

Chris Niemann

List of Publications by Year in descending order

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97
papers

1,937
citations

218381

26
h-index

288905

40
g-index

97
all docs

97
docs citations

97
times ranked

1459
citing authors

#	ARTICLE	IF	CITATIONS
1	Generation of scaled protogalactic seed magnetic fields in laser-produced shock waves. <i>Nature</i> , 2012, 481, 480-483.	13.7	113
2	Ultrafast Melting of Carbon Induced by Intense Proton Beams. <i>Physical Review Letters</i> , 2010, 105, 265701.	2.9	93
3	Backscatter measurements for NIF ignition targets (invited). <i>Review of Scientific Instruments</i> , 2010, 81, 10D921.	0.6	82
4	Design, construction, and calibration of a three-axis, high-frequency magnetic probe (B-dot probe) as a diagnostic for exploding plasmas. <i>Review of Scientific Instruments</i> , 2009, 80, 113505.	0.6	73
5	Plasmons in Strongly Coupled Shock-Compressed Matter. <i>Physical Review Letters</i> , 2010, 105, 075003.	2.9	73
6	Experiments and multiscale simulations of laser propagation through ignition-scale plasmas. <i>Nature Physics</i> , 2007, 3, 716-719.	6.5	72
7	Effect of Nonlocal Transport on Heat-Wave Propagation. <i>Physical Review Letters</i> , 2004, 92, 205006.	2.9	68
8	Observation of collisionless shocks in a large current-free laboratory plasma. <i>Geophysical Research Letters</i> , 2014, 41, 7413-7418.	1.5	62
9	Measurement of carbon ionization balance in high-temperature plasma mixtures by temporally resolved X-ray scattering. <i>Journal of Quantitative Spectroscopy and Radiative Transfer</i> , 2006, 99, 225-237.	1.1	56
10	Observation of the Parametric Two-Ion Decay Instability with Thomson Scattering. <i>Physical Review Letters</i> , 2004, 93, 045004.	2.9	45
11	Radiation-Driven Hydrodynamics of High-Z Hohlraums on the National Ignition Facility. <i>Physical Review Letters</i> , 2005, 95, 215004.	2.9	45
12	Dynamics of exploding plasmas in a large magnetized plasma. <i>Physics of Plasmas</i> , 2013, 20, .	0.7	45
13	Collisionless interaction of an energetic laser produced plasma with a large magnetoplasma. <i>Astrophysics and Space Science</i> , 2009, 322, 155-159.	0.5	40
14	Amplification of an ultrashort pulse laser by stimulated Raman scattering of a 1 ns pulse in a low density plasma. <i>Physics of Plasmas</i> , 2007, 14, 113109.	0.7	39
15	K-alpha conversion efficiency measurements for X-ray scattering in inertial confinement fusion plasmas. <i>High Energy Density Physics</i> , 2007, 3, 156-162.	0.4	35
16	Generation of magnetized collisionless shocks by a novel, laser-driven magnetic piston. <i>Physics of Plasmas</i> , 2012, 19, .	0.7	34
17	High-energy Nd:glass laser facility for collisionless laboratory astrophysics. <i>Journal of Instrumentation</i> , 2012, 7, P03010-P03010.	0.5	34
18	Progress in long scale length laser-plasma interactions. <i>Nuclear Fusion</i> , 2004, 44, S185-S190.	1.6	29

