Christian Stoeckl

List of Publications by Year
in descending order

84 papers	3,900 citations	136950 32 h-index	123424 61 g-index
84 all docs	84 docs citations	84 times ranked	1699 citing authors

#	Article	IF	Citations
1	Direct-drive inertial confinement fusion: A review. Physics of Plasmas, 2015, 22, .	1.9	521
2	High-energy KÎ± radiography using high-intensity, short-pulse lasers. Physics of Plasmas, 2006, 13, 056309.	1.9	193
3	High-Energy Petawatt Capability for the Omega Laser. Optics and Photonics News, 2005, 16, 30.	0.5	183
4	Crossed-beam energy transfer in implosion experiments on OMEGA. Physics of Plasmas, 2010, 17, .	1.9	142
5	Improving the hot-spot pressure and demonstrating ignition hydrodynamic equivalence in cryogenic deuteriumâ€“tritium implosions on OMEGA. Physics of Plasmas, 2014, 21, .	1.9	139
6	Crossed-beam energy transfer in direct-drive implosions. Physics of Plasmas, 2012, 19, .	1.9	133
7	Two-dimensional simulations of plastic-shell, direct-drive implosions on OMEGA. Physics of Plasmas, 2005, 12, 032702.	1.9	126
8	The National Ignition Facility neutron time-of-flight system and its initial performance (invited). Review of Scientific Instruments, 2010, 81, 10D325.	1.3	121
9	Neutron spectrometryâ€"An essential tool for diagnosing implosions at the National Ignition Facility (invited). Review of Scientific Instruments, 2012, 83, 10D308.	1.3	117
10	Demonstration of the Highest Deuterium-Tritium Areal Density Using Multiple-Picket Cryogenic Designs on OMEGA. Physical Review Letters, 2010, 104, 165001.	7.8	111
11	Tripled yield in direct-drive laser fusion through statistical modelling. Nature, 2019, 565, 581-586.	27.8	103
12	Multibeam Effects on Fast-Electron Generation from Two-Plasmon-Decay Instability. Physical Review Letters, 2003, 90, 235002.	7.8	95
13	Performance of direct-drive cryogenic targets on OMEGA. Physics of Plasmas, 2008, 15, .	1.9	92
14	Prototypes of National Ignition Facility neutron time-of-flight detectors tested on OMEGA. Review of Scientific Instruments, 2004, 75, 3559-3562.	1.3	77
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	Role of Hot-Electron Preheating in the Compression of Direct-Drive Imploding Targets with Cryogenic<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mi mathvariant="normal">D</mml:mi><mml:mn>2</mml:mn></mml:msub></mml:math>Ablators. Physical Review Letters, 2008, 100, 185005.	7.8	69
17	Three-dimensional modeling of direct-drive cryogenic implosions on OMEGA. Physics of Plasmas, 2016, 23, .	1.9	69
18	Hard x-ray detectors for OMEGA and NIF. Review of Scientific Instruments, 2001, 72, 1197-1200.	1.3	68

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19	Ion Thermal Decoupling and Species Separation in Shock-Driven Implosions. Physical Review Letters, 2015, 114, 025001.	7.8	67
20	Nuclear imaging of the fuel assembly in ignition experiments. Physics of Plasmas, 2013, 20, 056320.	1.9	65
21	Saturation of the Two-Plasmon Decay Instability in Long-Scale-Length Plasmas Relevant to Direct-Drive Inertial Confinement Fusion. Physical Review Letters, 2012, 108, 165003.	7.8	58
22	High-resolution spectroscopy used to measure inertial confinement fusion neutron spectra on Omega (invited). Review of Scientific Instruments, 2012, 83, 10D919.	1.3	54
23	A neutron spectrometer for precise measurements of DT neutrons from 10 to 18 MeV at OMEGA and the National Ignition Facility. Review of Scientific Instruments, 2001, 72, 854-858.	1.3	50
24	Scaling Hot-Electron Generation to High-Power, Kilojoule-Class Laser-Solid Interactions. Physical Review Letters, 2010, 105, 235001.	7.8	49
25	Improving cryogenic deuteriumâ€"tritium implosion performance on OMEGA. Physics of Plasmas, 2013, 20, .	1.9	48
26	A spherical crystal imager for OMEGA EP. Review of Scientific Instruments, 2012, 83, 033107.	1.3	47
27	Measured hot-electron intensity thresholds quantified by a two-plasmon-decay resonant common-wave gain in various experimental configurations. Physics of Plasmas, 2013, 20, .	1.9	47
28	Fast-electron generation in long-scale-length plasmas. Physics of Plasmas, 2012, 19, .	1.9	46
29	Study of direct-drive, deuteriumâ€"tritium gas-filled plastic capsule implosions using nuclear diagnostics at OMEGA. Physics of Plasmas, 2001, 8, 4902-4913.	1.9	43
30	CVD diamond as a high bandwidth neutron detector for inertial confinement fusion diagnostics. Review of Scientific Instruments, 2003, 74, 1828-1831.	1.3	40
31	Understanding the effects of laser imprint on plastic-target implosions on OMEGA. Physics of Plasmas, 2016, 23, .	1.9	38
32	Measurement of preheat due to fast electrons in laser implosions. Physics of Plasmas, 2000, 7, 3714-3720.	1.9	33
33	Neutron temporal diagnostic for high-yield deuteriumâ€"tritium cryogenic implosions on OMEGA. Review of Scientific Instruments, 2016, 87, 053501.	1.3	33
34	Measurement of preheat due to fast electrons in laser implosions of cryogenic deuterium targets. Physics of Plasmas, 2005, 12, 062703.	1.9	32
35	Note: Spatial resolution of Fuji BAS-TR and BAS-SR imaging plates. Review of Scientific Instruments, 2012, 83, 086103.	1.3	31
36	Operation of target diagnostics in a petawatt laser environment (invited). Review of Scientific Instruments, 2006, 77, 10F506.	1.3	30

