Richard P Sear

List of Publications by Year
in descending order

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135 papers	4,859 citations	101496 36 h-index	110317 64 g-index
140 all docs	140 docs citations	140 times ranked	4386 citing authors

#	Article	IF	Citations
1	Suppression of self-stratification in colloidal mixtures with high PÃ©clet numbers. Soft Matter, 2022, 18, 2512-2516.	1.2	9
2	10.1063/5.0074229.1. , 2022, , .		0
3	Modeling the filtration efficiency of a woven fabric: The role of multiple lengthscales. Physics of Fluids, 2022, 34, 033301.	1.6	17
4	How effective are face coverings in reducing transmission of COVID-19?. Aerosol Science and Technology, 2022, 56, 473-487.	1.5	7
5	Quantitative imaging and modeling of colloidal gelation in the coagulant dipping process. Journal of Chemical Physics, 2022, 156, .	1.2	3
6	Efficacy of face coverings in reducing transmission of COVID-19: Calculations based on models of droplet capture. Physics of Fluids, 2021, 33, 043112.	1.6	26
7	Sonocrystallisation of ZIF-8 in water with high excess of ligand: Effects of frequency, power and sonication time. Ultrasonics Sonochemistry, 2021, 76, 105616.	3.8	9
8	Diffusioosmotic and convective flows induced by a nonelectrolyte concentration gradient. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 25263-25271.	3.3	22
9	Diffusiophoresis-Driven Stratification of Polymers in Colloidal Films. ACS Macro Letters, 2020, 9, 1286-1291.	2.3	15
10	Mixing Salts and Poly(ethylene glycol) into Protein Solutions: The Effects of Diffusion across Semipermeable Membranes and of Convection. Crystal Growth and Design, 2020, 20, 3927-3936.	1.4	3
11	Diffusiophoresis in Cells: A General Nonequilibrium, Nonmotor Mechanism for the Metabolism-Dependent Transport of Particles in Cells. Physical Review Letters, 2019, 122, 128101.	2.9	39
12	A review on possible mechanisms of sonocrystallisation in solution. Ultrasonics Sonochemistry, 2019, 57, 125-138.	3.8	75
13	Development of Sodium Chloride Crystal Size during Antisolvent Crystallization under Different Sonication Modes. Crystal Growth and Design, 2019, 19, 141-149.	1.4	18
14	Stratification of mixtures in evaporating liquid films occurs only for a range of volume fractions of the smaller component. Journal of Chemical Physics, 2018, 148, 134909.	1.2	40
15	Stratification and Size Segregation of Ternary and Polydisperse Colloidal Suspensions during Drying. Langmuir, 2017, 33, 4796-4805.	1.6	45
16	Long-lived non-equilibrium interstitial solid solutions in binary mixtures. Journal of Chemical Physics, 2017, 147, 124504.	1.2	6
17	Stratification in binary colloidal polymer films: experiment and simulations. Soft Matter, 2017, 13, 6969-6980.	1.2	60
18	High-performance water-based barrier coatings for the corrosion protection of structural steel. Steel Construction, 2017, 10, 254-259.	0.4	13

