

# Bruce A Remington

## List of Publications by Year in descending order

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136  
papers

10,469  
citations

26630

56  
h-index

32842

100  
g-index

138  
all docs

138  
docs citations

138  
times ranked

3944  
citing authors

#	ARTICLE	IF	CITATIONS
1	Fuel gain exceeding unity in an inertially confined fusion implosion. <i>Nature</i> , 2014, 506, 343-348.	27.8	742
2	Experimental astrophysics with high power lasers and Z-pinch. <i>Reviews of Modern Physics</i> , 2006, 78, 755-807.	45.6	640
3	Similarity Criteria for the Laboratory Simulation of Supernova Hydrodynamics. <i>Astrophysical Journal</i> , 1999, 518, 821-832.	4.5	381
4	Modeling Astrophysical Phenomena in the Laboratory with Intense Lasers. <i>Science</i> , 1999, 284, 1488-1493.	12.6	369
5	The National Ignition Facility: Ushering in a new age for high energy density science. <i>Physics of Plasmas</i> , 2009, 16, .	1.9	360
6	Progress towards ignition on the National Ignition Facility. <i>Physics of Plasmas</i> , 2013, 20, .	1.9	259
7	Observation of magnetic field generation via the Weibel instability in interpenetrating plasma flows. <i>Nature Physics</i> , 2015, 11, 173-176.	16.7	236
8	Shock deformation of face-centred-cubic metals on subnanosecond timescales. <i>Nature Materials</i> , 2006, 5, 805-809.	27.5	227
9	Onset of Hydrodynamic Mix in High-Velocity, Highly Compressed Inertial Confinement Fusion Implosions. <i>Physical Review Letters</i> , 2013, 111, 085004.	7.8	215
10	High-Adiabatic High-Foot Inertial Confinement Fusion Implosion Experiments on the National Ignition Facility. <i>Physical Review Letters</i> , 2014, 112, 055001.	7.8	199
11	High-energy K $\alpha$ radiography using high-intensity, short-pulse lasers. <i>Physics of Plasmas</i> , 2006, 13, 056309.	1.9	193
12	A review of the ablative stabilization of the Rayleigh-Taylor instability in regimes relevant to inertial confinement fusion. <i>Physics of Plasmas</i> , 1994, 1, 1379-1389.	1.9	191
13	A review of astrophysics experiments on intense lasers. <i>Physics of Plasmas</i> , 2000, 7, 1641-1652.	1.9	188
14	Criteria for Scaled Laboratory Simulations of Astrophysical MHD Phenomena. <i>Astrophysical Journal, Supplement Series</i> , 2000, 127, 465-468.	7.7	184
15	Anomalous Elastic Response of Silicon to Uniaxial Shock Compression on Nanosecond Time Scales. <i>Physical Review Letters</i> , 2001, 86, 2349-2352.	7.8	177
16	Design of a High-Foot High-Adiabatic ICF Capsule for the National Ignition Facility. <i>Physical Review Letters</i> , 2014, 112, 055002.	7.8	173
17	A multiscale strength model for extreme loading conditions. <i>Journal of Applied Physics</i> , 2011, 109, .	2.5	161
18	Turbulent mixing and transition criteria of flows induced by hydrodynamic instabilities. <i>Physics of Plasmas</i> , 2019, 26, .	1.9	154

