Emanuela Zaccarelli

List of Publications by Year
in descending order

159 papers	9,965 citations	38742 50 h-index	37204 96 g-index
161 all docs	161 docs citations	161 times ranked	5624 citing authors

#	Article	IF	Citations
1	Gelation of particles with short-range attraction. Nature, 2008, 453, 499-503.	27.8	811
2	Colloidal gels: equilibrium and non-equilibrium routes. Journal of Physics Condensed Matter, 2007, 19, 323101.	1.8	513
3	Phase Diagram of Patchy Colloids: Towards Empty Liquids. Physical Review Letters, 2006, 97, 168301.	7.8	482
4	Equilibrium Cluster Phases and Low-Density Arrested Disordered States: The Role of Short-Range Attraction and Long-Range Repulsion. Physical Review Letters, 2004, 93, 055701.	7.8	434
5	Higher-order glass-transition singularities in colloidal systems with attractive interactions. Physical Review E, 2000, 63, 011401.	2.1	367
6	A fresh look at the Laponite phase diagram. Soft Matter, 2011, 7, 1268.	2.7	348
7	Observation of empty liquids and equilibrium gels in a colloidal clay. Nature Materials, 2011, 10, 56-60.	27.5	307
8	Hard spheres: crystallization and glass formation. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2009, 367, 4993-5011.	3.4	191
9	The physics of protein self-assembly. Current Opinion in Colloid and Interface Science, 2016, 22, 73-79.	7.4	188
10	Ground-State Clusters for Short-Range Attractive and Long-Range Repulsive Potentials. Langmuir, 2004, 20, 10756-10763.	3.5	187
11	One-Dimensional Cluster Growth and Branching Gels in Colloidal Systems with Short-Range Depletion Attraction and Screened Electrostatic Repulsion. Journal of Physical Chemistry B, 2005, 109, 21942-21953.	2.6	179
12	Crystallization of Hard-Sphere Glasses. Physical Review Letters, 2009, 103, 135704.	7.8	174
13	Phase equilibria and glass transition in colloidal systems with short-ranged attractive interactions: Application to protein crystallization. Physical Review E, 2002, 65, 031407.	2.1	168
14	Theoretical and numerical study of the phase diagram of patchy colloids: Ordered and disordered patch arrangements. Journal of Chemical Physics, 2008, 128, 144504.	3.0	150
15	Colloidal glasses and gels: The interplay of bonding and caging. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 15203-15208.	7.1	150
16	Model for Reversible Colloidal Gelation. Physical Review Letters, 2005, 94, 218301.	7.8	143
17	Colloidal systems with competing interactions: from an arrested repulsive cluster phase to a gel. Soft Matter, 2009, 5, 2390.	2.7	143
18	Confirmation of anomalous dynamical arrest in attractive colloids: A molecular dynamics study. Physical Review E, 2002, 66, 041402.	2.1	138