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19	Diffusiophoresis in nonadsorbing polymer solutions: The Asakura-Oosawa model and stratification in drying films. Physical Review E, 2017, 96, 062602.	0.8	74
20	Controlling the crystal polymorph by exploiting the time dependence of nucleation rates. Journal of Chemical Physics, 2017, 147, 144505.	1.2	5
21	pH-Switchable Stratification of Colloidal Coatings: Surfaces â€œOn Demandâ€• ACS Applied Materials & Interfaces, 2016, 8, 34755-34761.	4.0	40
22	State between Liquid and Crystal: Locally Crystalline but with the Structure Factor of a Liquid. Crystal Growth and Design, 2016, 16, 3049-3053.	1.4	5
23	What do crystals nucleate on? What is the microscopic mechanism? How can we model nucleation?. MRS Bulletin, 2016, 41, 363-368.	1.7	15
24	Dynamic Stratification in Drying Films of Colloidal Mixtures. Physical Review Letters, 2016, 116, 118301.	2.9	105
25	Fast Assembly of Gold Nanoparticles in Large-Area 2D Nanogrids Using a One-Step, Near-Infrared Radiation-Assisted Evaporation Process. ACS Nano, 2016, 10, 2232-2242.	7.3	41
26	Life at the mesoscale: the self-organised cytoplasm and nucleoplasm. BMC Biophysics, 2015, 8, 4.	4.4	16
27	Does the Î³ Polymorph of Glycine Nucleate Faster? A Quantitative Study of Nucleation from Aqueous Solution. Crystal Growth and Design, 2015, 15, 5345-5354.	1.4	18
28	Nucleation of crystals that are mixed composites of all three polymorphs in the Gaussian core model. Journal of Chemical Physics, 2015, 142, 224505.	1.2	13
29	In vivo dynamics of skeletal muscle Dystrophin in zebrafish embryos revealed by improved FRAP analysis. ELife, 2015, 4, .	2.8	25
30	Computer simulation of epitaxial nucleation of a crystal on a crystalline surface. Journal of Chemical Physics, 2014, 140, 084504.	1.2	23
31	Nucleation of a new phase on a surface that is changing irreversibly with time. Physical Review E, 2014, 89, 022405.	0.8	6
32	Growth and Proliferation of Human Embryonic Stem Cells on Fully Synthetic Scaffolds Based on Carbon Nanotubes. ACS Applied Materials & Interfaces, 2014, 6, 2598-2603.	4.0	27
33	Primary Liver Cells Cultured on Carbon Nanotube Substrates for Liver Tissue Engineering and Drug Discovery Applications. ACS Applied Materials & Interfaces, 2014, 6, 10373-10380.	4.0	27
34	Quantitative studies of crystal nucleation at constant supersaturation: experimental data and models. CrystEngComm, 2014, 16, 6506-6522.	1.3	119
35	Estimation of the Scaling of the Nucleation Time with Volume When the Nucleation Rate Does Not Exist. Crystal Growth and Design, 2013, 13, 1329-1333.	1.4	13
36	Generalisation of Levine's prediction for the distribution of freezing temperatures of droplets: a general singular model for ice nucleation. Atmospheric Chemistry and Physics, 2013, 13, 7215-7223.	1.9	16

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37	The non-classical nucleation of crystals: microscopic mechanisms and applications to molecular crystals, ice and calcium carbonate. International Materials Reviews, 2012, 57, 328-356.	9.4	181
38	Computer simulation of soft matter at the growth front of a hard-matter phase: incorporation of polymers, formation of transient pits and growth arrest. Faraday Discussions, 2012, 159, 263.	1.6	2
39	Non-self-averaging nucleation rate due to quenched disorder. Journal of Physics Condensed Matter, 2012, 24, 052205.	0.7	9
40	In a tight corner. Nature Materials, 2011, 10, 809-810.	13.3	17
41	Aligned, isotropic and patterned carbon nanotube substrates that control the growth and alignment of Chinese hamster ovary cells. Nanotechnology, 2011, 22, 205102.	1.3	26
42	Design Principles for Broad-Spectrum Protein-Crystal Nucleants with Nanoscale Pits. Physical Review Letters, 2010, 105, 205501.	2.9	48
43	Adhesion of microorganisms to bovine submaxillary mucin coatings: effect of coating deposition conditions. Biofouling, 2010, 26, 387-397.	0.8	35
44	Cell adhesion on nanopatterned fibronectin substrates. Soft Matter, 2010, 6, 5408.	1.2	28
45	Freezing in the bulk controlled by prefreezing at a surface. Physical Review E, 2009, 80, 031605.	0.8	31
46	Nucleation via an unstable intermediate phase. Journal of Chemical Physics, 2009, 131, 074702.	1.2	27
47	Carbon-Nanotube-Based Materials for Protein Crystallization. ACS Applied Materials & Interfaces, 2009, 1, 1203-1210.	4.0	59
48	Crystallization Controlled by the Geometry of a Surface. Journal of the American Chemical Society, 2009, 131, 17550-17551.	6.6	98
49	Nucleation of a liquid on aerosol nanoparticles. Europhysics Letters, 2008, 83, 66002.	0.7	12
50	Phase separation of equilibrium polymers of proteins in living cells. Faraday Discussions, 2008, 139, 21.	1.6	16
51	Nucleation in the presence of slow microscopic dynamics. Journal of Chemical Physics, 2008, 128, 214513.	1.2	20
52	Two-step vapor-crystal nucleation close below triple point. Journal of Chemical Physics, 2008, 129, 204505.	1.2	82
53	Now You See Them. Science, 2008, 322, 1802-1803.	6.0	101
54	Continuity of the nucleation of bulk and surface phases. Journal of Chemical Physics, 2008, 129, 164510.	1.2	14