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19	High $K\alpha$ x-ray conversion efficiency from extended source gas jet targets irradiated by ultra short laser pulses. Applied Physics Letters, 2008, 92, .	1.5	29
20	Hybrid simulation of shock formation for super-Alfvénic expansion of laser ablated debris through an ambient, magnetized plasma. Physics of Plasmas, 2013, 20, .	0.7	29
21	Green Frequency-Doubled Laser-Beam Propagation in High-Temperature Hohlraum Plasmas. Physical Review Letters, 2008, 100, 045002.	2.9	27
22	Implementation of a near backscattering imaging system on the National Ignition Facility. Review of Scientific Instruments, 2004, 75, 4183-4186.	0.6	26
23	Intensity Limits for Propagation of 0.527 μm Laser Beams through Large-Scale-Length Plasmas for Inertial Confinement Fusion. Physical Review Letters, 2005, 94, 085005.	2.9	26
24	First hohlraum drive studies on the National Ignition Facility. Physics of Plasmas, 2006, 13, 056315.	0.7	26
25	Proton acceleration experiments and warm dense matter research using high power lasers. Plasma Physics and Controlled Fusion, 2009, 51, 124039.	0.9	26
26	Collisionless momentum transfer in space and astrophysical explosions. Nature Physics, 2017, 13, 573-577.	6.5	26
27	On the generation of magnetized collisionless shocks in the large plasma device. Physics of Plasmas, 2017, 24, .	0.7	26
28	Recalling and Updating Research on Diamagnetic Cavities: Experiments, Theory, Simulations. Frontiers in Astronomy and Space Sciences, 2019, 5, .	1.1	26
29	Role of hydrodynamics simulations in laser-plasma interaction predictive capability. Physics of Plasmas, 2007, 14, 056304.	0.7	24
30	High order reflectivity of highly oriented pyrolytic graphite crystals for x-ray energies up to 22 keV. Review of Scientific Instruments, 2008, 79, 10E311.	0.6	24
31	Characterization of laser-produced carbon plasmas relevant to laboratory astrophysics. Journal of Applied Physics, 2016, 120, .	1.1	24
32	Effects of plasma composition on backscatter, hot electron production, and propagation in underdense plasmas. Physics of Plasmas, 2004, 11, 2709-2715.	0.7	23
33	Laser coupling to reduced-scale hohlraum targets at the Early Light Program of the National Ignition Facility. Physics of Plasmas, 2005, 12, 056305.	0.7	23
34	Laser-driven, magnetized quasi-perpendicular collisionless shocks on the Large Plasma Device. Physics of Plasmas, 2014, 21, .	0.7	22
35	Experimental study of subcritical laboratory magnetized collisionless shocks using a laser-driven magnetic piston. Physics of Plasmas, 2015, 22, .	0.7	22
36	High contrast Kr gas jet $K\alpha$ x-ray source for high energy density physics experiments. Review of Scientific Instruments, 2008, 79, 10E917.	0.6	21

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37	Hybrid simulations of a parallel collisionless shock in the large plasma device. <i>Physics of Plasmas</i> , 2016, 23, .	0.7	20
38	Demonstration of a low electromagnetic pulse laser-driven argon gas jet x-ray source. <i>Applied Physics Letters</i> , 2012, 101, .	1.5	19
39	Observations of a field-aligned ion/ion-beam instability in a magnetized laboratory plasma. <i>Physics of Plasmas</i> , 2018, 25, .	0.7	19
40	First laser-plasma interaction and hohlraum experiments on the National Ignition Facility. <i>Plasma Physics and Controlled Fusion</i> , 2005, 47, B405-B417.	0.9	18
41	Three Regimes and Four Modes for the Resonant Saturation of Parallel Ion-beam Instabilities. <i>Astrophysical Journal</i> , 2019, 873, 57.	1.6	18
42	Observation of polarization dependent Raman scattering in a large scale plasma illuminated with multiple laser beams. <i>Physics of Plasmas</i> , 2006, 13, 082703.	0.7	15
43	Evolution of elastic x-ray scattering in laser-shocked warm dense lithium. <i>Physical Review E</i> , 2009, 80, 066406.	0.8	15
44	A platform for high-repetition-rate laser experiments on the Large Plasma Device. <i>High Power Laser Science and Engineering</i> , 2018, 6, .	2.0	14
45	On the Background-gyroresonant Character of Bell's Instability in the Large-current Regime. <i>Astrophysical Journal</i> , 2019, 872, 48.	1.6	14
46	Gas-filled hohlraum experiments at the National Ignition Facility. <i>Physics of Plasmas</i> , 2006, 13, 056319.	0.7	13
47	Laboratory Observations of Ultra-low-frequency Analog Waves Driven by the Right-hand Resonant Ion Beam Instability. <i>Astrophysical Journal Letters</i> , 2020, 891, L11.	3.0	12
48	Cold compression of solid matter by intense heavy-ion-beam-generated pressure waves. <i>Laser and Particle Beams</i> , 2004, 22, 59-63.	0.4	11
49	Calibration of initial measurements from the full aperture backscatter system on the National Ignition Facility. <i>Review of Scientific Instruments</i> , 2004, 75, 4174-4176.	0.6	11
50	The first target experiments on the National Ignition Facility. <i>European Physical Journal D</i> , 2007, 44, 273-281.	0.6	11
51	Spectroscopic density and temperature measurements and modelling of a discharge plasma for neutralized ion-beam transport. <i>Journal Physics D: Applied Physics</i> , 2003, 36, 2102-2109.	1.3	10
52	Saturation of power transfer between two copropagating laser beams by ion-wave scattering in a single-species plasma. <i>Physics of Plasmas</i> , 2005, 12, 112701.	0.7	10
53	Bias Voltage Control in Pulsed Applications for Mach-Zehnder Electrooptic Intensity Modulators. <i>IEEE Transactions on Control Systems Technology</i> , 2017, 25, 1890-1895.	3.2	10
54	Collisionless Shocks in a Large Magnetized Laser-Plasma Plume. <i>IEEE Transactions on Plasma Science</i> , 2011, 39, 2406-2407.	0.6	9