#	Article	IF	Citations
19	Fluidâ€“solid transitions in soft-repulsive colloids. Soft Matter, 2013, 9, 3000.	2.7	123
20	Asymmetric caging in soft colloidal mixtures. Nature Materials, 2008, 7, 780-784.	27.5	116
21	Anomalous dynamics of intruders in a crowded environment of mobile obstacles. Nature Communications, 2016, 7, 11133.	12.8	114
22	Modeling equilibrium clusters in lysozyme solutions. Europhysics Letters, 2007, 77, 48004.	2.0	112
23	Cluster-Driven Dynamical Arrest in Concentrated Lysozyme Solutions. Journal of Physical Chemistry B, 2011, 115, 7227-7237.	2.6	108
24	Evidence of a Higher-Order Singularity in Dense Short-Ranged Attractive Colloids. Physical Review Letters, 2003, 91, 268301.	7.8	107
25	Structural Arrest in Dense Star-Polymer Solutions. Physical Review Letters, 2003, 90, 238301.	7.8	107
26	Mechanical properties of a model of attractive colloidal solutions. Physical Review E, 2001, 63, 031501.	2.1	106
27	Reversible gels of patchy particles. Current Opinion in Solid State and Materials Science, 2011, 15, 246-253.	11.5	106
28	<i>In Silico</i> Synthesis of Microgel Particles. Macromolecules, 2017, 50, 8777-8786.	4.8	105
29	Static and dynamic anomalies in a repulsive spherical ramp liquid: Theory and simulation. Physical Review E, 2005, 72, 021501.	2.1	102
30	Glassâ€“glass transition during aging of a colloidal clay. Nature Communications, 2014, 5, 4049.	12.8	101
31	Evidence for an unusual dynamical-arrest scenario in short-ranged colloidal systems. Physical Review E, 2002, 65, 050802.	2.1	99
32	On the molecular origin of the cooperative coil-to-globule transition of poly(<i>N</i>-isopropylacrylamide) in water. Physical Chemistry Chemical Physics, 2018, 20, 9997-10010.	2.8	97
33	A new look at effective interactions between microgel particles. Nature Communications, 2018, 9, 5039.	12.8	92
34	Effective interactions between soft-repulsive colloids: Experiments, theory, and simulations. Journal of Chemical Physics, 2014, 140, 094901.	3.0	91
35	Characterizing Concentrated, Multiply Scattering, and Actively Driven Fluorescent Systems with Confocal Differential Dynamic Microscopy. Physical Review Letters, 2012, 108, 218103.	7.8	90
36	Gel to glass transition in simulation of a valence-limited colloidal system. Journal of Chemical Physics, 2006, 124, 124908.	3.0	85

#	Article	IF	Citations
37	Microgels Adsorbed at Liquidâ€"Liquid Interfaces: A Joint Numerical and Experimental Study. ACS Nano, 2019, 13, 4548-4559.	14.6	84
38	Gelation as arrested phase separation in short-ranged attractive colloidâ€"polymer mixtures. Journal of Physics Condensed Matter, 2008, 20, 494242.	1.8	78
39	Competing Interactions in Arrested States of Colloidal Clays. Physical Review Letters, 2010, 104, 085701.	7.8	78
40	The microscopic role of deformation in the dynamics of soft colloids. Nature Physics, 2019, 15, 683-688.	16.7	76
41	Tailoring the Flow of Soft Glasses by Soft Additives. Physical Review Letters, 2005, 95, 268301.	7.8	68
42	Numerical modelling of non-ionic microgels: an overview. Soft Matter, 2019, 15, 1108-1119.	2.7	67
43	Starlike Micelles with Starlike Interactions: A Quantitative Evaluation of Structure Factors and Phase Diagram. Physical Review Letters, 2005, 94, 195504.	7.8	65
44	Crystallization Mechanism of Hard Sphere Glasses. Physical Review Letters, 2011, 106, 215701.	7.8	65
45	On polydispersity and the hard sphere glass transition. Soft Matter, 2015, 11, 324-330.	2.7	59
46	Is There a Reentrant Glass in Binary Mixtures?. Physical Review Letters, 2004, 92, 225703.	7.8	55
47	Equilibrium gels of limited valence colloids. Current Opinion in Colloid and Interface Science, 2017, 30, 90-96.	7.4	53
48	Gaussian density fluctuations and mode coupling theory for supercooled liquids. Europhysics Letters, 2001, 55, 157-163.	2.0	52
49	Routes to colloidal gel formation. Computer Physics Communications, 2005, 169, 166-171.	7.5	52
50	Avalanches mediate crystallization in a hard-sphere glass. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 75-80.	7.1	52
51	Effect of bond lifetime on the dynamics of a short-range attractive colloidal system. Physical Review E, 2004, 70, 041401.	2.1	47
52	How fluorescent labelling alters the solution behaviour of proteins. Physical Chemistry Chemical Physics, 2015, 17, 31177-31187.	2.8	47
53	Connecting Elasticity and Effective Interactions of Neutral Microgels: The Validity of the Hertzian Model. Macromolecules, 2019, 52, 4895-4906.	4.8	47
54	Multiple Glass Transitions in Star Polymer Mixtures: Insights from Theory and Simulations. Macromolecules, 2009, 42, 423-434.	4.8	46

