C Patrick Royall

List of Publications by Year
in descending order

106 papers	4,284 citations	101543 36 h-index	114465 63 g-index
107 all docs	107 docs citations	107 times ranked	2901 citing authors

#	Article	IF	Citations
1	The role of local structure in dynamical arrest. Physics Reports, 2015, 560, 1-75.	25.6	338
2	Direct observation of a local structural mechanism for dynamic arrest. Nature Materials, 2008, 7, 556-561.	27.5	300
3	Complex Plasmas and Colloidal Dispersions. Series in Sof Condensed Matter, 2012, , .	0.1	275
4	In search of colloidal hard spheres. Soft Matter, 2013, 9, 17-27.	2.7	220
5	On measuring colloidal volume fractions. Soft Matter, 2012, 8, 21-30.	2.7	181
6	Nonequilibrium Sedimentation of Colloids on the Particle Scale. Physical Review Letters, 2007, 98, 188304.	7.8	122
7	A new colloidal model system to study long-range interactions quantitatively in real space. Journal of Physics Condensed Matter, 2003, 15, S3581-S3596.	1.8	117
8	Identification of structure in condensed matter with the topological cluster classification. Journal of Chemical Physics, 2013, 139, 234506.	3.0	112
9	First-Order Phase Transition in a Model Glass Former: Coupling of Local Structure and Dynamics. Physical Review Letters, 2012, 109, 195703.	7.8	111
10	Identification of long-lived clusters and their link to slow dynamics in a model glass former. Journal of Chemical Physics, 2013, 138, 12A535.	3.0	106
11	Re-entrant melting and freezing in a model system of charged colloids. Journal of Chemical Physics, 2006, 124, 244706.	3.0	94
12	Precise, contactless measurements of the surface tension of picolitre aerosol droplets. Chemical Science, 2016, 7, 274-285.	7.4	93
13	Structural and Dynamical Features of Multiple Metastable Glassy States in a Colloidal System with Competing Interactions. Physical Review Letters, 2010, 104, 165702.	7.8	90
14	Measuring colloidal interactions with confocal microscopy. Journal of Chemical Physics, 2007, 127, 044507.	3.0	73
15	Drying Kinetics of Salt Solution Droplets: Water Evaporation Rates and Crystallization. Journal of Physical Chemistry B, 2019, 123, 266-276.	2.6	70
16	Information-Theoretic Measurements of Coupling between Structure and Dynamics in Glass Formers. Physical Review Letters, 2014, 113, 095703.	7.8	69
17	Direct observation of hydrodynamic instabilities in a driven non-uniform colloidal dispersion. Soft Matter, 2009, 5, 1340.	2.7	64
18	Phase separation dynamics in colloidâ€“polymer mixtures: the effect of interaction range. Soft Matter, 2013, 9, 2076.	2.7	62