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19	The high-foot implosion campaign on the National Ignition Facility. <i>Physics of Plasmas</i> , 2014, 21, .	1.9	149
20	Single-mode and multimode Rayleigh-Taylor experiments on Nova. <i>Physics of Plasmas</i> , 1995, 2, 241-255.	1.9	139
21	Hot-Spot Mix in Ignition-Scale Inertial Confinement Fusion Targets. <i>Physical Review Letters</i> , 2013, 111, 045001.	7.8	135
22	Supernova hydrodynamics experiments on the Nova laser. <i>Physics of Plasmas</i> , 1997, 4, 1994-2003.	1.9	121
23	Self-organized electromagnetic field structures in laser-produced counter-streaming plasmas. <i>Nature Physics</i> , 2012, 8, 809-812.	16.7	118
24	Neutron spectrometry—An essential tool for diagnosing implosions at the National Ignition Facility (invited). <i>Review of Scientific Instruments</i> , 2012, 83, 10D308.	1.3	117
25	The time scale for the transition to turbulence in a high Reynolds number, accelerated flow. <i>Physics of Plasmas</i> , 2003, 10, 614-622.	1.9	113
26	Generation of scaled protogalactic seed magnetic fields in laser-produced shock waves. <i>Nature</i> , 2012, 481, 480-483.	27.8	113
27	Material dynamics under extreme conditions of pressure and strain rate. <i>Materials Science and Technology</i> , 2006, 22, 474-488.	1.6	112
28	High-resolution 17-keV backlighters for high energy density experiments. <i>Physics of Plasmas</i> , 2008, 15, .	1.9	111
29	Measurement of a Dispersion Curve for Linear-Regime Rayleigh-Taylor Growth Rates in Laser-Driven Planar Targets. <i>Physical Review Letters</i> , 1997, 78, 3318-3321.	7.8	110
30	EXAFS Measurement of Iron bcc-to-hcp Phase Transformation in Nanosecond-Laser Shocks. <i>Physical Review Letters</i> , 2005, 95, 075501.	7.8	106
31	Laboratory evidence of dynamo amplification of magnetic fields in a turbulent plasma. <i>Nature Communications</i> , 2018, 9, 591.	12.8	105
32	Characterizing counter-streaming interpenetrating plasmas relevant to astrophysical collisionless shocks. <i>Physics of Plasmas</i> , 2012, 19, .	1.9	101
33	Demonstration of High Performance in Layered Deuterium-Tritium Capsule Implosions in Uranium Hohlraums at the National Ignition Facility. <i>Physical Review Letters</i> , 2015, 115, 055001.	7.8	101
34	An in-flight radiography platform to measure hydrodynamic instability growth in inertial confinement fusion capsules at the National Ignition Facility. <i>Physics of Plasmas</i> , 2014, 21, .	1.9	98
35	Viscous Rayleigh-Taylor Instability Experiments at High Pressure and Strain Rate. <i>Physical Review Letters</i> , 2010, 104, 135504.	7.8	96
36	An experimental testbed for the study of hydrodynamic issues in supernovae. <i>Physics of Plasmas</i> , 2001, 8, 2446-2453.	1.9	92