#	Article	IF	Citations
55	Dynamic phase diagram of soft nanocolloids. Nanoscale, 2015, 7, 13924-13934.	5.6	46
56	Energy Landscape of a Simple Model for Strong Liquids. Physical Review Letters, 2005, 95, 157802.	7.8	45
57	Ultrasoft Colloid-Polymer Mixtures: Structure and Phase Diagram. Physical Review Letters, 2011, 106, 228301.	7.8	44
58	Modeling Microgels with a Controlled Structure across the Volume Phase Transition. Macromolecules, 2019, 52, 7584-7592.	4.8	44
59	Gravitational collapse of depletion-induced colloidal gels. Soft Matter, 2016, 12, 4300-4308.	2.7	43
60	A molecular dynamics study of chemical gelation in a patchy particle model. Soft Matter, 2008, 4, 1173.	2.7	42
61	Activated Bond-Breaking Processes Preempt the Observation of a Sharp Glass-Glass Transition in Dense Short-Ranged Attractive Colloids. Physical Review Letters, 2003, 91, 108301.	7.8	40
62	Structural and microscopic relaxations in a colloidal glass. Soft Matter, 2015, 11, 466-471.	2.7	39
63	Viscoelasticity and Stokes-Einstein relation in repulsive and attractive colloidal glasses. Journal of Chemical Physics, 2007, 127, 144906.	3.0	37
64	Asymmetric poly(ethylene-alt-propylene)-poly(ethylene oxide) micelles: A system with starlike morphology and interactions. Physical Review E, 2007, 76, 041503.	2.1	37
65	Connecting Irreversible to Reversible Aggregation: Time and Temperature. Journal of Physical Chemistry B, 2009, 113, 1233-1236.	2.6	37
66	A Colloid Approach to Self-Assembling Antibodies. Molecular Pharmaceutics, 2019, 16, 2394-2404.	4.6	36
67	Universality class of the motility-induced critical point in large scale off-lattice simulations of active particles. Soft Matter, 2021, 17, 3807-3812.	2.7	36
68	Casimir-like forces at the percolation transition. Nature Communications, 2014, 5, 3267.	12.8	35
69	Validity of the Stokes-Einstein Relation in Soft Colloids up to the Glass Transition. Physical Review Letters, 2015, 115, 128302.	7.8	35
70	Aging in short-ranged attractive colloids: A numerical study. Journal of Chemical Physics, 2004, 120, 8824-8830.	3.0	32
71	Small-Angle X-ray Scattering and Light Scattering on Lysozyme and Sodium Glycocholate Micelles. Journal of Physical Chemistry B, 2005, 109, 23857-23869.	2.6	32
72	On the Role of Competing Interactions in Charged Colloids with Short-Range Attraction. Annual Review of Condensed Matter Physics, 2021, 12, 51-70.	14.5	32