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55	Nucleation at contact lines where fluidâ€“fluid interfaces meet solid surfaces. Journal of Physics Condensed Matter, 2007, 19, 466106.	0.7	40
56	Dishevelled: a protein that functions in living cells by phase separating. Soft Matter, 2007, 3, 680.	1.2	32
57	Nucleation: theory and applications to protein solutions and colloidal suspensions. Journal of Physics Condensed Matter, 2007, 19, 033101.	0.7	310
58	Heterogeneous and Homogeneous Nucleation Compared:Â Rapid Nucleation on Microscopic Impurities. Journal of Physical Chemistry B, 2006, 110, 4985-4989.	1.2	111
59	On the Interpretation of Quantitative Experimental Data on Nucleation Rates Using Classical Nucleation Theory. Journal of Physical Chemistry B, 2006, 110, 21944-21949.	1.2	20
60	Heterogeneous Nucleation in and out of Pores. Physical Review Letters, 2006, 97, 065701.	2.9	216
61	Observations of coarsening of air voids in a polymerâ€“highly-soluble crystalline matrix during dissolution. Physical Review E, 2006, 74, 011504.	0.8	10
62	Modeling dual pathways for the metazoan spindle assembly checkpoint. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 16758-16763.	3.3	42
63	Experiment and theory for heterogeneous nucleation of protein crystals in a porous medium. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 597-601.	3.3	233
64	Formation of a metastable phase due to the presence of impurities. Journal of Physics Condensed Matter, 2005, 17, 3997-4004.	0.7	17
65	The cytoplasm of living cells: a functional mixture of thousands of components. Journal of Physics Condensed Matter, 2005, 17, S3587-S3595.	0.7	27
66	Miscibility Gap in the Microbial Fitness Landscape. Physical Review Letters, 2005, 94, 178105.	2.9	12
67	Solution stability and variability in a simple model of globular proteins. Journal of Chemical Physics, 2004, 120, 998-1005.	1.2	9
68	Statistical theory of nucleation in the presence of uncharacterized impurities. Physical Review E, 2004, 70, 021605.	0.8	18
69	Specific proteinâ€“protein binding in many-component mixtures of proteins. Physical Biology, 2004, 1, 53-60.	0.8	20
70	Highly specific proteinâ€“protein interactions, evolution and negative design. Physical Biology, 2004, 1, 166-172.	0.8	13
71	Continuous Freezing in Three Dimensions. Physical Review Letters, 2003, 90, 195701.	2.9	14
72	The effects of added salt on the second virial coefficients of the complete proteome of E. coli. Journal of Chemical Physics, 2003, 118, 5157-5161.	1.2	11

