Steven Chu

List of Publications by Citations

88 papers	31,385 citations	69 h-index	90 g-index
90 ext. papers	36,393 ext. citations	15.5 avg, IF	7.53 L-index

#	Paper	IF	Citations
88	Opportunities and challenges for a sustainable energy future. *Nature*, **2012**, 488, 294-303	50.4	5810
87	Observation of a single-beam gradient force optical trap for dielectric particles. *Optics Letters*, **1986**, 11, 288	3	4676
86	The path towards sustainable energy. *Nature Materials*, **2016**, 16, 16-22	27	2141
85	Interconnected hollow carbon nanospheres for stable lithium metal anodes. *Nature Nanotechnology*, **2014**, 9, 618-23	28.7	1304
84	Selective deposition and stable encapsulation of lithium through heterogeneous seeded growth. *Nature Energy*, **2016**, 1,	62.3	1065
83	Trapping of neutral sodium atoms with radiation pressure. *Physical Review Letters*, **1987**, 59, 2631-2634	7.4	962
82	Atomic interferometry using stimulated Raman transitions. *Physical Review Letters*, **1991**, 67, 181-184	7.4	826
81	Single polymer dynamics in an elongational flow. *Science*, **1997**, 276, 2016-21	33.3	726
80	A single-molecule study of RNA catalysis and folding. *Science*, **2000**, 288, 2048-51	33.3	646
79	Nobel Lecture: The manipulation of neutral particles. *Reviews of Modern Physics*, **1998**, 70, 685-706	40.5	642
78	Single-polymer dynamics in steady shear flow. *Science*, **1999**, 283, 1724-7	33.3	609
77	Measurement of gravitational acceleration by dropping atoms. *Nature*, **1999**, 400, 849-852	50.4	603
76	Ultrathin two-dimensional atomic crystals as stable interfacial layer for improvement of lithium metal anode. *Nano Letters*, **2014**, 14, 6016-22	11.5	545
75	Experimental observation of optically trapped atoms. *Physical Review Letters*, **1986**, 57, 314-317	7.4	517
74	Three-dimensional viscous confinement and cooling of atoms by resonance radiation pressure. *Physical Review Letters*, **1985**, 55, 48-51	7.4	511
73	Correlating structural dynamics and function in single ribozyme molecules. *Science*, **2002**, 296, 1473-6	33.3	463
72	Polymer nanofiber-guided uniform lithium deposition for battery electrodes. *Nano Letters*, **2015**, 15, 2910-6	11.5	406

71	Initiation and re-initiation of DNA unwinding by the Escherichia coli Rep helicase. *Nature*, **2002**, 419, 638-41	50.4	390
70	Response of flexible polymers to a sudden elongational flow. *Science*, **1998**, 281, 1335-40	33.3	324
69	Laser cooling below a photon recoil with three-level atoms. *Physical Review Letters*, **1992**, 69, 1741-1744	7.4	317
68	One at a time, live tracking of NGF axonal transport using quantum dots. *Proceedings of the National Academy of Sciences of the United States of America*, **2007**, 104, 13666-71	11.5	307
67	Observation of polymer conformation hysteresis in extensional flow. *Science*, **2003**, 301, 1515-9	33.3	295
66	Optical molasses and multilevel atoms: theory. *Journal of the Optical Society of America B: Optical Physics*, **1989**, 6, 2058	1.7	271
65	Dynamical Scaling of DNA Diffusion Coefficients. *Macromolecules*, **1996**, 29, 1372-1373	5.5	267
64	The dynamics of partially extended single molecules of DNA. *Nature*, **1997**, 388, 151-4	50.4	233
63	Atomic velocity selection using stimulated Raman transitions. *Physical Review Letters*, **1991**, 66, 2297-2300	7.4	222
62	Atom-interferometry tests of the isotropy of post-Newtonian gravity. *Physical Review Letters*, **2008**, 100, 031101	7.4	219
61	High-Performance Lithium Metal Negative Electrode with a Soft and Flowable Polymer Coating. *ACS Energy Letters*, **2016**, 1, 1247-1255	20.1	218
60	A half-wave rectified alternating current electrochemical method for uranium extraction from seawater. *Nature Energy*, **2017**, 2,	62.3	216
59	rf spectroscopy in an atomic fountain. *Physical Review Letters*, **1989**, 63, 612-615	7.4	215
58	Exploring the folding landscape of a structured RNA. *Proceedings of the National Academy of Sciences of the United States of America*, **2002**, 99, 155-60	11.5	206
57	Precision measurement of the photon recoil of an atom using atomic interferometry. *Physical Review Letters*, **1993**, 70, 2706-2709	7.4	206
56	A precision measurement of the gravitational redshift by the interference of matter waves. *Nature*, **2010**, 463, 926-9	50.4	203
55	Laser-cooled Cs frequency standard and a measurement of the frequency shift due to ultracold collisions. *Physical Review Letters*, **1993**, 70, 1771-1774	7.4	198
54	Atom interferometry with up to 24-photon-momentum-transfer beam splitters. *Physical Review Letters*, **2008**, 100, 180405	7.4	170