#	Article	IF	Citations
73	Kinetic Arrest Originating in Competition Between Attractive Interaction and Packing Force. Journal of Statistical Physics, 2000, 100, 363-376.	1.2	31
74	How soft repulsion enhances the depletion mechanism. Soft Matter, 2015, 11, 692-700.	2.7	31
75	Modelling realistic microgels in an explicit solvent. Scientific Reports, 2018, 8, 14426.	3.3	31
76	Crystal-to-Crystal Transition of Ultrasoft Colloids under Shear. Physical Review Letters, 2018, 120, 078003.	7.8	29
77	Evidence of a low-temperature dynamical transition in concentrated microgels. Science Advances, 2018, 4, eaat5895.	10.3	28
78	Effect of Internal Architecture on the Assembly of Soft Particles at Fluid Interfaces. ACS Nano, 2021, 15, 13105-13117.	14.6	28
79	Numerical Investigation of Glassy Dynamics in Low-Density Systems. Physical Review Letters, 2008, 100, 195701.	7.8	27
80	From compact to fractal crystalline clusters in concentrated systems of monodisperse hard spheres. Soft Matter, 2012, 8, 4960.	2.7	27
81	Molecular description of the coil-to-globule transition of Poly(N-isopropylacrylamide) in water/ethanol mixture at low alcohol concentration. Journal of Molecular Liquids, 2020, 297, 111928.	4.9	27
82	Disconnected Glass-Glass Transitions and Diffusion Anomalies in a Model with Two Repulsive Length Scales. Physical Review Letters, 2010, 104, 145701.	7.8	26
83	Modeling the Crossover between Chemically and Diffusion-Controlled Irreversible Aggregation in a Small-Functionality Gel-Forming System. Journal of Physical Chemistry B, 2010, 114, 3769-3775.	2.6	26
84	Internal structure and swelling behaviour of<i>in silico</i>microgel particles. Journal of Physics Condensed Matter, 2018, 30, 044001.	1.8	26
85	Effect of Chain Polydispersity on the Elasticity of Disordered Polymer Networks. Macromolecules, 2021, 54, 3769-3779.	4.8	26
86	Static and dynamical correlation functions behaviour in attractive colloidal systems from theory and simulation. Journal of Physics Condensed Matter, 2003, 15, S367-S374.	1.8	25
87	Two-step deswelling in the Volume Phase Transition of thermoresponsive microgels. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.1	25
88	Viscoelastic properties of attractive and repulsive colloidal glasses. Journal of Physics Condensed Matter, 2005, 17, L271-L277.	1.8	24
89	Non-Gaussian energy landscape of a simple model for strong network-forming liquids: Accurate evaluation of the configurational entropy. Journal of Chemical Physics, 2006, 124, 204509.	3.0	24
90	How properties of interacting depletant particles control aggregation of hard-sphere colloids. Soft Matter, 2012, 8, 1991-1996.	2.7	24

#	Article	IF	Citations
91	On the effect of the thermostat in non-equilibrium molecular dynamics simulations. European Physical Journal E, 2018, 41, 80.	1.6	24
92	Gellan Gum Microgels as Effective Agents for a Rapid Cleaning of Paper. ACS Applied Polymer Materials, 2020, 2, 2791-2801.	4.4	24
93	Waterâ€“Polymer Coupling Induces a Dynamical Transition in Microgels. Journal of Physical Chemistry Letters, 2019, 10, 870-876.	4.6	23
94	Numerical study of theglassâ€“glasstransition in short-ranged attractive colloids. Journal of Physics Condensed Matter, 2004, 16, S4849-S4860.	1.8	22
95	Correlation between structure and rheology of a model colloidal glass. Journal of Chemical Physics, 2009, 131, 144903.	3.0	22
96	Microgels at Interfaces Behave as 2D Elastic Particles Featuring Reentrant Dynamics. Physical Review X, 2020, 10, .	8.9	22
97	The nature of the colloidal â€˜glassâ€™ transition. Faraday Discussions, 2003, 123, 13-26.	3.2	21
98	A spherical model with directional interactions. I. Static properties. Journal of Chemical Physics, 2007, 127, 174501.	3.0	21
99	Soft heaps and clumpy crystals. Nature, 2013, 493, 30-31.	27.8	21
100	Mode-coupling theory of colloids with short-range attractions. Journal of Physics Condensed Matter, 2001, 13, 9113-9126.	1.8	20
101	Dynamics of supercooled liquids: density fluctuations and mode coupling theory. Journal of Physics Condensed Matter, 2002, 14, 2413-2437.	1.8	20
102	Dynamical and structural signatures of the glass transition in emulsions. Journal of Statistical Mechanics: Theory and Experiment, 2016, 2016, 094003.	2.3	20
103	The Asakuraâ€“Oosawa theory: Entropic forces in physics, biology, and soft matter. Journal of Chemical Physics, 2022, 156, 080401.	3.0	19
104	In-situ study of the impact of temperature and architecture on the interfacial structure of microgels. Nature Communications, 2022, 13, .	12.8	19
105	Interaction between charged colloids in a low dielectric constant solvent. Europhysics Letters, 2007, 78, 38002.	2.0	18
106	Rheological transitions in asymmetric colloidal star mixtures. Rheologica Acta, 2007, 46, 611-619.	2.4	18
107	Crystallization and aging in hard-sphere glasses. Journal of Physics Condensed Matter, 2011, 23, 194117.	1.8	18
108	Tuning the rheological behavior of colloidal gels through competing interactions. Physical Review Materials, 2020, 4, .	2.4	18