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73	Instabilities in Complex Mixtures with a Large Number of Components. Physical Review Letters, 2003, 91, 245701.	2.9	67
74	Protein crystals and charged surfaces: Interactions and heterogeneous nucleation. Physical Review E, 2003, 67, 061907.	0.8	6
75	Interfacial tension and nucleation in mixtures of colloids and long ideal polymer coils. Physical Review E, 2002, 65, 062401.	0.8	4
76	Scaling theory for the free-energy barrier to homogeneous nucleation of a noncritical phase near a critical point. Journal of Chemical Physics, 2002, 116, 2922-2927.	1.2	8
77	Phase transition analogous to Bose-Einstein condensation in systems of noninteracting surfactant aggregates. Physical Review E, 2002, 65, 031406.	0.8	17
78	Flory-Huggins theory for athermal mixtures of hard spheres and larger flexible polymers. Physical Review E, 2002, 66, 051401.	0.8	34
79	Homogeneous nucleation near a second phase transition and Ostwaldâ€™s step rule. Journal of Chemical Physics, 2002, 116, 5066.	1.2	19
80	On the electrical double layer contribution to the interfacial tension of protein crystals. Journal of Chemical Physics, 2002, 117, 8074-8079.	1.2	14
81	Heterogeneous nucleation near a metastable vapour-liquid transition: the effect of wetting transitions. Journal of Physics Condensed Matter, 2002, 14, 3693-3703.	0.7	9
82	Distribution of the second virial coefficients of globular proteins. Europhysics Letters, 2002, 60, 938-944.	0.7	7
83	Heterogeneous Nucleation near Metastable First-Order Bulk and Surface Phase Transitions. Langmuir, 2002, 18, 7571-7576.	1.6	5
84	Surface Flux Limited Diffusion of Solvent into Polymer. Macromolecules, 2001, 34, 1048-1057.	2.2	28
85	What do emulsification failure and Bose-Einstein condensation have in common?. Europhysics Letters, 2001, 55, 451-457.	0.7	13
86	Homogeneous nucleation of a noncritical phase near a continuous phase transition. Physical Review E, 2001, 63, 066105.	0.8	11
87	Nucleation of a noncritical phase in a fluid near a critical point. Journal of Chemical Physics, 2001, 114, 3170-3173.	1.2	29
88	Phase Separation in Mixtures of Colloids and Long Ideal Polymer Coils. Physical Review Letters, 2001, 86, 4696-4699.	2.9	59
89	Nucleation of the crystalline phase of proteins in the presence of semidilute nonadsorbing polymer. Journal of Chemical Physics, 2001, 115, 575-579.	1.2	5
90	Phase behavior of a model of colloidal particles with a fluctuating internal state. Physical Review E, 2000, 62, 2501-2509.	0.8	1

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91	Absence of the liquid phase when the attraction is not pairwise additive. Physical Review E, 2000, 61, 651-655.	0.8	11
92	Fluid-fluid transitions of hard spheres with a very-short-range attraction. Physical Review E, 2000, 61, 6019-6022.	0.8	7
93	Molecular dynamics of a dense fluid of polydisperse hard spheres. Journal of Chemical Physics, 2000, 113, 4732-4739.	1.2	28
94	Depletion-Induced Demixing in Polydisperse Mixtures of Hard Spheres. Physical Review Letters, 1999, 82, 4244-4247.	2.9	21
95	Adsorption of polydisperse polymer chains. Journal of Chemical Physics, 1999, 111, 2255-2258.	1.2	8
96	Classical nucleation theory for the nucleation of the solid phase of spherical particles with a short-ranged attraction. Journal of Chemical Physics, 1999, 111, 2001-2007.	1.2	16
97	Low-temperature interface between the gas and solid phases of hard spheres with a short-ranged attraction. Physical Review E, 1999, 59, 6838-6841.	0.8	8
98	Microphase separation versus the vapor-liquid transition in systems of spherical particles. Journal of Chemical Physics, 1999, 110, 4582-4588.	1.2	127
99	Phase behavior of a simple model of globular proteins. Journal of Chemical Physics, 1999, 111, 4800-4806.	1.2	169
100	Array formation in nano-colloids: Theory and experiment in 2D. Faraday Discussions, 1999, 112, 299-307.	1.6	106
101	The stability limit of the fluid phase of polydisperse sticky spheres. Molecular Physics, 1999, 96, 1013-1017.	0.8	13
102	Spontaneous patterning of quantum dots at the air-water interface. Physical Review E, 1999, 59, R6255-R6258.	0.8	171
103	The stability limit of the fluid phase of polydisperse sticky spheres. Molecular Physics, 1999, 96, 1013-1017.	0.8	2
104	Phase separation and crystallisation of polydisperse hard spheres. Europhysics Letters, 1998, 44, 531-535.	0.7	45
105	Theory for polymer coils with necklaces of micelles. Journal of Physics Condensed Matter, 1998, 10, 1677-1686.	0.7	13
106	Coil-globule transition of a semiflexible polymer driven by the addition of spherical particles. Physical Review E, 1998, 58, 724-728.	0.8	26
107	The effect of chain stiffness on the phase behaviour of isolated homopolymers. Journal of Chemical Physics, 1998, 108, 2134-2142.	1.2	81
108	Depletion driven adsorption of colloidal rods onto a hard wall. Physical Review E, 1998, 57, 1983-1989.	0.8	12

