Michael J Solomon

List of Publications by Citations

106 papers	6,601 citations	38 h-index	80 g-index
113 ext. papers	7,143 ext. citations	6 avg, IF	6.29 L-index

#	Paper	IF	Citations
106	Anisotropy of building blocks and their assembly into complex structures. *Nature Materials*, **2007**, 6, 557-62	27	2201
105	Rheology of Polypropylene/Clay Hybrid Materials. *Macromolecules*, **2001**, 34, 1864-1872	5.5	580
104	Microstructural regimes of colloidal rod suspensions, gels, and glasses. *Soft Matter*, **2010**, 6, 1391	3.6	199
103	Fundamentals of magnet-actuated droplet manipulation on an open hydrophobic surface. *Lab on A Chip*, **2009**, 9, 1567-75	7.2	139
102	Structure and dynamics of colloidal depletion gels: coincidence of transitions and heterogeneity. *Physical Review E*, **2006**, 74, 041403	2.4	134
101	Direct visualization of colloidal rod assembly by confocal microscopy. *Langmuir*, **2005**, 21, 5298-306	4	133
100	Actuation of shape-memory colloidal fibres of Janus ellipsoids. *Nature Materials*, **2015**, 14, 117-24	27	120
99	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, 16029-34	11.5	111
98	Flexible microfluidic device for mechanical property characterization of soft viscoelastic solids such as bacterial biofilms. *Langmuir*, **2009**, 25, 7743-51	4	97
97	A constitutive model for the prediction of ellipsoidal droplet shapes and stresses in immiscible blends. *Journal of Rheology*, **2000**, 44, 1055-1083	4.1	96
96	Shear-Induced Microstructural Evolution of a Thermoreversible Colloidal Gel. *Langmuir*, **2001**, 17, 2918-2929	4	95
95	Extracellular DNA facilitates the formation of functional amyloids in Staphylococcus aureus biofilms. *Molecular Microbiology*, **2016**, 99, 123-34	4.1	84
94	Direct Visualization of Long-Range Heterogeneous Structure in Dense Colloidal Gels. *Langmuir*, **2003**, 19, 509-512	4	79
93	Probe size effects on the microrheology of associating polymer solutions. *Physical Review E*, **2002**, 66, 061504	2.4	79
92	Translational and rotational dynamics of colloidal rods by direct visualization with confocal microscopy. *Journal of Colloid and Interface Science*, **2007**, 314, 98-106	9.3	78
91	Universal scaling for polymer chain scission in turbulence. *Proceedings of the National Academy of Sciences of the United States of America*, **2006**, 103, 16660-5	11.5	77
90	Effect of monomer geometry on the fractal structure of colloidal rod aggregates. *Physical Review Letters*, **2004**, 92, 155503	7.4	77

89	Orientation and rupture of fractal colloidal gels during start-up of steady shear flow. *Journal of Rheology*, **2005**, 49, 657-681	4.1	76
88	Rheological State Diagrams for Rough Colloids in Shear Flow. *Physical Review Letters*, **2017**, 119, 158001	7.4	75
87	Directions for targeted self-assembly of anisotropic colloids from statistical thermodynamics. *Current Opinion in Colloid and Interface Science*, **2011**, 16, 158-167	7.6	74
86	rheology of bacterial biofilms. *Soft Matter*, **2013**, 9, 122-131	3.6	71
85	Rheology and dynamics of particles in viscoelastic media. *Current Opinion in Colloid and Interface Science*, **2001**, 6, 430-437	7.6	65
84	Synthesis, assembly, and image analysis of spheroidal patchy particles. *Langmuir*, **2013**, 29, 4688-96	4	62
83	Programmable fluidic production of microparticles with configurable anisotropy. *Journal of the American Chemical Society*, **2008**, 130, 1335-40	16.4	62
82	Liquid crystal order in colloidal suspensions of spheroidal particles by direct current electric field assembly. *Small*, **2012**, 8, 1551-62	11	58
81	Early Stage Quiescent and Flow-Induced Crystallization of Intercalated Polypropylene Nanocomposites by Time-Resolved Light Scattering. *Macromolecules*, **2003**, 36, 2333-2342	5.5	57
80	Direct visualization of flow-induced microstructure in dense colloidal gels by confocal laser scanning microscopy. *Journal of Rheology*, **2003**, 47, 943-968	4.1	54
79	Multiangle Depolarized Dynamic Light Scattering of Short Functionalized Single-Walled Carbon Nanotubes. *Journal of Physical Chemistry C*, **2009**, 113, 7129-7133	3.8	52
78	Spatially and temporally reconfigurable assembly of colloidal crystals. *Nature Communications*, **2014**, 5, 3676	17.4	50
77	Dynamic structure of thermoreversible colloidal gels of adhesive spheres. *Physical Review E*, **2001**, 63, 051402	2.4	49
76	Structural origins of dynamical heterogeneity in colloidal gels. *Physical Review E*, **2008**, 77, 050401	2.4	48
75	Direct current electric field assembly of colloidal crystals displaying reversible structural color. *ACS Nano*, **2014**, 8, 8095-103	16.7	46
74	Colloidal gel elasticity arises from the packing of locally glassy clusters. *Nature Communications*, **2019**, 10, 2237	17.4	45
73	Influence of weak elasticity of dispersed phase on droplet behavior in sheared polybutadiene/poly(dimethyl siloxane) blends. *Journal of Rheology*, **2003**, 47, 37-58	4.1	45
72	Artificial biofilms establish the role of matrix interactions in staphylococcal biofilm assembly and disassembly. *Scientific Reports*, **2015**, 5, 13081	4.9	42