53	Atomic interferometer based on adiabatic population transfer. *Physical Review Letters*, **1994**, 73, 2563-2566	7.4	169
52	Multiple native states reveal persistent ruggedness of an RNA folding landscape. *Nature*, **2010**, 463, 681-4	50.4	167
51	Beyond optical molasses: 3D raman sideband cooling of atomic cesium to high phase-space density. *Physical Review Letters*, **2000**, 84, 439-42	7.4	163
50	Characteristic periodic motion of polymers in shear flow. *Physical Review Letters*, **2005**, 95, 018301	7.4	162
49	Evaporative cooling in a crossed dipole trap. *Physical Review Letters*, **1995**, 74, 3577-3580	7.4	160
48	Optical molasses and multilevel atoms: experiment. *Journal of the Optical Society of America B: Optical Physics*, **1989**, 6, 2072	1.7	159
47	Normal-incidence reflection of slow atoms from an optical evanescent wave. *Optics Letters*, **1990**, 15, 607	3	145
46	Theoretical analysis of velocity-selective Raman transitions. *Physical Review A*, **1992**, 45, 342-348	2.6	139
45	Single molecule observation of liposome-bilayer fusion thermally induced by soluble N-ethyl maleimide sensitive-factor attachment protein receptors (SNAREs). *Biophysical Journal*, **2004**, 87, 3569-84	2.9	138
44	Long atomic coherence times in an optical dipole trap. *Physical Review Letters*, **1995**, 74, 1311-1314	7.4	137
43	Atomic-density-dependent losses in an optical trap. *Optics Letters*, **1988**, 13, 452-4	3	136
42	Shear Thinning and Tumbling Dynamics of Single Polymers in the Flow-Gradient Plane. *Macromolecules*, **2005**, 38, 581-592	5.5	133
41	Cold atoms and quantum control. *Nature*, **2002**, 416, 206-10	50.4	130
40	Effect of Hydrodynamic Interactions on DNA Dynamics in Extensional Flow: Simulation and Single Molecule Experiment. *Macromolecules*, **2004**, 37, 9242-9256	5.5	129
39	Dynamics of dilute and semidilute DNA solutions in the start-up of shear flow. *Journal of Rheology*, **2001**, 45, 421-450	4.1	124
38	An Ultrastrong Double-Layer Nanodiamond Interface for Stable Lithium Metal Anodes. *Joule*, **2018**, 2, 1595-1609	27.8	116
37	Dynamics of DNA in the Flow-Gradient Plane of Steady Shear Flow: Observations and Simulations. *Macromolecules*, **2005**, 38, 1967-1978	5.5	113
36	Single-molecule studies of SNARE complex assembly reveal parallel and antiparallel configurations. *Proceedings of the National Academy of Sciences of the United States of America*, **2003**, 100, 14800-5	11.5	109

