Matthias Hohenberger

List of Publications by Year
in descending order

108	3,798	87888	144013
papers	citations	38 h-index	57 g-index

110	110	110	1672
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Burning plasma achieved in inertial fusion. Nature, 2022, 601, 542-548.	27.8	233
2	Inertially confined fusion plasmas dominated by alpha-particle self-heating. Nature Physics, 2016, 12, 800-806.	16.7	144
3	First High-Convergence Cryogenic Implosion in a Near-Vacuum Hohlraum. Physical Review Letters, 2015, 114, 175001.	7.8	117
4	Laser-direct-drive program: Promise, challenge, and path forward. Matter and Radiation at Extremes, 2017, 2, 37-54.	3.9	117
5	Symmetry control of an indirectly driven high-density-carbon implosion at high convergence and high velocity. Physics of Plasmas, 2017, 24, .	1.9	106
6	Origins and Scaling of Hot-Electron Preheat in Ignition-Scale Direct-Drive Inertial Confinement Fusion Experiments. Physical Review Letters, 2018, 120, 055001.	7.8	104
7	Physics issues for shock ignition. Nuclear Fusion, 2014, 54, 054009.	3.5	100
8	The high velocity, high adiabat, â€œBigfootâ€•campaign and tests of indirect-drive implosion scaling. Physics of Plasmas, 2018, 25, .	1.9	90
9	Design of inertial fusion implosions reaching the burning plasma regime. Nature Physics, 2022, 18, 251-258.	16.7	87
10	High-Performance Indirect-Drive Cryogenic Implosions at High Adiabat on the National Ignition Facility. Physical Review Letters, 2018, 121, 135001.	7.8	86
11	Approaching a burning plasma on the NIF. Physics of Plasmas, 2019, 26, .	1.9	83
12	Exploring the limits of case-to-capsule ratio, pulse length, and picket energy for symmetric hohlraum drive on the National Ignition Facility Laser. Physics of Plasmas, 2018, 25, .	1.9	79
13	Spherical shock-ignition experiments with the 40 + 20-beam configuration on OMEGA. Physics of Plasmas, 2012, 19, .	1.9	78
14	Record Energetics for an Inertial Fusion Implosion at NIF. Physical Review Letters, 2021, 126, 025001.	7.8	76
15	Demonstration of Fuel Hot-Spot Pressure in Excess of 50ÂGbar for Direct-Drive, Layered Deuterium-Tritium Implosions on OMEGA. Physical Review Letters, 2016, 117, 025001.	7.8	72
16	First Observation of Cross-Beam Energy Transfer Mitigation for Direct-Drive Inertial Confinement Fusion Implosions Using Wavelength Detuning at the National Ignition Facility. Physical Review Letters, 2018, 120, 085001.	7.8	65
17	Indirect drive ignition at the National Ignition Facility. Plasma Physics and Controlled Fusion, 2017, 59, 014021.	2.1	64
18	Multibeam Stimulated Raman Scattering in Inertial Confinement Fusion Conditions. Physical Review Letters, 2015, 115, 055003.	7.8	62