71	Aggregation in dilute solutions of high molar mass poly(ethylene) oxide and its effect on polymer turbulent drag reduction. *Polymer*, **2009**, 50, 261-270	3.9	42
70	Scission-induced bounds on maximum polymer drag reduction in turbulent flow. *Physics of Fluids*, **2005**, 17, 095108	4.4	42
69	Fluidic assembly and packing of microspheres in confined channels. *Langmuir*, **2008**, 24, 3661-70	4	40
68	Effects of temperature on the morphological, polymeric, and mechanical properties of Staphylococcus epidermidis bacterial biofilms. *Langmuir*, **2015**, 31, 2036-42	4	38
67	Adsorption and elution characteristics of nucleic acids on silica surfaces and their use in designing a miniaturized purification unit. *Analytical Biochemistry*, **2008**, 373, 253-62	3.1	38
66	Colloidal system to explore structural and dynamical transitions in rod networks, gels, and glasses. *Langmuir*, **2009**, 25, 8951-9	4	37
65	A multimode structural kinetics constitutive equation for the transient rheology of thixotropic elasto-viscoplastic fluids. *Journal of Rheology*, **2018**, 62, 321-342	4.1	35
64	Local stress control of spatiotemporal ordering of colloidal crystals in complex flows. *Physical Review Letters*, **2008**, 101, 038301	7.4	34
63	Inertial Effects on Polymer Chain Scission in Planar Elongational Cross-Slot Flow. *Macromolecules*, **2004**, 37, 1023-1030	5.5	34
62	Nematic order in suspensions of colloidal rods by application of a centrifugal field. *Soft Matter*, **2011**, 7, 540-545	3.6	33
61	Soft glassy rheology model applied to stress relaxation of a thermoreversible colloidal gel. *Journal of Rheology*, **2008**, 52, 785-800	4.1	33
60	Stacking fault structure in shear-induced colloidal crystallization. *Journal of Chemical Physics*, **2006**, 124, 134905	3.9	33
59	Contribution of the Klebsiella pneumoniae capsule to bacterial aggregate and biofilm microstructures. *Applied and Environmental Microbiology*, **2011**, 77, 1777-82	4.8	32
58	Metastable orientational order of colloidal discoids. *Nature Communications*, **2015**, 6, 8507	17.4	28
57	Binding kinetics of lock and key colloids. *Journal of Chemical Physics*, **2015**, 142, 174909	3.9	28
56	Comprehensive constitutive model for immiscible blends of Newtonian polymers. *Journal of Rheology*, **2004**, 48, 319-348	4.1	28
55	Long-circulating Janus nanoparticles made by electrohydrodynamic co-jetting for systemic drug delivery applications. *Journal of Drug Targeting*, **2015**, 23, 750-8	5.4	26
54	A model colloidal gel for coordinated measurements of force, structure, and rheology. *Journal of Rheology*, **2014**, 58, 1485-1504	4.1	26

