120	Dynamic behavior of the monomer-monomer surface reaction model with adsorbate interactions. <i>Journal of Chemical Physics</i> , 1997, 107, 7397-7401.	3.0	6
121	Fractal dimensions of the Q-state Potts model for complete and external hulls. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2010, 2010, P03004.	2.3	6
122	Cluster pinch-point densities in polygons. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2012, 45, 505002.	2.1	6
123	Random sequential adsorption of particles with tetrahedral symmetry. <i>Physical Review E</i> , 2019, 100, 052903.	2.1	6
124	Percolation on hypergraphs with four-edges. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2015, 48, 405004.	2.1	5
125	Exact finite-size corrections in the dimer model on a planar square lattice. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2019, 52, 335001.	2.1	5
126	Bond percolation between $k$ separated points on a square lattice. <i>Physical Review E</i> , 2020, 101, 062143.	2.1	5



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127	The density of critical percolation clusters touching the boundaries of strips and squares. Journal of Statistical Mechanics: Theory and Experiment, 2007, 2007, P06012-P06012.	2.3	4
128	Retention capacity of correlated surfaces. Physical Review E, 2014, 89, 062141.	2.1	4
129	Percolation crossing probabilities in hexagons: a numerical study. Journal of Physics A: Mathematical and Theoretical, 2015, 48, 025001.	2.1	4
130	Excess number of percolation clusters on the surface of a sphere. Physica A: Statistical Mechanics and Its Applications, 2001, 296, 1-8.	2.6	3
131	Influence of surface nano-patterning on the placement of InAs quantum dots. Journal of Applied Physics, 2018, 124, 115307.	2.5	3
132	Kinetic Monte-Carlo Simulation of Methane Steam Reforming over a Nickel Surface. Catalysts, 2019, 9, 946.	3.5	3
133	Critical percolation on the kagome hypergraph. Journal of Physics A: Mathematical and Theoretical, 2021, 54, 055006.	2.1	3
134	Site and bond percolation on four-dimensional simple hypercubic lattices with extended neighborhoods. Journal of Statistical Mechanics: Theory and Experiment, 2022, 2022, 033202.	2.3	3
135	Harmonic measure for critical Potts clusters. Physical Review E, 2009, 80, 031141.	2.1	2
136	Comparison of rigid and flexible simple point charge water models at supercritical conditions. , 1996, 17, 1757.		2
137	Summary of the In Vivo Predictive Dissolution (iPD) - Oral Drug Delivery (ODD) Conference 2018. Dissolution Technologies, 2018, 25, 50-53.	0.6	2
138	Permeation of Selected Organic Compounds Through Untreated and Barrier-Treated High-Density Polyethylene. Materials Research Society Symposia Proceedings, 1990, 215, 145.	0.1	1
139	Simple algorithm to test for linking to Wilson loops in percolation. Physical Review E, 2005, 72, 017104.	2.1	1
140	Universal correlations in percolation. Frontiers of Physics, 2020, 15, 1.	5.0	1
141	Comparison of rigid and flexible simple point charge water models at supercritical conditions. Journal of Computational Chemistry, 1996, 17, 1757-1770.	3.3	1
142	The elastic and directed percolation backbone. Journal of Physics A: Mathematical and Theoretical, 2022, 55, 244002.	2.1	1
143	Efficient Simulation of Percolation Lattices. , 2009, , 25-47.		0
144	Tricritical Point in Explosive Percolation. SSRN Electronic Journal, 0, , .	0.4	0