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55	Laser-driven, ion-scale magnetospheres in laboratory plasmas. I. Experimental platform and first results. <i>Physics of Plasmas</i> , 2022, 29, .	0.7	9
56	Qualification of a near backscattering imaging system on the National Ignition Facility. <i>Review of Scientific Instruments</i> , 2006, 77, 10E529.	0.6	8
57	Control of 2% (527nm) stimulated Raman scattering in a steep density gradient plasma. <i>Physics of Plasmas</i> , 2009, 16, 062704.	0.7	8
58	Thomson Scattering Measurements of Temperature and Density in a Low-Density, Laser-Driven Magnetized Plasma. <i>Journal of Instrumentation</i> , 2012, 7, P02002-P02002.	0.5	8
59	Enhanced collisionless shock formation in a magnetized plasma containing a density gradient. <i>Physical Review E</i> , 2014, 90, 041101.	0.8	8
60	Measurement of temperature and density using non-collective X-ray Thomson scattering in pulsed power produced warm dense plasmas. <i>Scientific Reports</i> , 2018, 8, 8432.	1.6	8
61	Diagnostics of plasma channel for HIF transport. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 2001, 464, 331-338.	0.7	7
62	Diagnostics of discharge channels for neutralized chamber transport in heavy ion fusion. <i>Laser and Particle Beams</i> , 2003, 21, 13-15.	0.4	7
63	Theory of x-ray scattering in high-pressure electrified. <i>Physical Review B</i> , 2012, 86, .	1.1	7
64	Fast gated imaging of the collisionless interaction of a laser-produced and magnetized ambient plasma. <i>High Energy Density Physics</i> , 2017, 22, 17-20.	0.4	7
65	Laboratory study of collisionless coupling between explosive debris plasma and magnetized ambient plasma. <i>Physics of Plasmas</i> , 2017, 24, .	0.7	7
66	Raster Thomson scattering in large-scale laser plasmas produced at high repetition rate. <i>Review of Scientific Instruments</i> , 2021, 92, 093102.	0.6	7
67	High repetition rate exploration of the Biermann battery effect in laser produced plasmas over large spatial regions. <i>High Power Laser Science and Engineering</i> , 2022, 10, .	2.0	7
68	Initiation of long, free-standing discharges by CO2 laser gas heating. <i>Journal of Applied Physics</i> , 2002, 91, 617-623.	1.1	6
69	Experimental investigation of ion beam transport in laser initiated plasma channels. <i>Laser and Particle Beams</i> , 2002, 20, 559-563.	0.4	6
70	A scalable multipass laser cavity based on injection by frequency conversion for noncollective Thomson scattering. <i>Review of Scientific Instruments</i> , 2010, 81, 10D518.	0.6	6
71	Characterization of a spherically bent quartz crystal for K α x-ray imaging of laser plasmas using a focusing monochromator geometry. <i>Journal of Instrumentation</i> , 2011, 6, T03002-T03002.	0.5	6
72	Stimulated forward Raman scattering in large scale-length laser-produced plasmas. <i>Journal of Instrumentation</i> , 2011, 6, P10008-P10008.	0.5	6