#	Article	IF	Citations
109	Unveiling the complex glassy dynamics of square shoulder systems: Simulations and theory. Journal of Chemical Physics, 2013, 138, 134501.	3.0	17
110	Multiple Glass Singularities and Isodynamics in a Core-Softened Model for Glass-Forming Systems. Physical Review Letters, 2014, 113, 258302.	7.8	17
111	From caging to Rouse dynamics in polymer melts with intramolecular barriers: A critical test of the mode coupling theory. Journal of Chemical Physics, 2011, 134, 024523.	3.0	16
112	Dynamical arrest in dense short-ranged attractive colloids. Journal of Physics Condensed Matter, 2004, 16, S3791-S3806.	1.8	15
113	Universality behaviour in â€˜idealâ€™ dynamical arrest transitions of a lattice glass model. Physica A: Statistical Mechanics and Its Applications, 2002, 316, 115-134.	2.6	14
114	Competition between crystallization and glassification for particles with short-ranged attraction. Possible applications to protein crystallization. Physica A: Statistical Mechanics and Its Applications, 2002, 314, 539-547.	2.6	14
115	Tuning effective interactions close to the critical point in colloidal suspensions. Journal of Chemical Physics, 2012, 137, 084903.	3.0	14
116	Different scenarios of dynamic coupling in glassy colloidal mixtures. Physical Chemistry Chemical Physics, 2018, 20, 18630-18638.	2.8	14
117	Numerical insights on ionic microgels: structure and swelling behaviour. Soft Matter, 2019, 15, 8113-8128.	2.7	13
118	Short-ranged attractive colloids: What is the gel state?. , 2004, , 181-194.		13
119	Molecular insights on poly(<i>N</i>-isopropylacrylamide) coil-to-globule transition induced by pressure. Physical Chemistry Chemical Physics, 2021, 23, 5984-5991.	2.8	12
120	Critical active dynamics is captured by a colored-noise driven field theory. Communications Physics, 2022, 5, .	5.3	12
121	Glass and Jamming Rheology in Soft Particles Made of PNIPAM and Polyacrylic Acid. International Journal of Molecular Sciences, 2021, 22, 4032.	4.1	11
122	Volume fraction determination of microgel composed of interpenetrating polymer networks of PNIPAM and polyacrylic acid. Journal of Physics Condensed Matter, 2021, 33, 174004.	1.8	11
123	Slowed relaxational dynamics beyond the fluctuationâ€“dissipation theorem. Physica A: Statistical Mechanics and Its Applications, 2002, 307, 15-26.	2.6	10
124	Effective potentials induced by self-assembly of patchy particles. Soft Matter, 2017, 13, 6051-6058.	2.7	10
125	Mode-coupling theory predictions for a limited valency attractive square well model. Journal of Physics Condensed Matter, 2006, 18, S2373-S2382.	1.8	9
126	Chain dynamics in nonentangled polymer melts: A first-principle approach for the role of intramolecular barriers. Soft Matter, 2011, 7, 1364.	2.7	9

