Michael J Solomon

List of Publications by Year
in descending order

110 papers	7,662 citations	71061 41 h-index	51562 86 g-index
113 all docs	113 docs citations	113 times ranked	8419 citing authors

#	Article	IF	Citations
1	Anisotropy of building blocks and their assembly into complex structures. Nature Materials, 2007, 6, 557-562.	13.3	2,440
2	Rheology of Polypropylene/Clay Hybrid Materials. Macromolecules, 2001, 34, 1864-1872.	2.2	613
3	Microstructural regimes of colloidal rod suspensions, gels, and glasses. Soft Matter, 2010, 6, 1391.	1.2	248
4	Fundamentals of magnet-actuated droplet manipulation on an open hydrophobic surface. Lab on A Chip, 2009, 9, 1567.	3.1	178
5	Structure and dynamics of colloidal depletion gels: Coincidence of transitions and heterogeneity. Physical Review E, 2006, 74, 041403.	0.8	151
6	Direct Visualization of Colloidal Rod Assembly by Confocal Microscopy. Langmuir, 2005, 21, 5298-5306.	1.6	139
7	Actuation of shape-memory colloidal fibres of Janus ellipsoids. Nature Materials, 2015, 14, 117-124.	13.3	136
8	Role of isostaticity and load-bearing microstructure in the elasticity of yielded colloidal gels. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 16029-16034.	3.3	132
9	Extracellular <scp>DNA</scp> facilitates the formation of functional amyloids in <scp>S</scp>taphylococcus aureus biofilms. Molecular Microbiology, 2016, 99, 123-134.	1.2	109
10	A constitutive model for the prediction of ellipsoidal droplet shapes and stresses in immiscible blends. Journal of Rheology, 2000, 44, 1055-1083.	1.3	105
11	Shear-Induced Microstructural Evolution of a Thermoreversible Colloidal Gel. Langmuir, 2001, 17, 2918-2929.	1.6	104
12	Flexible Microfluidic Device for Mechanical Property Characterization of Soft Viscoelastic Solids Such as Bacterial Biofilms. Langmuir, 2009, 25, 7743-7751.	1.6	103
13	Universal scaling for polymer chain scission in turbulence. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 16660-16665.	3.3	99
14	Rheological State Diagrams for Rough Colloids in Shear Flow. Physical Review Letters, 2017, 119, 158001.	2.9	93
15	Colloidal gel elasticity arises from the packing of locally glassy clusters. Nature Communications, 2019, 10, 2237.	5.8	88
16	Probe size effects on the microrheology of associating polymer solutions. Physical Review E, 2002, 66, 061504.	0.8	87
17	Translational and rotational dynamics of colloidal rods by direct visualization with confocal microscopy. Journal of Colloid and Interface Science, 2007, 314, 98-106.	5.0	86
18	Effect of Monomer Geometry on the Fractal Structure of Colloidal Rod Aggregates. Physical Review Letters, 2004, 92, 155503.	2.9	85

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19	Orientation and rupture of fractal colloidal gels during start-up of steady shear flow. Journal of Rheology, 2005, 49, 657-681.	1.3	85
20	Direct Visualization of Long-Range Heterogeneous Structure in Dense Colloidal Gels. Langmuir, 2003, 19, 509-512.	1.6	83
21	In siturheology of Staphylococcus epidermidis bacterial biofilms. Soft Matter, 2013, 9, 122-131.	1.2	82
22	Directions for targeted self-assembly of anisotropic colloids from statistical thermodynamics. Current Opinion in Colloid and Interface Science, 2011, 16, 158-167.	3.4	79
23	Rheology and dynamics of particles in viscoelastic media. Current Opinion in Colloid and Interface Science, 2001, 6, 430-437.	3.4	75
24	Liquid Crystal Order in Colloidal Suspensions of Spheroidal Particles by Direct Current Electric Field Assembly. Small, 2012, 8, 1551-1562.	5.2	71
25	Direct Current Electric Field Assembly of Colloidal Crystals Displaying Reversible Structural Color. ACS Nano, 2014, 8, 8095-8103.	7.3	68
26	Programmable Fluidic Production of Microparticles with Configurable Anisotropy. Journal of the American Chemical Society, 2008, 130, 1335-1340.	6.6	66
27	A multimode structural kinetics constitutive equation for the transient rheology of thixotropic elasto-viscoplastic fluids. Journal of Rheology, 2018, 62, 321-342.	1.3	64
28	Synthesis, Assembly, and Image Analysis of Spheroidal Patchy Particles. Langmuir, 2013, 29, 4688-4696.	1.6	63
29	Early Stage Quiescent and Flow-Induced Crystallization of Intercalated Polypropylene Nanocomposites by Time-Resolved Light Scattering. Macromolecules, 2003, 36, 2333-2342.	2.2	61
30	Multiangle Depolarized Dynamic Light Scattering of Short Functionalized Single-Walled Carbon Nanotubes. Journal of Physical Chemistry C, 2009, 113, 7129-7133.	1.5	59
31	Spatially and temporally reconfigurable assembly of colloidal crystals. Nature Communications, 2014, 5, 3676.	5.8	58
32	Artificial biofilms establish the role of matrix interactions in staphylococcal biofilm assembly and disassembly. Scientific Reports, 2015, 5, 13081.	1.6	57
33	Direct visualization of flow-induced microstructure in dense colloidal gels by confocal laser scanning microscopy. Journal of Rheology, 2003, 47, 943-968.	1.3	55
34	Aggregation in dilute solutions of high molar mass poly(ethylene) oxide and its effect on polymer turbulent drag reduction. Polymer, 2009, 50, 261-270.	1.8	54
35	Dynamic structure of thermoreversible colloidal gels of adhesive spheres. Physical Review E, 2001, 63, 051402.	0.8	53
36	Scission-induced bounds on maximum polymer drag reduction in turbulent flow. Physics of Fluids, 2005, 17, 095108.	1.6	52