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37	First Measurements of Hydrodynamic Instability Growth in Indirectly Driven Implosions at Ignition-Relevant Conditions on the National Ignition Facility. <i>Physical Review Letters</i> , 2014, 112, 185003.	7.8	90
38	Observation of a Kelvin-Helmholtz Instability in a High-Energy-Density Plasma on the Omega Laser. <i>Physical Review Letters</i> , 2009, 103, 045005.	7.8	86
39	How high energy fluxes may affect Rayleigh-Taylor instability growth in young supernova remnants. <i>Nature Communications</i> , 2018, 9, 1564.	12.8	84
40	Materials science under extreme conditions of pressure and strain rate. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2004, 35, 2587-2607.	2.2	82
41	Reduced instability growth with high-adiabat high-foot implosions at the National Ignition Facility. <i>Physical Review E</i> , 2014, 90, 011102.	2.1	77
42	Rayleigh-Taylor instabilities in high-energy density settings on the National Ignition Facility. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2019, 116, 18233-18238.	7.1	76
43	Experimental Comparison of Classical versus Ablative Rayleigh-Taylor Instability. <i>Physical Review Letters</i> , 1996, 76, 4536-4539.	7.8	73
44	Richtmyer-Meshkov experiments on the Nova laser at high compression. <i>Physical Review Letters</i> , 1993, 70, 1806-1809.	7.8	71
45	Effect of shock proximity on Richtmyer-Meshkov growth. <i>Physics of Plasmas</i> , 2003, 10, 1931-1936.	1.9	69
46	Progress in understanding turbulent mixing induced by Rayleigh-Taylor and Richtmyer-Meshkov instabilities. <i>Physics of Plasmas</i> , 2003, 10, 1883-1896.	1.9	69
47	Supernova-relevant Hydrodynamic Instability Experiments on the Nova Laser. <i>Astrophysical Journal</i> , 1997, 478, L75-L78.	4.5	68
48	Grain-Size-Independent Plastic Flow at Ultrahigh Pressures and Strain Rates. <i>Physical Review Letters</i> , 2015, 114, 065502.	7.8	67
49	A model for instability growth in accelerated solid metals. <i>Journal of Applied Physics</i> , 2003, 93, 5287-5301.	2.5	64
50	Strong stabilization of the Rayleigh-Taylor instability by material strength at megabar pressures. <i>Physics of Plasmas</i> , 2010, 17, .	1.9	63
51	Measurement of 0.35- $\mu$ m Laser Imprint in a Thin Si Foil Using an X-Ray Laser Backlighter. <i>Physical Review Letters</i> , 1996, 76, 3574-3577.	7.8	61
52	TWO-DIMENSIONAL BLAST-WAVE-DRIVEN RAYLEIGH-TAYLOR INSTABILITY: EXPERIMENT AND SIMULATION. <i>Astrophysical Journal</i> , 2009, 696, 749-759.	4.5	61
53	Strength of Shock-Loaded Single-Crystal Tantalum [100] Determined using <i>In-Situ</i> Broadband X-Ray Laue Diffraction. <i>Physical Review Letters</i> , 2013, 110, 115501.	7.8	61
54	Hydrodynamic instability growth and mix experiments at the National Ignition Facility. <i>Physics of Plasmas</i> , 2014, 21, .	1.9	60

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55	Measurements of an Ablator-Gas Atomic Mix in Indirectly Driven Implosions at the National Ignition Facility. <i>Physical Review Letters</i> , 2014, 112, 025002.	7.8	60
56	Thin Shell, High Velocity Inertial Confinement Fusion Implosions on the National Ignition Facility. <i>Physical Review Letters</i> , 2015, 114, 145004.	7.8	56
57	A high energy density shock driven Kelvin-Helmholtz shear layer experiment. <i>Physics of Plasmas</i> , 2009, 16, .	1.9	53
58	Collisionless shock experiments with lasers and observation of Weibel instabilities. <i>Physics of Plasmas</i> , 2015, 22, .	1.9	51
59	Ablation front Rayleigh-Taylor growth experiments in spherically convergent geometry. <i>Physics of Plasmas</i> , 2000, 7, 2033-2039.	1.9	50
60	Deformation and failure in extreme regimes by high-energy pulsed lasers: A review. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2017, 688, 429-458.	5.6	50
61	The role of hot spot mix in the low-foot and high-foot implosions on the NIF. <i>Physics of Plasmas</i> , 2017, 24, .	1.9	49
62	Transition from Collisional to Collisionless Regimes in Interpenetrating Plasma Flows on the National Ignition Facility. <i>Physical Review Letters</i> , 2017, 118, 185003.	7.8	49
63	High-pressure nanocrystalline structure of a shock-compressed single crystal of iron. <i>Physical Review B</i> , 2008, 78, .	3.2	48
64	Performance of High-Convergence, Layered DT Implosions with Extended-Duration Pulses at the National Ignition Facility. <i>Physical Review Letters</i> , 2013, 111, 215001.	7.8	47
65	Nonlinear mixing behavior of the three-dimensional Rayleigh-Taylor instability at a decelerating interface. <i>Physics of Plasmas</i> , 2004, 11, 2829-2837.	1.9	46
66	Scaled laboratory experiments explain the kink behaviour of the Crab Nebula jet. <i>Nature Communications</i> , 2016, 7, 13081.	12.8	46
67	Rayleigh-Taylor mixing in supernova experiments. <i>Physics of Plasmas</i> , 2015, 22, .	1.9	43
68	Development of the CD Symcap platform to study gas-shell mix in implosions at the National Ignition Facility. <i>Physics of Plasmas</i> , 2014, 21, .	1.9	42
69	Development of backlighting sources for a Compton radiography diagnostic of inertial confinement fusion targets (invited). <i>Review of Scientific Instruments</i> , 2008, 79, 10E901.	1.3	41
70	Validation of a Turbulent Kelvin-Helmholtz Shear Layer Model Using a High-Energy-Density OMEGA Laser Experiment. <i>Physical Review Letters</i> , 2012, 109, 155004.	7.8	39
71	From microjoules to megajoules and kilobars to gigabars: Probing matter at extreme states of deformation. <i>Physics of Plasmas</i> , 2015, 22, 090501.	1.9	39
72	Thermonuclear reactions probed at stellar-core conditions with laser-based inertial-confinement fusion. <i>Nature Physics</i> , 2017, 13, 1227-1231.	16.7	38