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37	Measurements of the divergence of fast electrons in laser-irradiated spherical targets. Physics of Plasmas, 2013, 20, 092706.	1.9	30
38	A gated liquid-scintillator-based neutron detector for fast-ignitor experiments and down-scattered neutron measurements. Review of Scientific Instruments, 2010, 81, 10D302.	1.3	29
39	A framed, 16-image Kirkpatrickâ€“Baez x-ray microscope. Review of Scientific Instruments, 2017, 88, 093702.	1.3	29
40	Two-Plasmon Decay Mitigation in Direct-Drive Inertial-Confinement-Fusion Experiments Using Multilayer Targets. Physical Review Letters, 2016, 116, 155002.	7.8	27
41	Hot-electron generation at direct-drive ignition-relevant plasma conditions at the National Ignition Facility. Physics of Plasmas, 2020, 27, .	1.9	27
42	Three-dimensional hydrodynamic simulations of OMEGA implosions. Physics of Plasmas, 2017, 24, .	1.9	26
43	The single-line-of-sight, time-resolved x-ray imager diagnostic on OMEGA. Review of Scientific Instruments, 2018, 89, 10G117.	1.3	26
44	Mitigation of mode-one asymmetry in laser-direct-drive inertial confinement fusion implosions. Physics of Plasmas, 2021, 28, .	1.9	26
45	Soft x-ray backlighting of cryogenic implosions using a narrowband crystal imaging system (invited). Review of Scientific Instruments, 2014, 85, 11E501.	1.3	24
46	A new neutron time-of-flight detector for fuel-areal-density measurements on OMEGA. Review of Scientific Instruments, 2014, 85, 11E102.	1.3	23
47	A suite of neutron time-of-flight detectors to measure hot-spot motion in direct-drive inertial confinement fusion experiments on OMEGA. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2020, 964, 163774.	1.6	23
48	Experimentally Inferred Fusion Yield Dependencies of OMEGA Inertial Confinement Fusion Implosions. Physical Review Letters, 2021, 127, 105001.	7.8	23
49	A Particle X-ray Temporal Diagnostic (PXTD) for studies of kinetic, multi-ion effects, and ion-electron equilibration rates in Inertial Confinement Fusion plasmas at OMEGA (invited). Review of Scientific Instruments, 2016, 87, 11D701.	1.3	22
50	Anomalous Absorption by the Two-Plasmon Decay Instability. Physical Review Letters, 2020, 124, 185001.	7.8	22
51	Monochromatic backlighting of direct-drive cryogenic DT implosions on OMEGA. Physics of Plasmas, 2017, 24, .	1.9	21
52	Calibration of a neutron time-of-flight detector with a rapid instrument response function for measurements of bulk fluid motion on OMEGA. Review of Scientific Instruments, 2018, 89, 10I131.	1.3	21
53	Wide-dynamic-range â€œneutron bang timeâ€•detector on OMEGA. Review of Scientific Instruments, 2002, 73, 3796-3800.	1.3	18
54	Impact of asymmetries on fuel performance in inertial confinement fusion. Physical Review E, 2018, 98, .	2.1	16