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37	Structural origins of dynamical heterogeneity in colloidal gels. Physical Review E, 2008, 77, 050401.	0.8	52
38	Influence of weak elasticity of dispersed phase on droplet behavior in sheared polybutadiene/poly(dimethyl siloxane) blends. Journal of Rheology, 2003, 47, 37-58.	1.3	50
39	Effects of Temperature on the Morphological, Polymeric, and Mechanical Properties of Staphylococcus epidermidis Bacterial Biofilms. Langmuir, 2015, 31, 2036-2042.	1.6	50
40	Fluidic Assembly and Packing of Microspheres in Confined Channels. Langmuir, 2008, 24, 3661-3670.	1.6	44
41	Colloidal System To Explore Structural and Dynamical Transitions in Rod Networks, Gels, and Glasses. Langmuir, 2009, 25, 8951-8959.	1.6	42
42	Adsorption and elution characteristics of nucleic acids on silica surfaces and their use in designing a miniaturized purification unit. Analytical Biochemistry, 2008, 373, 253-262.	1.1	40
43	Metastable orientational order of colloidal discoids. Nature Communications, 2015, 6, 8507.	5.8	40
44	Inertial Effects on Polymer Chain Scission in Planar Elongational Cross-Slot Flow. Macromolecules, 2004, 37, 1023-1030.	2.2	39
45	Flow-induced degradation of drag-reducing polymer solutions within a high-Reynolds-number turbulent boundary layer. Journal of Fluid Mechanics, 2011, 670, 337-364.	1.4	39
46	Contribution of the Klebsiella pneumoniae Capsule to Bacterial Aggregate and Biofilm Microstructures. Applied and Environmental Microbiology, 2011, 77, 1777-1782.	1.4	39
47	Quantitative nonlinear thixotropic model with stretched exponential response in transient shear flows. Journal of Rheology, 2016, 60, 1301-1315.	1.3	39
48	Stacking fault structure in shear-induced colloidal crystallization. Journal of Chemical Physics, 2006, 124, 134905.	1.2	37
49	Local Stress Control of Spatiotemporal Ordering of Colloidal Crystals in Complex Flows. Physical Review Letters, 2008, 101, 038301.	2.9	37
50	Soft glassy rheology model applied to stress relaxation of a thermoreversible colloidal gel. Journal of Rheology, 2008, 52, 785-800.	1.3	35
51	Nematic order in suspensions of colloidal rods by application of a centrifugal field. Soft Matter, 2011, 7, 540-545.	1.2	35
52	Comprehensive constitutive model for immiscible blends of Newtonian polymers. Journal of Rheology, 2004, 48, 319-348.	1.3	31
53	Long-circulating Janus nanoparticles made by electrohydrodynamic co-jetting for systemic drug delivery applications. Journal of Drug Targeting, 2015, 23, 750-758.	2.1	31
54	Tools and Functions of Reconfigurable Colloidal Assembly. Langmuir, 2018, 34, 11205-11219.	1.6	29