#	Article	IF	Citations
127	Rheological investigation of gels formed by competing interactions: A numerical study. Journal of Chemical Physics, 2019, 150, 024905.	3.0	9
128	Thermoresponsivity of poly(N-isopropylacrylamide) microgels in water-trehalose solution and its relation to protein behavior. Journal of Colloid and Interface Science, 2021, 604, 705-718.	9.4	9
129	Modeling Solution Behavior of Poly(<i>N</i>-isopropylacrylamide): A Comparison between Water Models. Journal of Physical Chemistry B, 2022, 126, 3778-3788.	2.6	9
130	Ideal glass in attractive systems with different potentials. Journal of Physics Condensed Matter, 2002, 14, 2223-2235.	1.8	8
131	Exposing a dynamical signature of the freezing transition through the sound propagation gap. Nature Communications, 2014, 5, 5503.	12.8	8
132	A parameter-free description of the kinetics of formation of loop-less branched structures and gels. Soft Matter, 2009, , .	2.7	7
133	Silica through the eyes of colloidal modelsâ€”when glass is a gel. Journal of Physics Condensed Matter, 2011, 23, 285101.	1.8	7
134	Atomic scale investigation of the volume phase transition in concentrated PNIPAM microgels. Journal of Chemical Physics, 2020, 152, 204904.	3.0	7
135	Gel Formation in Reversibly Cross-Linking Polymers. Macromolecules, 2021, 54, 6613-6627.	4.8	7
136	Binary mixtures of sticky spheres using Percus-Yevick theory. , 2000, , 371-375.		6
137	Proteinlike dynamical transition of hydrated polymer chains. Physical Review Research, 2021, 3, .	3.6	6
138	Static and dynamic properties of block copolymer based grafted nanoparticles across the non-ergodicity transition. Physics of Fluids, 2020, 32, 127101.	4.0	6
139	Link between Morphology, Structure, and Interactions of Composite Microgels. Macromolecules, 2022, 55, 1834-1843.	4.8	6
140	A spherical model with directional interactions: II. Dynamics and landscape properties. Journal of Physics Condensed Matter, 2010, 22, 104110.	1.8	5
141	Patchy Particle Models to Understand Protein Phase Behavior. Methods in Molecular Biology, 2019, 2039, 187-208.	0.9	5
142	Multi-particle collision dynamics for a coarse-grained model of soft colloids. Journal of Chemical Physics, 2019, 151, 074902.	3.0	5
143	Charge affinity and solvent effects in numerical simulations of ionic microgels. Journal of Physics Condensed Matter, 2021, 33, 084001.	1.8	5
144	Onset of criticality in hyper-auxetic polymer networks. Nature Communications, 2022, 13, 527.	12.8	5

#	Article	IF	Citations
145	Soft colloids for complex interfacial assemblies. Proceedings of the National Academy of Sciences of the United States of America, 2022, 119, e2122051119.	7.1	5
146	Interaction between charged colloids in a low dielectric constant solvent. Europhysics Letters, 2008, 81, 59901.	2.0	4
147	Observation of empty liquids and equilibrium gels in a colloidal clay. , 2013, , .		4
148	Crowding in the Eye Lens: Modeling the Multisubunit Protein Î²-Crystallin with a Colloidal Approach. Biophysical Journal, 2020, 119, 2483-2496.	0.5	4
149	Effective potentials induced by mixtures of patchy and hard co-solutes. Journal of Chemical Physics, 2021, 155, 064901.	3.0	4
150	The role of polymer structure on water confinement in poly(N-isopropylacrylamide) dispersions. Journal of Molecular Liquids, 2022, 355, 118924.	4.9	4
151	Discontinous change from thermally- to geometrically-dominated effective interactions in colloidal solutions. Soft Matter, 2016, 12, 9649-9656.	2.7	3
152	Dynamical properties of different models of elastic polymer rings: Confirming the link between deformation and fragility. Journal of Chemical Physics, 2021, 154, 154901.	3.0	3
153	Impact of the Environment on the PNIPAM Dynamical Transition Probed by Elastic Neutron Scattering. Macromolecules, 0, , .	4.8	3
154	Crystallization and aging in hard-sphere glasses. Journal of Physics Condensed Matter, 2011, 23, 319501.	1.8	2
155	Coincidence of the freezing and the onset of caging in hard sphere and Lennard-Jones fluids. Journal of Chemical Physics, 2019, 151, 104501.	3.0	2
156	Are particle gels â€œglassesâ€?. , 2001, , 221-225.		2
157	The vibrational motions of particle gels. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2001, 183-185, 327-334.	4.7	1
158	Interactions in systems with short-range attractions and applications to protein crystallisation. , 0, , 104-109.		1
159	A mean-field theory of super-cooled liquids. AIP Conference Proceedings, 2001, , .	0.4	0