#	Article	IF	Citations
19	Impact of Localized Radiative Loss on Inertial Confinement Fusion Implosions. Physical Review Letters, 2020, 124, 145001.	7.8	58
20	The relationship between gas fill density and hohlraum drive performance at the National Ignition Facility. Physics of Plasmas, 2017, 24, .	1.9	55
21	Achieving record hot spot energies with large HDC implosions on NIF in HYBRID-E. Physics of Plasmas, 2021, 28, .	1.9	55
22		1.9	52
23	Hotspot conditions achieved in inertial confinement fusion experiments on the National Ignition Facility. Physics of Plasmas, 2020, 27, .	1.9	50
24	Spherical strong-shock generation for shock-ignition inertial fusion. Physics of Plasmas, 2015, 22, .	1.9	49
25	Improving cryogenic deuteriumâ€“tritium implosion performance on OMEGA. Physics of Plasmas, 2013, 20, .	1.9	48
26	Hot-spot mix in large-scale HDC implosions at NIF. Physics of Plasmas, 2020, 27, .	1.9	46
27	Generation and Beaming of Early Hot Electrons onto the Capsule in Laser-Driven Ignition Hohlraums. Physical Review Letters, 2016, 116, 075003.	7.8	45
28	High-energy (>70 keV) x-ray conversion efficiency measurement on the ARC laser at the National Ignition Facility. Physics of Plasmas, 2017, 24, .	1.9	45
29	Shock-ignition relevant experiments with planar targets on OMEGA. Physics of Plasmas, 2014, 21, 022702.	1.9	42
30	Short pulse, high resolution, backlighters for point projection high-energy radiography at the National Ignition Facility. Physics of Plasmas, 2017, 24, .	1.9	42
31	X-ray diffraction at the National Ignition Facility. Review of Scientific Instruments, 2020, 91, 043902.	1.3	42
32	Dynamic Acceleration Effects in Explosions of Laser-Irradiated Heteronuclear Clusters. Physical Review Letters, 2005, 95, 195003.	7.8	40
33	Wavelength-detuning cross-beam energy transfer mitigation scheme for direct drive: Modeling and evidence from National Ignition Facility implosions. Physics of Plasmas, 2018, 25, 056314.	1.9	40
34	Evidence of Three-Dimensional Asymmetries Seeded by High-Density Carbon-Ablator Nonuniformity in Experiments at the National Ignition Facility. Physical Review Letters, 2021, 126, 025002.	7.8	40
35	Pulse-Length Dependence of the Anisotropy of Laser-Driven Cluster Explosions: Transition to the Impulsive Regime for Pulses Approaching the Few-Cycle Limit. Physical Review Letters, 2010, 104, 203401.	7.8	39
36	Time-resolved measurements of the hot-electron population in ignition-scale experiments on the National Ignition Facility (invited). Review of Scientific Instruments, 2014, 85, 11D501.	1.3	39

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37	Performance of indirectly driven capsule implosions on the National Ignition Facility using adiabat-shaping. Physics of Plasmas, 2016, 23, 056303.	1.9	38
38	Progress of indirect drive inertial confinement fusion in the United States. Nuclear Fusion, 2019, 59, 112018.	3.5	38
39	Stimulated Raman scattering mechanisms and scaling behavior in planar direct-drive experiments at the National Ignition Facility. Physics of Plasmas, 2020, 27, .	1.9	38
40	A polar-drive shock-ignition design for the National Ignition Facility. Physics of Plasmas, 2013, 20, .	1.9	37
41	Direct drive: Simulations and results from the National Ignition Facility. Physics of Plasmas, 2016, 23, 056305.	1.9	36
42	Optical Thomson Scattering Measurements of Plasma Parameters in the Ablation Stage of Wire Array<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>Z</mml:mi></mml:math>Pinches. Physical Review Letters, 2012, 108, 145002.	7.8	34
43	Theory and measurements of convective Raman side scatter in inertial confinement fusion experiments. Physical Review E, 2019, 99, 033203.	2.1	34
44	Investigation of ion kinetic effects in direct-drive exploding-pusher implosions at the NIF. Physics of Plasmas, 2014, 21, 122712.	1.9	33
45	Anisotropic Explosions of Hydrogen Clusters under Intense Femtosecond Laser Irradiation. Physical Review Letters, 2007, 98, 123401.	7.8	32
46	First results of radiation-driven, layered deuterium-tritium implosions with a 3-shock adiabat-shaped drive at the National Ignition Facility. Physics of Plasmas, 2015, 22, .	1.9	29
47	The National Ignition Facility Diagnostic Set at the Completion of the National Ignition Campaign, September 2012. Fusion Science and Technology, 2016, 69, 420-451.	1.1	29
48	Polar-drive implosions on OMEGA and the National Ignition Facility. Physics of Plasmas, 2013, 20, .	1.9	28
49	Stimulated backscatter of laser light from BigFoot hohlraums on the National Ignition Facility. Physics of Plasmas, 2019, 26, .	1.9	28
50	Symmetric fielding of the largest diamond capsule implosions on the NIF. Physics of Plasmas, 2020, 27, .	1.9	28
51	Shock timing measurements and analysis in deuterium-tritium-ice layered capsule implosions on NIF. Physics of Plasmas, 2014, 21, 022703.	1.9	27
52	Experimental results of radiation-driven, layered deuterium-tritium implosions with adiabat-shaped drives at the National Ignition Facility. Physics of Plasmas, 2016, 23, .	1.9	27
53	Hot-electron generation at direct-drive ignition-relevant plasma conditions at the National Ignition Facility. Physics of Plasmas, 2020, 27, .	1.9	27
54	Hotspot parameter scaling with velocity and yield for high-adiabat layered implosions at the National Ignition Facility. Physical Review E, 2020, 102, 023210.	2.1	25