35	Improved magneto-optic trapping in a vapor cell. *Optics Letters*, **1992**, 17, 526-8	3	107
34	Measurement of the Positronium 1S13-2S13 Interval by Doppler-Free Two-Photon Spectroscopy. *Physical Review Letters*, **1984**, 52, 1689-1692	7.4	107
33	Atom funnel for the production of a slow, high-density atomic beam. *Physical Review Letters*, **1990**, 64, 1658-1661	7.4	103
32	Atom interferometry tests of local Lorentz invariance in gravity and electrodynamics. *Physical Review D*, **2009**, 80,	4.9	99
31	Exploration of the transition state for tertiary structure formation between an RNA helix and a large structured RNA. *Journal of Molecular Biology*, **2003**, 328, 1011-26	6.5	92
30	Excitation of the Positronium 1S13-2S13 Two-Photon Transition. *Physical Review Letters*, **1982**, 48, 1333-1337	7.4	90
29	Atom interferometers with scalable enclosed area. *Physical Review Letters*, **2009**, 102, 240403	7.4	88
28	The Individualistic Dynamics of Entangled DNA in Solution. *Macromolecules*, **2007**, 40, 2461-2476	5.5	88
27	Laser excitation of the muonium 1S-2S transition. *Physical Review Letters*, **1988**, 60, 101-104	7.4	87
26	Single-particle spectroscopy for functional nanomaterials. *Nature*, **2020**, 579, 41-50	50.4	82
25	Visualization of Molecular Fluctuations near the Critical Point of the Coil-Stretch Transition in Polymer Elongation. *Macromolecules*, **2003**, 36, 4544-4548	5.5	81
24	Relating the microscopic and macroscopic response of a polymeric fluid in a shearing flow. *Physical Review Letters*, **2000**, 85, 2018-21	7.4	76
23	Atom-wave diffraction between the Raman-Nath and the Bragg regime: Effective Rabi frequency, losses, and phase shifts. *Physical Review A*, **2008**, 77,	2.6	75
22	Active low frequency vertical vibration isolation. *Review of Scientific Instruments*, **1999**, 70, 2735-2741	1.7	73
21	Self-diffusion of an entangled DNA molecule by reptation. *Physical Review Letters*, **1995**, 75, 4146-4149	7.4	73
20	Raman cooling of atoms in two and three dimensions. *Physical Review Letters*, **1994**, 72, 3158-3161	7.4	70
19	Dynamics and configurational fluctuations of single DNA molecules in linear mixed flows. *Physical Review E*, **2002**, 66, 011915	2.4	60
18	High-brightness atom source for atomic fountains. *Physical Review A*, **2001**, 63,	2.6	59

17	Direct measurement of tertiary contact cooperativity in RNA folding. *Journal of the American Chemical Society*, **2008**, 130, 6085-7	16.4	53
16	Noise-immune conjugate large-area atom interferometers. *Physical Review Letters*, **2009**, 103, 050402	7.4	51
15	Sub-20 nm Core-Shell-Shell Nanoparticles for Bright Upconversion and Enhanced Förster Resonant Energy Transfer. *Journal of the American Chemical Society*, **2019**, 141, 16997-17005	16.4	48
14	Suppression of Atomic Radiative Collisions by Tuning the Ground State Scattering Length. *Physical Review Letters*, **1999**, 83, 943-946	7.4	44
13	Bimodal speed distributions in laser-cooled atoms. *Physical Review Letters*, **1989**, 62, 1118-1121	7.4	42
12	Measuring the folding transition time of single RNA molecules. *Biophysical Journal*, **2007**, 92, 3275-83	2.9	41
11	Müller, Peters & Chu reply. *Nature*, **2010**, 467, E2-E2	50.4	33
10	Biology and polymer physics at the single-molecule level. *Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences*, **2003**, 361, 689-98	3	32
9	In vitro methods for measuring force and velocity of the actin-myosin interaction using purified proteins. *Methods in Cell Biology*, **1993**, 39, 1-21	1.8	26
8	Active sub-Rayleigh alignment of parallel or antiparallel laser beams. *Optics Letters*, **2005**, 30, 3323-5	3	23
7	Precision Atom Interferometry with Light Pulses **1997**, 363-406		10
6	A PRELIMINARY MEASUREMENT OF h/MCs WITH ATOM INTERFEROMETRY **2002**,		7
5	Cooling and Trapping of Atoms with Laser Light **1986**, 41-49		5
4	Progress towards a measurement of ?/MCs. *AIP Conference Proceedings*, **2001**,	0	1
3	DEMONSTRATION OF LASER COOLING AND TRAPPING OF ATOMS **1987**, 377-393		1
2	High-Noise, Low-Resolution Spectroscopy **2002**, 81-95		
1	Optical Molasses with a New Twist **1989**, 12-15		