John C Crocker

List of Publications by Year
in descending order

89 papers	13,507 citations	53794 45 h-index	46799 89 g-index
90 all docs	90 docs citations	90 times ranked	10626 citing authors

#	Article	IF	Citations
1	Probing lipid membrane bending mechanics using gold nanorod tracking. Physical Review Research, 2022, 4, .	3.6	4
2	Measuring Cytoskeletal Mechanical Fluctuations and Rheology with Active Micropost Arrays. Current Protocols, 2022, 2, .	2.9	2
3	Interfacial Flow around Brownian Colloids. Physical Review Letters, 2021, 126, 228003.	7.8	14
4	Shear-driven rolling of DNA-adhesive microspheres. Biophysical Journal, 2021, 120, 2102-2111.	0.5	3
5	Pervasive cytoquakes in the actomyosin cortex across cell types and substrate stiffness. Integrative Biology (United Kingdom), 2021, 13, 246-257.	1.3	3
6	Interfacial microrheology and tensiometry in a miniature, 3-d printed Langmuir trough. Journal of Colloid and Interface Science, 2020, 560, 407-415.	9.4	6
7	Elusive photonic crystals come a step closer. Nature, 2020, 585, 506-507.	27.8	10
8	Particle tracking of nanoparticles in soft matter. Journal of Applied Physics, 2020, 127, .	2.5	51
9	Hydrodynamic and frictional modulation of deformations in switchable colloidal crystallites. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 12700-12706.	7.1	4
10	Dissecting fat-tailed fluctuations in the cytoskeleton with active micropost arrays. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 13839-13846.	7.1	15
11	Nanoscale Rheology and Anisotropic Diffusion Using Single Gold Nanorod Probes. Physical Review Letters, 2018, 120, 118002.	7.8	34
12	Deposition of sticky spheres in channel flow: Modeling of surface coverage evolution requires accurate sphere-sphere collision hydrodynamics. Journal of Colloid and Interface Science, 2018, 530, 383-393.	9.4	13
13	Colloidal crystals with diamond symmetry at optical lengthscales. Nature Communications, 2017, 8, 14173.	12.8	83
14	Directed assembly of particles using directional DNA interactions. Current Opinion in Colloid and Interface Science, 2017, 30, 34-44.	7.4	26
15	Dimpled Polyhedral Colloids Formed by Colloidal Crystal Templating. Langmuir, 2017, 33, 3080-3087.	3.5	10
16	Interaction Heterogeneity can Favorably Impact Colloidal Crystal Nucleation. Physical Review Letters, 2017, 119, 178002.	7.8	6
17	Self-assembly with colloidal clusters: facile crystal design using connectivity landscape analysis. Soft Matter, 2017, 13, 7098-7105.	2.7	12
18	Shape changing thin films powered by DNA hybridization. Nature Nanotechnology, 2017, 12, 41-47.	31.5	51

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19	Colloidal Cluster Assembly into Ordered Superstructures via Engineered Directional Binding. ACS Nano, 2016, 10, 11280-11289.	14.6	39
20	Tuning the Mechanical Properties of Recombinant Protein-Stabilized Gas Bubbles Using Triblock Copolymers. ACS Macro Letters, 2016, 5, 371-376.	4.8	8
21	Understanding soft glassy materials using an energy landscape approach. Nature Materials, 2016, 15, 1031-1036.	27.5	38
22	Motile Human Neutrophils Sense Ligand Density Over Their Entire Contact Area. Annals of Biomedical Engineering, 2016, 44, 886-894.	2.5	6
23	Affine and nonaffine motions in sheared polydisperse emulsions. Physical Review E, 2015, 91, 010301.	2.1	17
24	Interaction potentials from arbitrary multi-particle trajectory data. Soft Matter, 2015, 11, 6948-6956.	2.7	7
25	Interactions and Stress Relaxation in Monolayers of Soft Nanoparticles at Fluid-Fluid Interfaces. Physical Review Letters, 2015, 114, 108301.	7.8	58
26	Crystal-Templated Colloidal Clusters Exhibit Directional DNA Interactions. ACS Nano, 2015, 9, 10817-10825.	14.6	38
27	Protrusive and Contractile Forces of Spreading Human Neutrophils. Biophysical Journal, 2015, 109, 699-709.	0.5	21
28	Hydrodynamics selects the pathway for displacive transformations in DNA-linked colloidal crystallites. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 4803-4808.	7.1	36
29	A tunable line optical tweezers instrument with nanometer spatial resolution. Review of Scientific Instruments, 2014, 85, 043704.	1.3	11
30	Ligand density elicits a phenotypic switch in human neutrophils. Integrative Biology (United Kingdom), 2014, 6, 348-356.	1.3	22
31	Assembling colloidal clusters using crystalline templates and reprogrammable DNA interactions. Soft Matter, 2013, 9, 9119.	2.7	46
32	Kinetics and non-exponential binding of DNA-coated colloids. Soft Matter, 2013, 9, 6412.	2.7	33
33	Fibronectin Induces Beta2-Integrin-Mediated Neutrophil Haptokinesis Independent of Chemoattractant. Biophysical Journal, 2013, 104, 320a.	0.5	0
34	Responsive Multidomain Free-Standing Films of Gold Nanoparticles Assembled by DNA-Directed Layer-by-Layer Approach. Nano Letters, 2013, 13, 4449-4455.	9.1	50
35	Coarse-grained Monte Carlo simulations of non-equilibrium systems. Journal of Chemical Physics, 2013, 138, 244111.	3.0	6
36	Driving diffusionless transformations in colloidal crystals using DNA handshaking. Nature Communications, 2012, 3, 1209.	12.8	110