53	Quantitative nonlinear thixotropic model with stretched exponential response in transient shear flows. *Journal of Rheology*, **2016**, 60, 1301-1315	4.1	26
52	Flow-induced degradation of drag-reducing polymer solutions within a high-Reynolds-number turbulent boundary layer. *Journal of Fluid Mechanics*, **2011**, 670, 337-364	3.7	25
51	Role of environmental and antibiotic stress on Staphylococcus epidermidis biofilm microstructure. *Langmuir*, **2013**, 29, 7017-24	4	24
50	Molar mass, entanglement, and associations of the biofilm polysaccharide of Staphylococcus epidermidis. *Biomacromolecules*, **2013**, 14, 1474-81	6.9	22
49	Tools and Functions of Reconfigurable Colloidal Assembly. *Langmuir*, **2018**, 34, 11205-11219	4	21
48	Viscous solvent colloidal system for direct visualization of suspension structure, dynamics and rheology. *Journal of Colloid and Interface Science*, **2008**, 318, 252-63	9.3	21
47	Boundary-driven colloidal crystallization in simple shear flow. *Physical Review Letters*, **2010**, 105, 228302	7.4	19
46	Gelation and internal dynamics of colloidal rod aggregates. *Journal of Colloid and Interface Science*, **2006**, 300, 155-62	9.3	19
45	Role of shear-induced dynamical heterogeneity in the nonlinear rheology of colloidal gels. *Soft Matter*, **2014**, 10, 9254-9	3.6	18
44	Effect of Antimicrobial and Physical Treatments on Growth of Multispecies Staphylococcal Biofilms. *Applied and Environmental Microbiology*, **2017**, 83,	4.8	17
43	Translational and rotational dynamics in dense suspensions of smooth and rough colloids. *Soft Matter*, **2017**, 13, 9229-9236	3.6	17
42	Pair interaction potentials of colloids by extrapolation of confocal microscopy measurements of collective suspension structure. *Journal of Chemical Physics*, **2010**, 133, 164903	3.9	17
41	Effect of surface chemistry and metallic layer thickness on the clustering of metallodielectric Janus spheres. *Langmuir*, **2014**, 30, 15408-15	4	16
40	High-density equilibrium phases of colloidal ellipsoids by application of optically enhanced, direct current electric fields. *Soft Matter*, **2017**, 13, 3768-3776	3.6	15
39	Associative and Entanglement Contributions to the Solution Rheology of a Bacterial Polysaccharide. *Macromolecules*, **2016**, 49, 8313-8321	5.5	15
38	Elasticity of microscale volumes of viscoelastic soft matter by cavitation rheometry. *Applied Physics Letters*, **2014**, 105, 114105	3.4	15
37	Electric-field-induced yielding of colloidal gels in microfluidic capillaries. *Langmuir*, **2010**, 26, 1207-13	4	15
36	Time-dependent shear rate inhomogeneities and shear bands in a thixotropic yield-stress fluid under transient shear. *Soft Matter*, **2019**, 15, 7956-7967	3.6	15