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109	Cohesion and aggregation of flexible hard rods with an attractive interaction. Physical Review E, 1997, 55, 5820-5824.	0.8	10
110	Entropy-driven phase separation in mixtures of small colloidal particles and semidilute polymers. Physical Review E, 1997, 56, 4463-4466.	0.8	39
111	Phase behavior of colloid plus polydisperse polymer mixtures. Physical Review E, 1997, 55, 1677-1681.	0.8	41
112	The coilâ€“globule transition of polymers of long rigid monomers connected by flexible spacers. Journal of Chemical Physics, 1997, 107, 7477-7482.	1.2	8
113	The liquid crystalline phase behavior of dimerizing hard spherocylinders. Journal of Chemical Physics, 1997, 106, 7315-7330.	1.2	25
114	Shape Effects in Molecular Liquids:Â Phase Equilibria of Binary Mixtures Involving Cyclic Molecules. Journal of Physical Chemistry B, 1997, 101, 11243-11248.	1.2	8
115	Phase Behavior of Mixtures of Wormlike Micelles and Mixtures of Wormlike Micelles with Small Colloidal Particles. Journal of Physical Chemistry B, 1997, 101, 4839-4844.	1.2	5
116	Phase Behaviour of Athermal Mixtures of Rigid-Rod and Flexible Polymers. Journal De Physique II, 1997, 7, 877-886.	0.9	7
117	The ring integral in a thermodynamic perturbation theory for association. Molecular Physics, 1996, 87, 517-521.	0.8	14
118	Phase behaviour of a symmetric binary mixture of hard rods. Journal of Chemical Physics, 1996, 105, 7727-7734.	1.2	17
119	Low-Density Fluid Phase of Dipolar Hard Spheres. Physical Review Letters, 1996, 76, 2310-2313.	2.9	102
120	Thermodynamic perturbation theory for association with bond cooperativity. Journal of Chemical Physics, 1996, 105, 1113-1120.	1.2	60
121	Ordering in many component Widomâ€“Rowlinson models. Journal of Chemical Physics, 1996, 104, 9948-9955.	1.2	7
122	Phase separation in mixtures of a rodlike colloid and two or more rodlike polymers. Journal of Chemical Physics, 1996, 105, 10632-10636.	1.2	2
123	RESEARCH NOTE The ring integral in a thermodynamic perturbation theory for association. Molecular Physics, 1996, 87, 517-522.	0.8	13
124	Smectic-Aand smectic-A2phases in aligned cylinders with a cylindrical attractive square well at one end. Physical Review E, 1995, 52, 3881-3891.	0.8	6
125	Theory for the phase behavior of a mixture of a rodlike colloid and a rodlike polymer. Journal of Chemical Physics, 1995, 103, 8684-8693.	1.2	44
126	Reentrant Nematic Phase in a Mixture of Associating Cylindrical Molecules. Physical Review Letters, 1995, 74, 4261-4264.	2.9	17

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127	Stability of the nematic phase of a mixture of aligned cylinders with respect to the smectic and columnar phases. Journal of Chemical Physics, 1995, 102, 2622-2627.	1.2	21
128	The gas, liquid, and solid phases of dimerizing hard spheres and hardâ€sphere dumbbells. Journal of Chemical Physics, 1995, 102, 939-946.	1.2	19
129	Theory of Phase Equilibria in Associating Systems: Chain and Ring Aggregates, Amphiphiles, and Liquid Crystals. , 1995, , 625-640.		0
130	Stability of the nematic phase of dimerizing aligned cylinders with respect to the smectic and columnar phases. Molecular Physics, 1994, 83, 961-970.	0.8	13
131	Theory and computer simulation of hard-sphere site models of ring molecules. Molecular Physics, 1994, 81, 801-811.	0.8	40
132	Thermodynamic perturbation theory for association into chains and rings. Physical Review E, 1994, 50, 386-394.	0.8	88
133	Theory for hydrogen-bonding nematic liquid crystals. Molecular Physics, 1994, 82, 473-485.	0.8	22
134	Thermodynamic perturbation theory for association into doubly bonded dimers. Molecular Physics, 1994, 82, 1033-1048.	0.8	33
135	Bonded hard-sphere theory and computer simulations of polyatomic hard-sphere models of alkanes and their derivatives. Molecular Physics, 1993, 80, 777-788.	0.8	30