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37	Reply to Mognetti et al.: DNA handshaking interaction data are well described by mean-field and molecular models. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, .	7.1	14
38	Nanoparticles at fluid interfaces: Exploiting capping ligands to control adsorption, stability and dynamics. Journal of Colloid and Interface Science, 2012, 387, 1-11.	9.4	171
39	Forced Desorption of Nanoparticles from an Oilâ€“Water Interface. Langmuir, 2012, 28, 1663-1667.	3.5	87
40	Effects of membrane rheology on leuko-polymersome adhesion to inflammatory ligands. Soft Matter, 2011, 7, 769-779.	2.7	18
41	A mechanistic view of binary colloidal superlattice formation using DNA-directed interactions. Soft Matter, 2011, 7, 1912.	2.7	59
42	Direct measurements of DNA-mediated colloidal interactions and their quantitative modeling. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 15687-15692.	7.1	155
43	Rheology of Soft Materials. Annual Review of Condensed Matter Physics, 2010, 1, 301-322.	14.5	305
44	Turning Away from High Symmetry. Science, 2010, 327, 535-536.	12.6	15
45	Computational analysis of binary segregation during colloidal crystallization with DNA-mediated interactions. Journal of Chemical Physics, 2010, 132, 234705.	3.0	35
46	Producing Monodisperse Drug-Loaded Polymer Microspheres via Cross-Flow Membrane Emulsification: The Effects of Polymers and Surfactants. Langmuir, 2010, 26, 14479-14487.	3.5	14
47	Universal Dripping and Jetting in a Transverse Shear Flow. Physical Review Letters, 2009, 102, 194501.	7.8	15
48	Probing interfacial equilibration in microsphere crystals formed by DNA-directed assembly. Nature Materials, 2009, 8, 52-55.	27.5	83
49	Cell Mechanics: Dissecting the Physical Responses of Cells to Force. Annual Review of Biomedical Engineering, 2009, 11, 259-288.	12.3	277
50	Golden handshake. Nature, 2008, 451, 528-529.	27.8	51
51	Long-Time Stretched Exponential Kinetics in Single DNA Duplex Dissociation. Biophysical Journal, 2008, 94, 891-896.	0.5	18
52	Short- and long-range correlated motion observed in colloidal glasses and liquids. Journal of Physics Condensed Matter, 2007, 19, 205131.	1.8	69
53	Fragility and mechanosensing in a thermalized cytoskeleton model with forced protein unfolding. Physical Review E, 2007, 76, 051906.	2.1	11
54	DNA-Mediated Phase Behavior of Microsphere Suspensions. Langmuir, 2007, 23, 2688-2693.	3.5	43