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55	Molar Mass, Entanglement, and Associations of the Biofilm Polysaccharide of Staphylococcus epidermidis. Biomacromolecules, 2013, 14, 1474-1481.	2.6	28
56	Binding kinetics of lock and key colloids. Journal of Chemical Physics, 2015, 142, 174909.	1.2	28
57	Role of Environmental and Antibiotic Stress on Staphylococcus epidermidis Biofilm Microstructure. Langmuir, 2013, 29, 7017-7024.	1.6	27
58	A model colloidal gel for coordinated measurements of force, structure, and rheology. Journal of Rheology, 2014, 58, 1485-1504.	1.3	27
59	Effect of Antimicrobial and Physical Treatments on Growth of Multispecies Staphylococcal Biofilms. Applied and Environmental Microbiology, 2017, 83, .	1.4	26
60	Associative and Entanglement Contributions to the Solution Rheology of a Bacterial Polysaccharide. Macromolecules, 2016, 49, 8313-8321.	2.2	24
61	Gelation and internal dynamics of colloidal rod aggregates. Journal of Colloid and Interface Science, 2006, 300, 155-162.	5.0	23
62	Pair interaction potentials of colloids by extrapolation of confocal microscopy measurements of collective suspension structure. Journal of Chemical Physics, 2010, 133, 164903.	1.2	23
63	Viscous solvent colloidal system for direct visualization of suspension structure, dynamics and rheology. Journal of Colloid and Interface Science, 2008, 318, 252-263.	5.0	22
64	Boundary-Driven Colloidal Crystallization in Simple Shear Flow. Physical Review Letters, 2010, 105, 228302.	2.9	22
65	Translational and rotational dynamics in dense suspensions of smooth and rough colloids. Soft Matter, 2017, 13, 9229-9236.	1.2	22
66	Effect of Defective Microstructure and Film Thickness on the Reflective Structural Color of Self-Assembled Colloidal Crystals. ACS Applied Materials & Interfaces, 2020, 12, 9842-9850.	4.0	22
67	Elasticity of microscale volumes of viscoelastic soft matter by cavitation rheometry. Applied Physics Letters, 2014, 105, 114105.	1.5	21
68	Role of shear-induced dynamical heterogeneity in the nonlinear rheology of colloidal gels. Soft Matter, 2014, 10, 9254-9259.	1.2	20
69	Time-dependent shear rate inhomogeneities and shear bands in a thixotropic yield-stress fluid under transient shear. Soft Matter, 2019, 15, 7956-7967.	1.2	20
70	Effect of Surface Chemistry and Metallic Layer Thickness on the Clustering of Metallodielectric Janus Spheres. Langmuir, 2014, 30, 15408-15415.	1.6	19
71	High-density equilibrium phases of colloidal ellipsoids by application of optically enhanced, direct current electric fields. Soft Matter, 2017, 13, 3768-3776.	1.2	18
72	Reconfigurable colloids. Nature, 2010, 464, 496-497.	13.7	17

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73	Kinetics of colloidal deposition, assembly, and crystallization in steady electric fields. Soft Matter, 2015, 11, 3599-3611.	1.2	17
74	Elasticity of colloidal gels: structural heterogeneity, floppy modes, and rigidity. Soft Matter, 2021, 17, 6929-6934.	1.2	17
75	Hemodialysis Catheter Heat Transfer for Biofilm Prevention and Treatment. ASAIO Journal, 2016, 62, 92-99.	0.9	16
76	Electric-Field-Induced Yielding of Colloidal Gels in Microfluidic Capillaries. Langmuir, 2010, 26, 1207-1213.	1.6	15
77	Dynamics of Fractal Cluster Gels with Embedded Active Colloids. Physical Review Letters, 2017, 119, 058001.	2.9	15
78	Anisotropy and breakup of extended droplets in immiscible blends. Journal of Non-Newtonian Fluid Mechanics, 2003, 113, 29-48.	1.0	14
79	Structure, Mechanics, and Instability of Fibrin Clot Infected with Staphylococcus epidermidis. Biophysical Journal, 2017, 113, 2100-2109.	0.2	14
80	Self-Propulsion and Active Motion of Janus Ellipsoids. Journal of Physical Chemistry B, 2018, 122, 10247-10255.	1.2	14
81	Microstructure and elasticity of dilute gels of colloidal discoids. Soft Matter, 2022, 18, 1350-1363.	1.2	14
82	Thermal Augmentation of Vancomycin Against Staphylococcal Biofilms. Shock, 2015, 44, 121-127.	1.0	13
83	Variable viscosity and density biofilm simulations using an immersed boundary method, part II: Experimental validation and the heterogeneous rheology-IBM. Journal of Computational Physics, 2016, 317, 204-222.	1.9	13
84	Rheological implications of embedded active matter in colloidal gels. Soft Matter, 2019, 15, 8012-8021.	1.2	13
85	Anisotropy effects on the kinetics of colloidal crystallization and melting: comparison of spheres and ellipsoids. Soft Matter, 2019, 15, 7479-7489.	1.2	13
86	Toward Assembly of Nonâ€closeâ€packed Colloidal Structures from Anisotropic Pentamer Particles. Macromolecular Rapid Communications, 2010, 31, 196-201.	2.0	12
87	Multicellularity and Antibiotic Resistance in Klebsiella pneumoniae Grown Under Bloodstream-Mimicking Fluid Dynamic Conditions. Journal of Infectious Diseases, 2012, 206, 588-595.	1.9	12
88	A nonlinear kinetic-rheology model for reversible scission and deformation of unentangled wormlike micelles. Journal of Rheology, 2018, 62, 1419-1427.	1.3	12
89	Self-diffusion in dilute colloidal suspensions with attractive potential interactions. Physical Review E, 2003, 67, 050402.	0.8	11
90	Yield stress behavior of colloidal gels with embedded active particles. Journal of Rheology, 2021, 65, 225-239.	1.3	10