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73	Visualizing electromagnetic fields in laser-produced counter-streaming plasma experiments for collisionless shock laboratory astrophysics. <i>Physics of Plasmas</i> , 2013, 20, .	1.9	36
74	Three-dimensional blast-wave-driven Rayleigh-Taylor instability and the effects of long-wavelength modes. <i>Physics of Plasmas</i> , 2009, 16, .	1.9	35
75	Measuring the absolute deuterium-tritium neutron yield using the magnetic recoil spectrometer at OMEGA and the NIF. <i>Review of Scientific Instruments</i> , 2012, 83, 10D912.	1.3	35
76	Simulations of laser imprint for Nova experiments and for ignition capsules. <i>Physics of Plasmas</i> , 1997, 4, 1978-1984.	1.9	34
77	Development of a Laboratory Environment to Test Models of Supernova Remnant Formation. <i>Astrophysical Journal</i> , 1998, 500, L157-L161.	4.5	34
78	Measurement of the $\langle T \rangle + \langle \mu \rangle \langle T \rangle$ Neutron Spectrum Using the National Ignition Facility. <i>Physical Review Letters</i> , 2013, 111, 052501.	7.8	34
79	First demonstration of ARC-accelerated proton beams at the National Ignition Facility. <i>Physics of Plasmas</i> , 2019, 26, .	1.9	34
80	Basic scalings for collisionless-shock experiments in a plasma without pre-imposed magnetic field. <i>Plasma Physics and Controlled Fusion</i> , 2012, 54, 105021.	2.1	33
81	Designs for highly nonlinear ablative Rayleigh-Taylor experiments on the National Ignition Facility. <i>Physics of Plasmas</i> , 2012, 19, .	1.9	33
82	Investigation of ion kinetic effects in direct-drive exploding-pusher implosions at the NIF. <i>Physics of Plasmas</i> , 2014, 21, 122712.	1.9	33
83	Numerical modeling of laser-driven experiments aiming to demonstrate magnetic field amplification via turbulent dynamo. <i>Physics of Plasmas</i> , 2017, 24, .	1.9	31
84	Extreme Hardening of Pb at High Pressure and Strain Rate. <i>Physical Review Letters</i> , 2019, 123, 205701.	7.8	31
85	Review of hydrodynamic instability experiments in inertially confined fusion implosions on National Ignition Facility. <i>Plasma Physics and Controlled Fusion</i> , 2020, 62, 014007.	2.1	31
86	The ablation-front Rayleigh-Taylor dispersion curve in indirect drive. <i>Physics of Plasmas</i> , 2001, 8, 2344-2348.	1.9	30
87	Probing the deep nonlinear stage of the ablative Rayleigh-Taylor instability in indirect drive experiments on the National Ignition Facility. <i>Physics of Plasmas</i> , 2015, 22, .	1.9	30
88	Extended X-Ray Absorption Fine Structure Measurements of Laser-Shocked V and Ti and Crystal Phase Transformation in Ti. <i>Physical Review Letters</i> , 2004, 92, 095504.	7.8	28
89	Absolute measurements of x-ray backlighter sources at energies above 10 keV. <i>Physics of Plasmas</i> , 2011, 18, .	1.9	27
90	Lattice-level observation of the elastic-to-plastic relaxation process with subnanosecond resolution in shock-compressed Ta using time-resolved <i>in situ</i> Laue diffraction. <i>Physical Review B</i> , 2015, 92, .	3.2	27