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73	Studies of high energy density in matter driven by heavy ion beams in solid targets. Laser and Particle Beams, 2002, 20, 399-403.	0.4	5
74	Feasibility of characterizing laser-ablated carbon plasmas via planar laser induced fluorescence. Review of Scientific Instruments, 2012, 83, 10E515.	0.6	5
75	Spatially resolved Thomson scattering measurements of the transition from the collective to the non-collective regime in a laser-produced plasma. Review of Scientific Instruments, 2016, 87, 11E701.	0.6	5
76	Laser-produced plasmas as drivers of laboratory collisionless quasi-parallel shocks. Physics of Plasmas, 2020, 27, 042103.	0.7	5
77	First Results from the Thomson Scattering Diagnostic on the Large Plasma Device. Instruments, 2022, 6, 17.	0.8	5
78	Gas density measurements with heavy ion beams. Journal of Applied Physics, 2003, 93, 3079-3081.	1.1	4
79	Transmitted laser beam diagnostic at the Omega laser facility. Review of Scientific Instruments, 2004, 75, 4171-4173.	0.6	4
80	Adiabatic Index in Shock-Compressed Beryllium. Contributions To Plasma Physics, 2012, 52, 186-193.	0.5	4
81	Laser-guided, intersecting discharge channels for the final beam transport in heavy-ion fusion. Journal of Applied Physics, 2003, 93, 9470-9476.	1.1	3
82	Density measurements of heavy-ion-beam-induced stress waves in solid matter by a sensitive laser deflection technique. Review of Scientific Instruments, 2004, 75, 1268-1273.	0.6	3
83	Reduction in helium thermal conductivity by 1 mg ^{cc} silica aerogel foam. Applied Physics Letters, 2008, 92, 221913.	1.5	3
84	Ion velocity distribution measurements in a magnetized laser plasma expansion. Journal of Instrumentation, 2010, 5, P06004-P06004.	0.5	3
85	Mapping the ionization state of laser-irradiated Ar gas jets with multiwavelength monochromatic x-ray imaging. Review of Scientific Instruments, 2010, 81, 10E526.	0.6	3
86	Towards a parallel collisionless shock in LAPD. Journal of Physics: Conference Series, 2017, 900, 012020.	0.3	3
87	Measurements of ion velocity distributions in a large scale laser-produced plasma. Review of Scientific Instruments, 2020, 91, 103103.	0.6	3
88	Silica Raman scattering probe for absolute calibration of Thomson scattering spectrometers. Journal of Instrumentation, 2021, 16, P08045.	0.5	3
89	Laser light backscatter from intermediate and high Z plasmas. Physics of Plasmas, 2006, 13, 092702.	0.7	2
90	Magnetic field measurements in low density plasmas using paramagnetic Faraday rotator glass. Review of Scientific Instruments, 2012, 83, 10D503.	0.6	2

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91	Spectroscopic measurement of high-frequency electric fields in the interaction of explosive debris plasma with magnetized background plasma. <i>Physics of Plasmas</i> , 2014, 21, .	0.7	2
92	10.1063/1.3491035.1. , 2010, , .		2
93	Stability of gas discharge channels for final beam transport. <i>Laser and Particle Beams</i> , 2002, 20, 503-509.	0.4	1
94	Experimental investigations of multiple weak shock waves induced by intense heavy ion beams in solid matter. <i>Laser and Particle Beams</i> , 2002, 20, 521-526.	0.4	1
95	Radiation and hot electron temperature measurements of short-pulselaser driven hohlraums. <i>High Energy Density Physics</i> , 2009, 5, 212-215.	0.4	1
96	Effect of electron pressure on debris-ambient coupling in a magnetized collisionless shock. , 2014, , .		0
97	Effect of Electron Pressure on Debris-Ambient Coupling in a Magnetized Collisionless Shock. <i>IEEE Transactions on Plasma Science</i> , 2015, 43, 1815-1819.	0.6	0