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19	Local structure in deeply supercooled liquids exhibits growing lengthscales and dynamical correlations. Nature Communications, 2018, 9, 3272.	12.8	61
20	Lifetimes and lengthscales of structural motifs in a model glassformer. Faraday Discussions, 2013, 167, 405.	3.2	57
21	Structure and kinetics in the freezing of nearly hard spheres. Soft Matter, 2013, 9, 297-305.	2.7	57
22	Strong geometric frustration in model glassformers. Journal of Non-Crystalline Solids, 2015, 407, 34-43.	3.1	55
23	Extended sedimentation profiles in charged colloids: the gravitational length, entropy, and electrostatics. Journal of Physics Condensed Matter, 2005, 17, 2315-2326.	1.8	52
24	Bridging length scales in colloidal liquids and interfaces from near-critical divergence to single particles. Nature Physics, 2007, 3, 636-640.	16.7	51
25	The role of fivefold symmetry in suppressing crystallization. Nature Communications, 2016, 7, 13225.	12.8	51
26	Mutual information reveals multiple structural relaxation mechanisms in a model glass former. Nature Communications, 2015, 6, 6089.	12.8	50
27	Simple models for two-dimensional tunable colloidal crystals in rotating ac electric fields. Journal of Chemical Physics, 2009, 130, 154901.	3.0	48
28	Vitrification and gelation in sticky spheres. Journal of Chemical Physics, 2018, 148, 044501.	3.0	45
29	Probing Colloidal Gels at Multiple Length Scales: The Role of Hydrodynamics. Physical Review Letters, 2015, 114, 258302.	7.8	42
30	Local structure and dynamics in colloidal fluids and gels. Europhysics Letters, 2008, 84, 46002.	2.0	40
31	Experimental Evidence for a Structural-Dynamical Transition in Trajectory Space. Physical Review Letters, 2017, 119, 028004.	7.8	40
32	Hunting mermaids in real space: known knowns, known unknowns and unknown unknowns. Soft Matter, 2018, 14, 4020-4028.	2.7	39
33	The race to the bottom: approaching the ideal glass?. Journal of Physics Condensed Matter, 2018, 30, 363001.	1.8	39
34	Crystallization of Dense Binary Hard-Sphere Mixtures with Marginal Size Ratio. Physical Review Letters, 2008, 100, 225502.	7.8	37
35	Geometric frustration in small colloidal clusters. Journal of Physics Condensed Matter, 2009, 21, 425103.	1.8	36
36	Using mutual information to measure order in model glass formers. Physical Review E, 2012, 86, 041505.	2.1	36

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37	Nonequilibrium Phase Transition in an Atomistic Glassformer: The Connection to Thermodynamics. Physical Review X, 2017, 7, .	8.9	35
38	From Glass Formation to Icosahedral Ordering by Curving Three-Dimensional Space. Physical Review Letters, 2017, 118, 215501.	7.8	33
39	Novel kinetic trapping in charged colloidal clusters due to self-induced surface charge organization. Scientific Reports, 2013, 3, 2072.	3.3	31
40	3D assessment of intervertebral disc degeneration in zebrafish identifies changes in bone density that prime disc disease. Bone Research, 2021, 9, 39.	11.4	31
41	The effect of attractions on the local structure of liquids and colloidal fluids. Journal of Chemical Physics, 2010, 133, 244901.	3.0	30
42	Controlling competition between crystallization and glass formation in binary colloids with an external field. Journal of Physics Condensed Matter, 2008, 20, 404225.	1.8	28
43	Direct measurement of osmotic pressure via adaptive confinement of quasi hard disc colloids. Nature Communications, 2013, 4, 2555.	12.8	27
44	Locally favoured structures and dynamic length scales in a simple glass-former. Journal of Statistical Mechanics: Theory and Experiment, 2017, 2017, 024001.	2.3	27
45	Investigating isomorphs with the topological cluster classification. Journal of Chemical Physics, 2013, 139, 234505.	3.0	26
46	Efficacy of face coverings in reducing transmission of COVID-19: Calculations based on models of droplet capture. Physics of Fluids, 2021, 33, 043112.	4.0	26
47	The nature of geometric frustration in the Kob-Andersen mixture. Journal of Chemical Physics, 2015, 143, 044503.	3.0	25
48	Fluid structure in colloidâ€“polymer mixtures: the competition between electrostatics and depletion. Journal of Physics Condensed Matter, 2005, 17, S3401-S3408.	1.8	24
49	A structural comparison of models of colloidâ€“polymer mixtures. Journal of Physics Condensed Matter, 2010, 22, 104119.	1.8	23
50	Direct observation in 3d of structural crossover in binary hard sphere mixtures. Journal of Chemical Physics, 2016, 144, 144506.	3.0	22
51	Crystallization Instability in Glass-Forming Mixtures. Physical Review X, 2019, 9, .	8.9	22
52	The effect of inter-cluster interactions on the structure of colloidal clusters. Journal of Non-Crystalline Solids, 2011, 357, 760-766.	3.1	21
53	Temperature as an external field for colloidâ€“polymer mixtures: â€˜quenchingâ€™ by heating and â€˜meltingâ€™ by cooling. Journal of Physics Condensed Matter, 2012, 24, 464128.	1.8	21
54	The role of quench rate in colloidal gels. Faraday Discussions, 2012, 158, 301.	3.2	21

