Charles M Schroeder

List of Publications by Citations

91 papers	3,029 citations	30 h-index	52 g-index
106 ext. papers	3,556 ext. citations	7.2 avg, IF	5.72 L-index

#	Paper	IF	Citations
91	Observation of polymer conformation hysteresis in extensional flow. *Science*, **2003**, 301, 1515-9	33.3	295
90	Thermostable enzymes as biocatalysts in the biofuel industry. *Advances in Applied Microbiology*, **2010**, 70, 1-55	4.9	202
89	Characteristic periodic motion of polymers in shear flow. *Physical Review Letters*, **2005**, 95, 018301	7.4	162
88	Effect of Hydrodynamic Interactions on DNA Dynamics in Extensional Flow: Simulation and Single Molecule Experiment. *Macromolecules*, **2004**, 37, 9242-9256	5.5	129
87	A microfluidic-based hydrodynamic trap: design and implementation. *Lab on A Chip*, **2011**, 11, 1786-94	7.2	118
86	Dynamics of DNA in the Flow-Gradient Plane of Steady Shear Flow: Observations and Simulations. *Macromolecules*, **2005**, 38, 1967-1978	5.5	113
85	A multiplexed microfluidic platform for rapid antibiotic susceptibility testing. *Biosensors and Bioelectronics*, **2013**, 49, 118-25	11.8	101
84	Hydrodynamic trap for single particles and cells. *Applied Physics Letters*, **2010**, 96, 224101	3.4	85
83	Manipulation and confinement of single particles using fluid flow. *Nano Letters*, **2013**, 13, 2357-64	11.5	84
82	Characterization of flavin-based fluorescent proteins: an emerging class of fluorescent reporters. *PLoS ONE*, **2013**, 8, e64753	3.7	75
81	Stokes trap for multiplexed particle manipulation and assembly using fluidics. *Proceedings of the National Academy of Sciences of the United States of America*, **2016**, 113, 3976-81	11.5	72
80	Single polymer dynamics for molecular rheology. *Journal of Rheology*, **2018**, 62, 371-403	4.1	71
79	Multiplexed single-molecule assay for enzymatic activity on flow-stretched DNA. *Nature Methods*, **2007**, 4, 397-9	21.6	65
78	When Ends Meet: Circular DNA Stretches Differently in Elongational Flows. *Macromolecules*, **2015**, 48, 5997-6001	5.5	58
77	Direct observation of TALE protein dynamics reveals a two-state search mechanism. *Nature Communications*, **2015**, 6, 7277	17.4	56
76	Flavin-based fluorescent proteins: emerging paradigms in biological imaging. *Current Opinion in Biotechnology*, **2015**, 31, 16-23	11.4	53
75	Microfluidic systems for single DNA dynamics. *Soft Matter*, **2012**, 8, 10560-10572	3.6	52

74	Direct observation of DNA dynamics in semidilute solutions in extensional flow. *Journal of Rheology*, **2017**, 61, 151-167	4.1	41
73	Ultrafast redistribution of E. coli SSB along long single-stranded DNA via intersegment transfer. *Journal of Molecular Biology*, **2014**, 426, 2413-21	6.5	40
72	Ring Polymer Dynamics Are Governed by a Coupling between Architecture and Hydrodynamic Interactions. *Macromolecules*, **2016**, 49, 1961-1971	5.5	38
71	TALE proteins search DNA using a rotationally decoupled mechanism. *Nature Chemical Biology*, **2016**, 12, 831-7	11.7	37
70	Comparative analyses of two thermophilic enzymes exhibiting both beta-1,4 mannosidic and beta-1,4 glucosidic cleavage activities from Caldanaerobius polysaccharolyticus. *Journal of Bacteriology*, **2010**, 192, 4111-21	3.5	36
69	Model systems for single molecule polymer dynamics. *Soft Matter*, **2011**, 7, 7907-7913	3.6	36
68	Effect of molecular architecture on ring polymer dynamics in semidilute linear polymer solutions. *Nature Communications*, **2019**, 10, 1753	17.4	35
67	A microfluidic approach to study the effect of bacterial interactions on antimicrobial susceptibility in polymicrobial cultures. *RSC Advances*, **2015**, 5, 35211-35223	3.7	35
66	Engineering and characterization of new LOV-based fluorescent proteins from Chlamydomonas reinhardtii and Vaucheria frigida. *ACS Synthetic Biology*, **2015**, 4, 371-7	5.7	35
65	Topology-Controlled Relaxation Dynamics of Single Branched Polymers. *ACS Macro Letters*, **2015**, 4, 446-452	6.2	32
64	Directed evolution of bright mutants of an oxygen-independent flavin-binding fluorescent protein from Pseudomonas putida. *Journal of Biological Engineering*, **2012**, 6, 20	6.3	32
63	Single-molecule study of DNA polymerization activity of HIV-1 reverse transcriptase on DNA templates. *Journal of Molecular Biology*, **2010**, 395, 995-1006	6.5	32
62	Passive non-linear microrheology for determining extensional viscosity. *Physics of Fluids*, **2017**, 29, 121603	4.4	31
61	Ellipsoidal Polyaspartamide Polymersomes with Enhanced Cell-Targeting Ability. *Advanced Functional Materials*, **2012**, 22, 3239-3246	15.6	30
60	Dendrimer probes for enhanced photostability and localization in fluorescence imaging. *Biophysical Journal*, **2013**, 104, 1566-75	2.9	29
59	Fluidic-directed assembly of aligned oligopeptides with π-conjugated cores. *Advanced Materials*, **2013**, 25, 6398-404	24	28
58	Parameter-free prediction of DNA dynamics in planar extensional flow of semidilute solutions. *Journal of Rheology*, **2017**, 61, 169-186	4.1	26
57	Automated single cell microbioreactor for monitoring intracellular dynamics and cell growth in free solution. *Lab on A Chip*, **2014**, 14, 2688-97	7.2	26