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55	Mechanics of Single Cells: Rheology, Time Dependence, and Fluctuations. Biophysical Journal, 2007, 93, 3703-3713.	0.5	94
56	Multipleâ€Particle Tracking and Twoâ€Point Microrheology in Cells. Methods in Cell Biology, 2007, 83, 141-178.	1.1	169
57	Highâ€Throughput Synthesis of Anisotropic Colloids via Holographic Lithography. Advanced Materials, 2007, 19, 2508-2512.	21.0	40
58	Line optical tweezers instrument for measuring nanoscale interactions and kinetics. Review of Scientific Instruments, 2006, 77, 113702.	1.3	60
59	Prestressed F-actin networks cross-linked by hinged filamins replicate mechanical properties of cells. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 1762-1767.	7.1	355
60	The Role of F-Actin and Myosin in Epithelial Cell Rheology. Biophysical Journal, 2006, 91, 3946-3956.	0.5	96
61	Evidence for the role of cell stiffness in modulation of volume-regulated anion channels. Acta Physiologica, 2006, 187, 285-294.	3.8	29
62	Engineering DNA-Mediated Colloidal Crystallization. Langmuir, 2006, 22, 1991-2001.	3.5	155
63	The consensus mechanics of cultured mammalian cells. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 10259-10264.	7.1	344
64	Microrheology Probes Length Scale Dependent Rheology. Physical Review Letters, 2006, 96, 118104.	7.8	177
65	Stress-Dependent Elasticity of Composite Actin Networks as a Model for Cell Behavior. Physical Review Letters, 2006, 96, 088102.	7.8	130
66	Colloidal Interactions and Self-Assembly Using DNA Hybridization. Physical Review Letters, 2005, 94, 058302.	7.8	295
67	Reversible self-assembly and directed assembly of DNA-linked micrometer-sized colloids. Proceedings of the National Academy of Sciences of the United States of America, 2005, 102, 4225-4229.	7.1	223
68	Role of configurational entropy in the thermodynamics of clusters of point defects in crystalline solids. Physical Review B, 2005, 72, .	3.2	40
69	Swelling-Based Method for Preparing Stable, Functionalized Polymer Colloids. Journal of the American Chemical Society, 2005, 127, 1592-1593.	13.7	86
70	DNA-Driven Assembly of Bidisperse, Micron-Sized Colloids. Langmuir, 2003, 19, 10317-10323.	3.5	115
71	Microrheology, Stress Fluctuations, and Active Behavior of Living Cells. Physical Review Letters, 2003, 91, 198101.	7.8	370
72	Rheological Microscopy: Local Mechanical Properties from Microrheology. Physical Review Letters, 2003, 90, 108301.	7.8	183

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73	Microrheology of Entangled F-Actin Solutions. Physical Review Letters, 2003, 91, 158302.	7.8	291
74	Microrheology of polyethylene oxide using diffusing wave spectroscopy and single scattering. Physical Review E, 2002, 65, 051505.	2.1	236
75	Colloidal Interactions in Suspensions of Rods. Physical Review Letters, 2001, 87, 088301.	7.8	96
76	Entropically Driven Colloidal Crystallization on Patterned Surfaces. Physical Review Letters, 2000, 85, 1770-1773.	7.8	268
77	Comment on â€œMonte Carlo study of structural ordering in charged colloids using a long-range attractive interactionâ€• Physical Review E, 2000, 61, 980-982.	2.1	24
78	Three-Dimensional Direct Imaging of Structural Relaxation Near the Colloidal Glass Transition. Science, 2000, 287, 627-631.	12.6	1,608
79	Attractions between Hard Colloidal Spheres in Semiflexible Polymer Solutions. Macromolecules, 2000, 33, 177-186.	4.8	93
80	Two-Point Microrheology of Inhomogeneous Soft Materials. Physical Review Letters, 2000, 85, 888-891.	7.8	581
81	Entropic Attraction and Repulsion in Binary Colloids Probed with a Line Optical Tweezer. Physical Review Letters, 1999, 82, 4352-4355.	7.8	359
82	Self-assembly of colloidal crystals. Current Opinion in Colloid and Interface Science, 1998, 3, 5-11.	7.4	128
83	Entropic Colloidal Interactions in Concentrated DNA Solutions. Physical Review Letters, 1998, 81, 4004-4007.	7.8	213
84	Interactions and Dynamics in Charge-Stabilized Colloids. MRS Bulletin, 1998, 23, 24-31.	3.5	64
85	Measurement of the hydrodynamic corrections to the Brownian motion of two colloidal spheres. Journal of Chemical Physics, 1997, 106, 2837-2840.	3.0	133
86	When Like Charges Attract: The Effects of Geometrical Confinement on Long-Range Colloidal Interactions. Physical Review Letters, 1996, 77, 1897-1900.	7.8	428
87	Methods of Digital Video Microscopy for Colloidal Studies. Journal of Colloid and Interface Science, 1996, 179, 298-310.	9.4	3,190
88	Origin of Stratification in Creaming Emulsions. Physical Review Letters, 1996, 77, 578-581.	7.8	31
89	Microscopic measurement of the pair interaction potential of charge-stabilized colloid. Physical Review Letters, 1994, 73, 352-355.	7.8	460