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55	Yield and compression trends and reproducibility at NIF*. High Energy Density Physics, 2020, 36, 100755.	1.5	25
56	Observation of a Velocity Domain Cooling Instability in a Radiative Shock. Physical Review Letters, 2010, 105, 205003.	7.8	23
57	Measurements of the ablation-front trajectory and low-mode nonuniformity in direct-drive implosions using x-ray self-emission shadowgraphy. High Power Laser Science and Engineering, 2015, 3, .	4.6	22
58	Integrated performance of large HDC-capsule implosions on the National Ignition Facility. Physics of Plasmas, 2020, 27, .	1.9	22
59	Investigating the Astrophysical Applicability of Radiative and Non-Radiative Blast wave Structure in Cluster Media. Astrophysics and Space Science, 2007, 307, 139-145.	1.4	21
60	Bright x-ray stainless steel K-shell source development at the National Ignition Facility. Physics of Plasmas, 2015, 22, .	1.9	21
61	Mix and hydrodynamic instabilities on NIF. Journal of Instrumentation, 2017, 12, C06001-C06001.	1.2	21
62	High resolution imaging of colliding blast waves in cluster media. Plasma Physics and Controlled Fusion, 2007, 49, B117-B124.	2.1	20
63	Progress towards polar-drive ignition for the NIF. Nuclear Fusion, 2013, 53, 113021.	3.5	20
64	Development of an inertial confinement fusion platform to study charged-particle-producing nuclear reactions relevant to nuclear astrophysics. Physics of Plasmas, 2017, 24, .	1.9	20
65	Achieving 280 Gbar hot spot pressure in DT-layered CH capsule implosions at the National Ignition Facility. Physics of Plasmas, 2020, 27, .	1.9	20
66	Investigations of laser-driven radiative blast waves in clustered gases. High Energy Density Physics, 2010, 6, 274-279.	1.5	19
67	The size and structure of the laser entrance hole in gas-filled hohlraums at the National Ignition Facility. Physics of Plasmas, 2015, 22, .	1.9	19
68	Isolating and quantifying cross-beam energy transfer in direct-drive implosions on OMEGA and the National Ignition Facility. Physics of Plasmas, 2016, 23, .	1.9	19
69	Trending low mode asymmetries in NIF capsule drive using a simple viewfactor metric *. High Energy Density Physics, 2021, 40, 100944.	1.5	19
70	Application of cross-beam energy transfer to control drive symmetry in ICF implosions in low gas fill Hohlraums at the National Ignition Facility. Physics of Plasmas, 2020, 27, .	1.9	18
71	A high-speed two-frame, 1-2 ns gated X-ray CMOS imager used as a hohlraum diagnostic on the National Ignition Facility (invited). Review of Scientific Instruments, 2016, 87, 11E203.	1.3	16
72	A compact proton spectrometer for measurement of the absolute DD proton spectrum from which yield and ÏR are determined in thin-shell inertial-confinement-fusion implosions. Review of Scientific Instruments, 2014, 85, 103504.	1.3	15