56	Direct observation of single flexible polymers using single stranded DNA(). *Soft Matter*, **2011**, 7, 8005-8016	3.6	26
55	Multiplexed detection of nucleic acids in a combinatorial screening chip. *Lab on A Chip*, **2011**, 11, 1916-23	7.2	25
54	Simulation of ultrathin lubricant films spreading over various carbon surfaces. *Journal of Applied Physics*, **2000**, 87, 6164-6166	2.5	24
53	TALEN outperforms Cas9 in editing heterochromatin target sites. *Nature Communications*, **2021**, 12, 606	17.4	23
52	Concentration-Driven Assembly and Sol-Gel Transition of Conjugated Oligopeptides. *ACS Central Science*, **2017**, 3, 986-994	16.8	22
51	Single polymer dynamics under large amplitude oscillatory extension. *Physical Review Fluids*, **2016**, 1,	2.8	22
50	Nonequilibrium Self-Assembly of Conjugated Oligopeptides in Solution. *ACS Applied Materials & Interfaces*, **2017**, 9, 3977-3984	9.5	21
49	Determining elasticity from single polymer dynamics. *Soft Matter*, **2014**, 10, 2178-87	3.6	19
48	Characterizing the performance of the hydrodynamic trap using a control-based approach. *Microfluidics and Nanofluidics*, **2015**, 18, 1055-1066	2.8	19
47	Dynamically Heterogeneous Relaxation of Entangled Polymer Chains. *Physical Review Letters*, **2018**, 120, 267801	7.4	19
46	Stretching Dynamics of Single Comb Polymers in Extensional Flow. *Macromolecules*, **2018**, 51, 1507-1517	5.5	18
45	Charge Transport and Quantum Interference Effects in Oxazole-Terminated Conjugated Oligomers. *Journal of the American Chemical Society*, **2019**, 141, 16079-16084	16.4	17
44	Zooming in on biological processes with fluorescence nanoscopy. *Current Opinion in Biotechnology*, **2013**, 24, 646-53	11.4	17
43	Intrachain Charge Transport through Conjugated Donor Acceptor Oligomers. *ACS Applied Electronic Materials*, **2019**, 1, 7-12	4	17
42	Unexpected entanglement dynamics in semidilute blends of supercoiled and ring DNA. *Soft Matter*, **2020**, 16, 152-161	3.6	16
41	Transient and Average Unsteady Dynamics of Single Polymers in Large-Amplitude Oscillatory Extension. *Macromolecules*, **2016**, 49, 8018-8030	5.5	16
40	Modeling the stretching of wormlike chains in the presence of excluded volume. *Soft Matter*, **2015**, 11, 5947-54	3.6	15
39	Charge Transport in Sequence-Defined Conjugated Oligomers. *Journal of the American Chemical Society*, **2020**, 142, 4852-4861	16.4	15