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91	Transient, near-wall shear-band dynamics in channel flow of wormlike micelle solutions. Journal of Non-Newtonian Fluid Mechanics, 2016, 232, 77-87.	1.0	9
92	Kinetic modeling and design of colloidal lock and key assembly. Journal of Colloid and Interface Science, 2016, 463, 242-257.	5.0	9
93	Complement C5a Generation by Staphylococcal Biofilms. Shock, 2013, 39, 336-342.	1.0	8
94	Concentration, salt and temperature dependence of strain hardening of step shear in CTAB/NaSal surfactant solutions. Journal of Rheology, 2017, 61, 967-977.	1.3	8
95	Controlled Levitation of Colloids through Direct Current Electric Fields. Langmuir, 2017, 33, 10861-10867.	1.6	8
96	Letter to the Editor: Modeling the nonmonotonic time-dependence of viscosity bifurcation in thixotropic yield-stress fluids. Journal of Rheology, 2019, 63, 673-675.	1.3	8
97	Effect of Particles of Irregular Size on the Microstructure and Structural Color of Self-Assembled Colloidal Crystals. Langmuir, 2021, 37, 13300-13308.	1.6	7
98	The development of microfabricated devices for influenza A detection and genotyping. International Congress Series, 2004, 1263, 367-371.	0.2	6
99	Postfragmentation density function for bacterial aggregates in laminar flow. Physical Review E, 2011, 83, 041911.	0.8	6
100	Selective arraying of complex particle patterns. Lab on A Chip, 2010, 10, 1142.	3.1	5
101	Capillary-driven binding of thin triangular prisms at fluid interfaces. Soft Matter, 2018, 14, 3902-3918.	1.2	5
102	Differential Effects of Heated Perfusate on Morphology, Viability, and Dissemination of Staphylococcus epidermidis Biofilms. Applied and Environmental Microbiology, 2020, 86, .	1.4	5
103	Accelerated annealing of colloidal crystal monolayers by means of cyclically applied electric fields. Scientific Reports, 2021, 11, 11042.	1.6	5
104	Yield stress and rheology of a self-associating chitosan solution. Rheologica Acta, 2019, 58, 729-739.	1.1	4
105	Staphylococcus epidermidis Has Growth Phase Dependent Affinity for Fibrinogen and Resulting Fibrin Clot Elasticity. Frontiers in Microbiology, 2021, 12, 649534.	1.5	4
106	Rheology of Candida albicans fungal biofilms. Journal of Rheology, 2022, 66, 683-697.	1.3	4
107	Near-surface structure of lithographic inkâ€“fountain solution emulsions on model substrates. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2008, 326, 138-146.	2.3	3
108	Structural Color Spectral Response of Dense Structures of Discoidal Particles Generated by Evaporative Assembly. Journal of Physical Chemistry B, 2022, 126, 1315-1324.	1.2	3

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109	Differential analysis of capillary breakup rheometry for Newtonian liquids. Journal of Fluid Mechanics, 2016, 804, 116-129.	1.4	2
110	Abstract 356: Adhesion of Staphylococcus Epidermidis to Fibrinogen Alters Clot Formation Kinetics and Ultimate Stiffness. Arteriosclerosis, Thrombosis, and Vascular Biology, 2017, 37, .	1.1	0