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91	Magnetic field production via the Weibel instability in interpenetrating plasma flows. <i>Physics of Plasmas</i> , 2017, 24, .	1.9	27
92	Measurements of direct drive laser imprint in thin foils by radiography using an x-ray laser backlighter. <i>Physics of Plasmas</i> , 1997, 4, 1985-1993.	1.9	26
93	Metal deformation and phase transitions at extremely high strain rates. <i>MRS Bulletin</i> , 2010, 35, 999-1006.	3.5	26
94	Measurement of single mode imprint in laser ablative drive of a thin Al foil by extreme ultraviolet laser radiography. <i>Physics of Plasmas</i> , 1998, 5, 227-233.	1.9	24
95	Solid-state framing camera with multiple time frames. <i>Applied Physics Letters</i> , 2013, 103, .	3.3	24
96	Measurements of laser-speckle-induced perturbations in laser-driven foils. <i>Physical Review E</i> , 1996, 54, 4473-4475.	2.1	23
97	Tailored ramp-loading via shock release of stepped-density reservoirs. <i>Physics of Plasmas</i> , 2012, 19, .	1.9	23
98	Visualizing deceleration-phase instabilities in inertial confinement fusion implosions using an "enhanced self-emission" technique at the National Ignition Facility. <i>Physics of Plasmas</i> , 2018, 25, 054502.	1.9	22
99	Development of a short duration backlit pinhole for radiography on the National Ignition Facility. <i>Review of Scientific Instruments</i> , 2010, 81, 10E536.	1.3	20
100	Development of an inertial confinement fusion platform to study charged-particle-producing nuclear reactions relevant to nuclear astrophysics. <i>Physics of Plasmas</i> , 2017, 24, .	1.9	20
101	Developing a high-flux, high-energy continuum backlighter for extended x-ray absorption fine structure measurements at the National Ignition Facility. <i>Review of Scientific Instruments</i> , 2018, 89, 10F114.	1.3	20
102	Time-resolved turbulent dynamo in a laser plasma. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2021, 118, .	7.1	20
103	Astrophysically relevant radiation hydrodynamics experiment at the National Ignition Facility. <i>Astrophysics and Space Science</i> , 2011, 336, 207-211.	1.4	19
104	Three-dimensional modeling and analysis of a high energy density Kelvin-Helmholtz experiment. <i>Physics of Plasmas</i> , 2012, 19, .	1.9	18
105	Progress in indirect and direct-drive planar experiments on hydrodynamic instabilities at the ablation front. <i>Physics of Plasmas</i> , 2014, 21, 122702.	1.9	18
106	Ablative stabilization of Rayleigh-Taylor instabilities resulting from a laser-driven radiative shock. <i>Physics of Plasmas</i> , 2018, 25, .	1.9	18
107	Radiative shocks produced from spherical cryogenic implosions at the National Ignition Facility. <i>Physics of Plasmas</i> , 2013, 20, 056315.	1.9	17
108	High energy-density science on the National Ignition Facility. , 1998, , .		16