38	Microfluidic Wheatstone bridge for rapid sample analysis. *Lab on A Chip*, **2011**, 11, 4181-6	7.2	15
37	Template-Directed Synthesis of Structurally Defined Branched Polymers. *Macromolecules*, **2015**, 48, 1296-1303	5.5	14
36	Single polymer dynamics of topologically complex DNA. *Current Opinion in Colloid and Interface Science*, **2016**, 26, 28-40	7.6	14
35	Nonequilibrium thermodynamics of dilute polymer solutions in flow. *Journal of Chemical Physics*, **2014**, 141, 174903	3.9	14
34	Orientation control and nonlinear trajectory tracking of colloidal particles using microfluidics. *Physical Review Fluids*, **2019**, 4,	2.8	14
33	Flow Topology During Multiplexed Particle Manipulation Using a Stokes Trap. *Physical Review Applied*, **2019**, 12,	4.3	13
32	Specific labeling of zinc finger proteins using noncanonical amino acids and copper-free click chemistry. *Bioconjugate Chemistry*, **2012**, 23, 1891-901	6.3	13
31	New directions in single polymer dynamics. *Journal of Polymer Science, Part B: Polymer Physics*, **2013**, 51, 556-566	2.6	13
30	Fluorescent Nanoconjugate Derivatives with Enhanced Photostability for Single Molecule Imaging. *Analytical Chemistry*, **2015**, 87, 11048-57	7.8	12
29	Direct Observation of Ring Polymer Dynamics in the Flow-Gradient Plane of Shear Flow. *Macromolecules*, **2020**, 53, 9406-9419	5.5	12
28	Covalent Ag-C Bonding Contacts from Unprotected Terminal Acetylenes for Molecular Junctions. *Nano Letters*, **2020**, 20, 5490-5495	11.5	11
27	Nonequilibrium Work Relations for Polymer Dynamics in Dilute Solutions. *Macromolecules*, **2013**, 46, 8345-8355	5.5	11
26	Conformational dynamics and phase behavior of lipid vesicles in a precisely controlled extensional flow. *Soft Matter*, **2020**, 16, 337-347	3.6	11
25	Viscoelastic properties of ring-linear DNA blends exhibit nonmonotonic dependence on blend composition. *Physical Review Research*, **2020**, 2,	3.9	10
24	A Single-Molecule View of Genome Editing Proteins: Biophysical Mechanisms for TALEs and CRISPR/Cas9. *Annual Review of Chemical and Biomolecular Engineering*, **2017**, 8, 577-597	8.9	9
23	100th Anniversary of Macromolecular Science Viewpoint: Single-Molecule Studies of Synthetic Polymers. *ACS Macro Letters*, **2020**, 9, 1332-1341	6.6	9
22	Automation and flow control for particle manipulation. *Current Opinion in Chemical Engineering*, **2020**, 29, 1-8	5.4	9
21	Scale-Dependent Stiffness and Internal Tension of a Model Brush Polymer. *Physical Review Letters*, **2017**, 119, 127801	7.4	8

20	Macroscopic Alignment and Assembly of Conjugated Oligopeptides Using Colloidal Microchannels. *ACS Applied Materials & Interfaces*, **2017**, 9, 41586-41593	9.5	8
19	Dynamics and rheology of ring-linear blend semidilute solutions in extensional flow: Single molecule experiments. *Journal of Rheology*, **2021**, 65, 729-744	4.1	8
18	Synthesis and Direct Observation of Thermoresponsive DNA Copolymers. *ACS Macro Letters*, **2018**, 7, 281-286	6.6	7
17	A microfluidic-based hydrodynamic trap for single particles. *Journal of Visualized Experiments*, **2011**,	1.6	6
16	Rheology of Entangled Solutions of Ring-linear DNA Blends. *Macromolecules*,	5.5	5
15	Double-mode relaxation of highly deformed anisotropic vesicles. *Physical Review E*, **2020**, 102, 010605	2.4	4
14	Dynamics and rheology of ring-linear blend semidilute solutions in extensional flow. Part I: Modeling and molecular simulations. *Journal of Rheology*, **2021**, 65, 757-777	4.1	4
13	Heterogeneous drying and nonmonotonic contact angle dynamics in concentrated film-forming latex drops. *Physical Review Fluids*, **2017**, 2,	2.8	3
12	Nonmonotonic dependence of comb polymer relaxation on branch density in semidilute solutions of linear polymers. *Physical Review Fluids*, **2020**, 5,	2.8	3
11	Divalent cations promote TALE DNA-binding specificity. *Nucleic Acids Research*, **2020**, 48, 1406-1422	20.1	3
10	Solubility and activity of a phosphinosulfonate palladium catalyst in water with different surfactants. *Polymer Chemistry*, **2019**, 10, 1988-1992	4.9	2
9	Characterizing intermolecular interactions in redox-active pyridinium-based molecular junctions. *Journal of Electroanalytical Chemistry*, **2020**, 875, 114070	4.1	2
8	Effect of Core Oligomer Length on the Phase Behavior and Assembly of Conjugated Peptides. *ACS Applied Materials & Interfaces*, **2020**, 12, 20722-20732	9.5	2
7	Vesicle dynamics in large amplitude oscillatory extensional flow. *Journal of Fluid Mechanics*, **2021**, 929,	3.7	2
6	Nonlinear Transient and Steady State Stretching of Deflated Vesicles in Flow. *Langmuir*, **2021**, 37, 13976-13984	4	2
5	Transition between Nonresonant and Resonant Charge Transport in Molecular Junctions. *Nano Letters*, **2021**, 21, 8340-8347	11.5	2
4	In Situ Photophysical Characterization of Conjugated Oligopeptides Assembled via Continuous Flow Processing. *Langmuir*, **2019**, 35, 10947-10957	4	1
3	Using automated synthesis to understand the role of side chains on molecular charge transport.. *Nature Communications*, **2022**, 13, 2102	17.4	1

2	Reversible Switching of Molecular Conductance in Viologens is Controlled by the Electrochemical Environment. *Journal of Physical Chemistry C*, **2021**, 125, 21862-21872	3.8	0
1	Microfluidic Methods in Single Cell Biology **2016**, 19-54		