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55	Real space analysis of colloidal gels: triumphs, challenges and future directions. Journal of Physics Condensed Matter, 2021, 33, 453002.	1.8	21
56	Coupling between criticality and gelation in â€œstickyâ€•spheres: a structural analysis. Soft Matter, 2018, 14, 5554-5564.	2.7	20
57	Novel zone formation due to interplay between sedimentation and phase ordering. Europhysics Letters, 2010, 89, 38006.	2.0	19
58	Phase separation in binary colloids with charge asymmetry. Soft Matter, 2012, 8, 11732.	2.7	19
59	Polyhedral colloidal â€˜rocksâ€™: low-dimensional networks. Soft Matter, 2012, 8, 1163-1167.	2.7	18
60	Local structure of percolating gels at very low volume fractions. Journal of Chemical Physics, 2017, 146, 014905.	3.0	18
61	Effects of vertical confinement on gelation and sedimentation of colloids. Soft Matter, 2017, 13, 3230-3239.	2.7	18
62	Modeling the filtration efficiency of a woven fabric: The role of multiple lengthscales. Physics of Fluids, 2022, 34, 033301.	4.0	17
63	C₆₀: The First One-Component Gel?. Journal of Physical Chemistry B, 2011, 115, 7288-7293.	2.6	16
64	Morphometric Approach to Many-Body Correlations in Hard Spheres. Physical Review Letters, 2019, 122, 068004.	7.8	16
65	Dynamical phase transitions and their relation to structural and thermodynamic aspects of glass physics. Journal of Chemical Physics, 2020, 153, 090901.	3.0	16
66	The effect of boundary adaptivity on hexagonal ordering and bistability in circularly confined quasi hard discs. Journal of Chemical Physics, 2014, 140, 104907.	3.0	15
67	Experimental determination of configurational entropy in a two-dimensional liquid under random pinning. Journal of Physics Condensed Matter, 2018, 30, 094003.	1.8	15
68	Drying and Crystallization of Evaporating Sodium Nitrate Aerosol Droplets. Journal of Physical Chemistry B, 2020, 124, 6024-6036.	2.6	15
69	Recasting a model atomistic glassformer as a system of icosahedra. Journal of Chemical Physics, 2015, 143, 244507.	3.0	14
70	Flexible confinement leads to multiple relaxation regimes in glassy colloidal liquids. Journal of Chemical Physics, 2015, 142, 024505.	3.0	14
71	Correlation between crystalline order and vitrification in colloidal monolayers. Journal of Physics Condensed Matter, 2015, 27, 194124.	1.8	14
72	Structural-dynamical transition in the WahnstrÃ¶m mixture. European Physical Journal E, 2018, 41, 54.	1.6	12