35	Kinetics of colloidal deposition, assembly, and crystallization in steady electric fields. *Soft Matter*, **2015**, 11, 3599-611	3.6	13
34	Anisotropy and breakup of extended droplets in immiscible blends. *Journal of Non-Newtonian Fluid Mechanics*, **2003**, 113, 29-48	2.7	13
33	Toward Assembly of Non-close-packed Colloidal Structures from Anisotropic Pentamer Particles. *Macromolecular Rapid Communications*, **2010**, 31, 196-201	4.8	12
32	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	4.1	11
31	Thermal Augmentation of Vancomycin Against Staphylococcal Biofilms. *Shock*, **2015**, 44, 121-7	3.4	11
30	Multicellularity and antibiotic resistance in Klebsiella pneumoniae grown under bloodstream-mimicking fluid dynamic conditions. *Journal of Infectious Diseases*, **2012**, 206, 588-95	7	11
29	Self-diffusion in dilute colloidal suspensions with attractive potential interactions. *Physical Review E* , **2003**, 67, 050402	2.4	11
28	Dynamics of Fractal Cluster Gels with Embedded Active Colloids. *Physical Review Letters*, **2017**, 119, 058001	7.4	10
27	Hemodialysis Catheter Heat Transfer for Biofilm Prevention and Treatment. *ASAIO Journal*, **2016**, 62, 92-9	3.6	10
26	A nonlinear kinetic-rheology model for reversible scission and deformation of unentangled wormlike micelles. *Journal of Rheology*, **2018**, 62, 1419-1427	4.1	10
25	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	9.5	9
24	Kinetic modeling and design of colloidal lock and key assembly. *Journal of Colloid and Interface Science*, **2016**, 463, 242-57	9.3	9
23	Transient, near-wall shear-band dynamics in channel flow of wormlike micelle solutions. *Journal of Non-Newtonian Fluid Mechanics*, **2016**, 232, 77-87	2.7	9
22	Structure, Mechanics, and Instability of Fibrin Clot Infected with Staphylococcus epidermidis. *Biophysical Journal*, **2017**, 113, 2100-2109	2.9	8
21	Self-Propulsion and Active Motion of Janus Ellipsoids. *Journal of Physical Chemistry B*, **2018**, 122, 10247-10255	3.4	8
20	Letter to the Editor: Modeling the nonmonotonic time-dependence of viscosity bifurcation in thixotropic yield-stress fluids. *Journal of Rheology*, **2019**, 63, 673-675	4.1	7
19	Rheological implications of embedded active matter in colloidal gels. *Soft Matter*, **2019**, 15, 8012-8021	3.6	7
18	Complement c5a generation by staphylococcal biofilms. *Shock*, **2013**, 39, 336-42	3.4	7

17	Elasticity of colloidal gels: structural heterogeneity, floppy modes, and rigidity. *Soft Matter*, **2021**, 17, 6929-6934	3.6	7
16	Concentration, salt and temperature dependence of strain hardening of step shear in CTAB/NaSal surfactant solutions. *Journal of Rheology*, **2017**, 61, 967-977	4.1	6
15	Selective arraying of complex particle patterns. *Lab on A Chip*, **2010**, 10, 1142-7	7.2	5
14	Anisotropy effects on the kinetics of colloidal crystallization and melting: comparison of spheres and ellipsoids. *Soft Matter*, **2019**, 15, 7479-7489	3.6	4
13	Capillary-driven binding of thin triangular prisms at fluid interfaces. *Soft Matter*, **2018**, 14, 3902-3918	3.6	4
12	Postfragmentation density function for bacterial aggregates in laminar flow. *Physical Review E*, **2011**, 83, 041911	2.4	4
11	Near-surface structure of lithographic inkfountain solution emulsions on model substrates. *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, **2008**, 326, 138-146	5.1	3
10	Differential Effects of Heated Perfusate on Morphology, Viability, and Dissemination of Staphylococcus epidermidis Biofilms. *Applied and Environmental Microbiology*, **2020**, 86,	4.8	2
9	Yield stress and rheology of a self-associating chitosan solution. *Rheologica Acta*, **2019**, 58, 729-739	2.3	2
8	Controlled Levitation of Colloids through Direct Current Electric Fields. *Langmuir*, **2017**, 33, 10861-10867	4	2
7	Effect of Particles of Irregular Size on the Microstructure and Structural Color of Self-Assembled Colloidal Crystals. *Langmuir*, **2021**, 37, 13300-13308	4	2
6	Yield stress behavior of colloidal gels with embedded active particles. *Journal of Rheology*, **2021**, 65, 225-239	4.1	2
5	Differential analysis of capillary breakup rheometry for Newtonian liquids. *Journal of Fluid Mechanics*, **2016**, 804, 116-129	3.7	2
4	Accelerated annealing of colloidal crystal monolayers by means of cyclically applied electric fields. *Scientific Reports*, **2021**, 11, 11042	4.9	1
3	Has Growth Phase Dependent Affinity for Fibrinogen and Resulting Fibrin Clot Elasticity. *Frontiers in Microbiology*, **2021**, 12, 649534	5.7	1
2	The development of microfabricated devices for influenza A detection and genotyping. *International Congress Series*, **2004**, 1263, 367-371		0
1	Rheology of Candida albicans fungal biofilms. *Journal of Rheology*, **2022**, 66, 683-697	4.1	0