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55	Impact of imposed mode 2 laser drive asymmetry on inertial confinement fusion implosions. Physics of Plasmas, 2019, 26, .	1.9	15
56	Impact of stalk on directly driven inertial confinement fusion implosions. Physics of Plasmas, 2020, 27, 032704.	1.9	15
57	X-ray backlighter requirements for refraction-based electron density diagnostics through Talbot-Lau deflectometry. Review of Scientific Instruments, 2018, 89, 10G127.	1.3	13
58	Measurement of apparent ion temperature using the magnetic recoil spectrometer at the OMEGA laser facility. Review of Scientific Instruments, 2018, 89, 10I129.	1.3	12
59	Implementation of a Talbotâ€“Lau x-ray deflectometer diagnostic platform for the OMEGA EP laser. Review of Scientific Instruments, 2020, 91, 023511.	1.3	12
60	High-resolution x-ray radiography with Fresnel zone plates on the University of Rochesterâ€™s OMEGA Laser Systems. Review of Scientific Instruments, 2021, 92, 033701.	1.3	12
61	An x-ray backlit Talbot-Lau deflectometer for high-energy-density electron density diagnostics. Review of Scientific Instruments, 2016, 87, 023505.	1.3	11
62	Reconstructing 3D asymmetries in laser-direct-drive implosions on OMEGA. Review of Scientific Instruments, 2021, 92, 033529.	1.3	11
63	High-intensity laser-plasma interaction with wedge-shaped-cavity targets. Physics of Plasmas, 2010, 17, .	1.9	10
64	Calibration of a time-resolved hard-x-ray detector using radioactive sources. Review of Scientific Instruments, 2016, 87, 11E323.	1.3	10
65	Impact of spatiotemporal smoothing on the two-plasmonâ€“decay instability. Physics of Plasmas, 2020, 27, .	1.9	10
66	Time-resolved K_{<i>Î±</i>}spectroscopy measurements of hot-electron equilibration dynamics in thin-foil solid targets: collisional and collective effects. Journal of Physics B: Atomic, Molecular and Optical Physics, 2015, 48, 224001.	1.5	9
67	Nuclear science experiments with a bright neutron source from fusion reactions on the OMEGA Laser System. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2018, 888, 169-176.	1.6	9
68	Deuteron breakup induced by 14-MeV neutrons from inertial confinement fusion. Physical Review C, 2019, 100, .	2.9	9
69	Order-of-magnitude laser imprint reduction using pre-expanded high-Z coatings on targets driven by a third harmonic Nd:glass laser. Physics of Plasmas, 2021, 28, .	1.9	9
70	Enhanced laser-energy coupling with small-spot distributed phase plates (SG5-650) in OMEGA DT cryogenic target implosions. Physics of Plasmas, 2022, 29, .	1.9	9
71	Causes of fuelâ€“ablator mix inferred from modeling of monochromatic time-gated radiography of OMEGA cryogenic implosions. Physics of Plasmas, 2022, 29, .	1.9	8
72	Testing a Cherenkov neutron time-of-flight detector on OMEGA. Review of Scientific Instruments, 2018, 89, 10I122.	1.3	7

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73	Measurements of the temperature and velocity of the dense fuel layer in inertial confinement fusion experiments. Physical Review E, 2022, 105, .	2.1	5
74	Simulation and analysis of time-gated monochromatic radiographs of cryogenic implosions on OMEGA. High Energy Density Physics, 2017, 23, 167-177.	1.5	4
75	A novel photomultiplier tube neutron time-of-flight detector. Review of Scientific Instruments, 2021, 92, 013509.	1.3	4
76	Application of an energy-dependent instrument response function to analysis of nTOF data from cryogenic DT experiments. Review of Scientific Instruments, 2021, 92, 043546.	1.3	4
77	Using statistical modeling to predict and understand fusion experiments. Physics of Plasmas, 2021, 28, .	1.9	4
78	A multi-channel x-ray temporal diagnostic for measurement of time-resolved electron temperature in cryogenic deuteriumâ€“tritium implosions at OMEGA. Review of Scientific Instruments, 2021, 92, 023507.	1.3	3
79	Talbot-Lau x-ray deflectometer: Refraction-based HEDP imaging diagnostic. Review of Scientific Instruments, 2021, 92, 065110.	1.3	3
80	Using millimeter-sized carbonâ€“deuterium foils for high-precision deuteriumâ€“tritium neutron spectrum measurements in direct-drive inertial confinement fusion at the OMEGA laser facility. Review of Scientific Instruments, 2021, 92, 023503.	1.3	2
81	Improved imaging using Mn He-Î± x rays at OMEGA EP. Review of Scientific Instruments, 2021, 92, 093508.	1.3	2
82	Self-radiography of imploded shells on OMEGA based on additive-free multi-monochromatic continuum spectral analysis. Physics of Plasmas, 2020, 27, .	1.9	1
83	Demonstration of plasma mirror capability for the OMEGA Extended Performance laser system. Review of Scientific Instruments, 2022, 93, 043006.	1.3	1
84	Analysis of limited coverage effects on areal density measurements in inertial confinement fusion implosions. Physics of Plasmas, 2022, 29, .	1.9	1