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73	Low mode implosion symmetry sensitivity in low gas-fill NIF cylindrical hohlraums. Physics of Plasmas, 2021, 28, .	1.9	15
74	eHXI: a permanently installed, hard x-ray imager for the National Ignition Facility. Journal of Instrumentation, 2016, 11, P06010-P06010.	1.2	14
75	Maintaining low-mode symmetry control with extended pulse shapes for lower-adiabat Bigfoot implosions on the National Ignition Facility. Physics of Plasmas, 2019, 26, .	1.9	14
76	Colliding Blast Waves Driven by the Interaction of a Short-Pulse Laser with a Gas of Atomic Clusters. Astrophysics and Space Science, 2007, 307, 131-137.	1.4	13
77	Soft x-ray backlighting of direct-drive implosions using a spherical crystal imager on OMEGA. Review of Scientific Instruments, 2012, 83, 10E501.	1.3	13
78	A magnetic particle time-of-flight (MagPTOF) diagnostic for measurements of shock- and compression-bang time at the NIF (invited). Review of Scientific Instruments, 2014, 85, 11D901.	1.3	12
79	The National Direct-Drive Program: OMEGA to the National Ignition Facility. Fusion Science and Technology, 2018, 73, 89-97.	1.1	12
80	Deficiencies in compression and yield in x-ray-driven implosions. Physics of Plasmas, 2020, 27, .	1.9	12
81	Laser irradiance scaling in polar direct drive implosions on the National Ignition Facility. Physics of Plasmas, 2015, 22, .	1.9	11
82	Experiments to explore the influence of pulse shaping at the National Ignition Facility. Physics of Plasmas, 2020, 27, 112708.	1.9	11
83	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
84	The National Direct-Drive Inertial Confinement Fusion Program. Nuclear Fusion, 2019, 59, 032007.	3.5	10
85	Laser heating of large noble gas clusters: from the resonant to the relativistic interaction regimes. New Journal of Physics, 2008, 10, 123011.	2.9	9
86	Optical smoothing of laser imprinting in planar-target experiments on OMEGA EP using multi-FM 1-D smoothing by spectral dispersion. Physics of Plasmas, 2016, 23, .	1.9	9
87	A direct-drive exploding-pusher implosion as the first step in development of a monoenergetic charged-particle backlighting platform at the National Ignition Facility. High Energy Density Physics, 2016, 18, 38-44.	1.5	9
88	Demonstration of a long pulse X-ray source at the National Ignition Facility. Physics of Plasmas, 2017, 24, .	1.9	9
89	Optimization of high energy x ray production through laser plasma interaction. High Energy Density Physics, 2019, 31, 13-18.	1.5	8
90	Developing a bright 17â€‰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

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91	X-ray self-emission imaging used to diagnose 3-D nonuniformities in direct-drive ICF implosions. Review of Scientific Instruments, 2016, 87, 11E340.	1.3	7
92	Principal factors in performance of indirect-drive laser fusion experiments. Physics of Plasmas, 2020, 27, .	1.9	7
93	Determination of the average ionization and thermodynamic regimes of xenon plasmas with an application to the characterization of blast waves launched in xenon clusters. High Energy Density Physics, 2011, 7, 71-76.	1.5	6
94	Hydrodynamic simulations of long-scale-length plasmas for two-plasmon-decay planar-target experiments on the NIF. Journal of Physics: Conference Series, 2016, 717, 012053.	0.4	6
95	Analysis of microscopic magnitudes of radiative blast waves launched in xenon clusters with collisional-radiative steady-state simulations. Journal of Quantitative Spectroscopy and Radiative Transfer, 2013, 125, 69-83.	2.3	5
96	Enhanced direct-drive implosion performance on NIF with wavelength separation. Physics of Plasmas, 2020, 27, 124501.	1.9	5
97	Measuring the hot-electron population using time-resolved hard x-ray detectors on the NIF. Proceedings of SPIE, 2013, , .	0.8	4
98	Improved hard x-ray (50-80 keV) imaging of hohlraum implosion experiments at the National Ignition Facility. Proceedings of SPIE, 2016, , .	0.8	4
99	Developing â€œinverted-coronaâ€•fusion targets as high-fluence neutron sources. Review of Scientific Instruments, 2021, 92, 033544.	1.3	4
100	Interpenetration and kinetic effects in converging, high-energy plasma jets. High Energy Density Physics, 2020, 37, 100861.	1.5	4
101	Hydroscaling indirect-drive implosions on the National Ignition Facility. Physics of Plasmas, 2022, 29, .	1.9	4
102	X-ray spectroscopy of planar laser-plasma interaction experiments at the National Ignition Facility. Physics of Plasmas, 2019, 26, .	1.9	3
103	Polar-direct-drive experiments at the National Ignition Facility. Journal of Physics: Conference Series, 2016, 717, 012009.	0.4	1
104	Kinetic mix at gas-shell interface in inverted corona fusion targets. Physics of Plasmas, 2021, 28, 122702.	1.9	1
105	Time-dependent and radiation field effects on collisional-radiative simulations of radiative properties of blast waves launched in clusters of xenon. High Energy Density Physics, 2015, 17, 119-128.	1.5	0
106	Performance of indirectly driven capsule implosions on NIF using adiabat-shaping. Journal of Physics: Conference Series, 2016, 717, 012045.	0.4	0
107	Time resolved detection of two-plasmon decay using three-halves harmonic emission on the National Ignition Facility. Review of Scientific Instruments, 2018, 89, 083504.	1.3	0
108	10.1063/1.5022181.1. , 2018, , .		0