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73	Reversible temperature-controlled gelation in mixtures of pNIPAM microgels and non-ionic polymer surfactant. Soft Matter, 2019, 15, 8578-8588.	2.7	11
74	Direct imaging of contacts and forces in colloidal gels. Journal of Chemical Physics, 2022, 156, .	3.0	11
75	Local structure of liquidâ€“vapour interfaces. Molecular Physics, 2011, 109, 1393-1402.	1.7	10
76	Coupling of sedimentation and liquid structure: Influence on hard sphere nucleation. Journal of Chemical Physics, 2018, 149, 204506.	3.0	10
77	Competing active and passive interactions drive amoebalike crystallites and ordered bands in active colloids. Physical Review E, 2020, 102, 032609.	2.1	10
78	Drying kinetics and nucleation in evaporating sodium nitrate aerosols. Journal of Chemical Physics, 2020, 152, 074503.	3.0	10
79	Oil-in-water microfluidics on the colloidal scale: new routes to self-assembly and glassy packings. Soft Matter, 2017, 13, 788-794.	2.7	9
80	Composition inversion in mixtures of binary colloids and polymer. Journal of Chemical Physics, 2018, 148, 184902.	3.0	9
81	The devil is in the details: pentagonal bipyramids and dynamic arrest. Journal of Statistical Mechanics: Theory and Experiment, 2020, 2020, 014001.	2.3	9
82	Opposed flow focusing: evidence of a second order jetting transition. Soft Matter, 2018, 14, 8344-8351.	2.7	7
83	Communication: Is directed percolation in colloid-polymer mixtures linked to dynamic arrest?. Journal of Chemical Physics, 2018, 148, 241101.	3.0	7
84	How effective are face coverings in reducing transmission of COVID-19?. Aerosol Science and Technology, 2022, 56, 473-487.	3.1	7
85	Long-lived non-equilibrium interstitial solid solutions in binary mixtures. Journal of Chemical Physics, 2017, 147, 124504.	3.0	6
86	Anisotropic viscoelastic phase separation in polydisperse hard rods leads to nonsticky gelation. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 3415-3420.	7.1	6
87	Proteinâ€“polymer mixtures in the colloid limit: Aggregation, sedimentation, and crystallization. Journal of Chemical Physics, 2021, 155, 114901.	3.0	6
88	Charged colloidal suspensions and their link to complex plasmas. AIP Conference Proceedings, 2011, , .	0.4	5
89	Structure in sheared supercooled liquids: Dynamical rearrangements of an effective system of icosahedra. Journal of Chemical Physics, 2016, 145, 234501.	3.0	5
90	Weak temperature dependence of ageing of structural properties in atomistic model glassformers. Journal of Chemical Physics, 2017, 147, 054501.	3.0	5

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91	The rheology of confined colloidal hard disks. Journal of Chemical Physics, 2022, 156, 184902.	3.0	5
92	Structural covariance in the hard sphere fluid. Journal of Chemical Physics, 2018, 148, 204511.	3.0	4
93	Crystallisation driven by sedimentation: a particle resolved study. Journal of Statistical Mechanics: Theory and Experiment, 2016, 2016, 084004.	2.3	3
94	Devitrification of the Kob-Andersen glass former: Competition with the locally favored structure. Journal of Physics: Conference Series, 2019, 1252, 012012.	0.4	3
95	Decorated networks of native proteins: nanomaterials with tunable mesoscopic domain size. Soft Matter, 2021, 17, 6873-6883.	2.7	3
96	Direct Observation of Low-Energy Clusters in a Colloidal Gel. AIP Conference Proceedings, 2008, , .	0.4	2
97	Controlling local order of athermal self-propelled particles. Journal of Statistical Mechanics: Theory and Experiment, 2016, 2016, 124001.	2.3	2
98	Yielding of a model glass former: An interpretation with an effective system of icosahedra. Physical Review E, 2018, 97, 032609.	2.1	2
99	Kinetic crystallisation instability in liquids with short-ranged attractions. Molecular Physics, 2018, 116, 3076-3084.	1.7	2
100	Isomorphs in nanoconfined liquids. Soft Matter, 2021, 17, 8662-8677.	2.7	2
101	Crystallisation and polymorph selection in active Brownian particles. European Physical Journal E, 2021, 44, 121.	1.6	2
102	Many-body correlations from integral geometry. Physical Review E, 2019, 100, 062126.	2.1	1
103	Oxidative degradation of triblock-copolymer surfactant and its effects on self-assembly. Journal of Colloid and Interface Science, 2022, 606, 953-960.	9.4	1
104	Preface: Special Issue on Structure in Glassy and Jammed Systems. Journal of Statistical Mechanics: Theory and Experiment, 2016, 2016, 054045.	2.3	0
105	Morphological thermodynamics for hard bodies from a controlled expansion. Philosophical Magazine, 2020, 100, 2614-2635.	1.6	0
106	Response to "Comment on 'Communication: Is directed percolation in colloid-polymer mixtures linked to dynamic arrest?' " [J. Chem. Phys. 148, 241101 (2018)]. Journal of Chemical Physics, 0, , .	3.0	0