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109	Modeling HEDLA magnetic field generation experiments on laser facilities. High Energy Density Physics, 2013, 9, 172-177.	1.5	16
110	Multiscale strength (MS) models: their foundation, their successes, and their challenges. Journal of Physics: Conference Series, 2014, 500, 112055.	0.4	16
111	Comparison of Drive-Seeded Modulations in Planar Foils for 0.35 and 0.53 $\mu$ m Laser Drive. Physical Review Letters, 1998, 80, 1904-1907.	7.8	15
112	Development of new platforms for hydrodynamic instability and asymmetry measurements in deceleration phase of indirectly driven implosions on NIF. Physics of Plasmas, 2018, 25, 082705.	1.9	15
113	Investigating iron material strength up to 1 Mbar using Rayleigh-Taylor growth measurements. AIP Conference Proceedings, 2017, . .	0.4	14
114	Long-duration planar direct-drive hydrodynamics experiments on the NIF. Plasma Physics and Controlled Fusion, 2018, 60, 014012.	2.1	14
115	Extended x-ray absorption fine structure measurements of laser shocks in Ti and V and phase transformation in Ti. Physics of Plasmas, 2004, 11, 2688-2695.	1.9	13
116	Pushed single shell implosions for mix and radiation trapping studies using high-Z layers on National Ignition Facility. Physics of Plasmas, 2019, 26, .	1.9	12
117	Kinetic effects on neutron generation in moderately collisional interpenetrating plasma flows. Physics of Plasmas, 2019, 26, .	1.9	12
118	Optimized continuum x-ray emission from laser-generated plasma. Applied Physics Letters, 2020, 117, .	3.3	12
119	Laboratory astrophysical collisionless shock experiments on Omega and NIF. Journal of Physics: Conference Series, 2016, 688, 012084.	0.4	11
120	Order-of-magnitude increase in laser-target coupling at near-relativistic intensities using compound parabolic concentrators. Physical Review E, 2021, 103, L031201.	2.1	11
121	Strong suppression of heat conduction in a laboratory replica of galaxy-cluster turbulent plasmas. Science Advances, 2022, 8, eabj6799.	10.3	11
122	Extended x-ray absorption fine structure measurement of phase transformation in iron shocked by nanosecond laser. Physics of Plasmas, 2005, 12, 092703.	1.9	10
123	Design of experiments to observe radiation stabilized Rayleigh-Taylor instability growth at an embedded decelerating interface. Physics of Plasmas, 2011, 18, .	1.9	10
124	Optimization of a high-yield, low-areal-density fusion product source at the National Ignition Facility with applications in nucleosynthesis experiments. Physics of Plasmas, 2018, 25, .	1.9	10
125	Developing a bright 17 $\mu$ keV x-ray source for probing high-energy-density states of matter at high spatial resolution. Physics of Plasmas, 2015, 22, 043114.	1.9	7
126	A new method to generate dust with astrophysical properties. Journal of Instrumentation, 2011, 6, P05010-P05010.	1.2	6



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127	Proton pinhole imaging on the National Ignition Facility. Review of Scientific Instruments, 2016, 87, 11E704.	1.3	4
128	Measurement of ablative Richtmyer-Meshkov evolution from laser imprint. Physics of Plasmas, 2017, 24, 102702.	1.9	4
129	Long-duration direct drive hydrodynamics experiments on the National Ignition Facility: Platform development and numerical modeling with CHIC. Physics of Plasmas, 2019, 26, 082703.	1.9	4
130	Modeling of grain size strengthening in tantalum at high pressures and strain rates. AIP Conference Proceedings, 2017, , .	0.4	3
131	Modeling laser-driven high-rate plasticity in BCC lead. AIP Conference Proceedings, 2018, , .	0.4	3
132	High resolution >40 keV x-ray radiography using an edge-on micro-flag backlighter at NIF-ARC. Review of Scientific Instruments, 2021, 92, 033535.	1.3	3
133	Techniques for studying materials under extreme states of high energy density compression. Physics of Plasmas, 2021, 28, 060901.	1.9	3
134	A multi-wavelength, high-contrast contact radiography system for the study of low-density aerogel foams. Review of Scientific Instruments, 2016, 87, 073706.	1.3	1
135	Solid-state framing camera operating in interferometric mode. Review of Scientific Instruments, 2018, 89, 10G107.	1.3	1
136	Progress towards materials science above 1000 GPa (10 Mbar) on the NIF laser. , 2009, , .		1