David Ampleford

List of Publications by Year
in descending order

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136 papers	2,434 citations	201674 27 h-index	233421 45 g-index
140 all docs	140 docs citations	140 times ranked	945 citing authors

#	Article	IF	Citations
1	An overview of magneto-inertial fusion on the Z machine at Sandia National Laboratories. Nuclear Fusion, 2022, 62, 042015.	3.5	35
2	A Forward Analytic Model of Neutron Time-of-Flight Signals for Inferring Ion Temperatures from MagLIF Experiments. Fusion Science and Technology, 2022, 78, 119-133.	1.1	1
3	Estimation of stagnation performance metrics in magnetized liner inertial fusion experiments using Bayesian data assimilation. Physics of Plasmas, 2022, 29, .	1.9	11
4	Bright-Spot Contributions to Hardphoton Continuum K-Shell Yield from Argon and Stainless-Steel Load Implosions on Z. , 2022, , .		0
5	Inertial Confinement Fusion - Experimental Physics: Z-Pinch and Magnetized Liner Inertial Fusion. , 2021, , 739-750.		0
6	A time-resolved, in-chamber x-ray pinhole imager for Z. Review of Scientific Instruments, 2021, 92, 033512.	1.3	4
7	Deep-learning-enabled Bayesian inference of fuel magnetization in magnetized liner inertial fusion. Physics of Plasmas, 2021, 28, .	1.9	16
8	Measuring mix in MagLIF experiments at the NIF*. , 2021, , .		0
9	Increased preheat energy to MagLIF targets with cryogenic cooling. , 2021, , .		0
10	Magnetic field effects on laser energy deposition and filamentation in magneto-inertial fusion relevant plasmas. Physics of Plasmas, 2021, 28, .	1.9	3
11	Performance Scaling in Magnetized Liner Inertial Fusion Experiments. Physical Review Letters, 2020, 125, 155002.	7.8	65
12	Review of pulsed power-driven high energy density physics research on Z at Sandia. Physics of Plasmas, 2020, 27, .	1.9	140
13	A neutron recoil-spectrometer for measuring yield and determining liner areal densities at the Z facility. Review of Scientific Instruments, 2020, 91, 073501.	1.3	5
14	Quantification of MagLIF morphology using the Mallat scattering transformation. Physics of Plasmas, 2020, 27, .	1.9	9
15	Constraining preheat energy deposition in MagLIF experiments with multi-frame shadowgraphy. Physics of Plasmas, 2019, 26, .	1.9	27
16	Assessing Stagnation Conditions and Identifying Trends in Magnetized Liner Inertial Fusion. IEEE Transactions on Plasma Science, 2019, 47, 2081-2101.	1.3	36
17	Design and testing of a magnetically driven implosion peak current diagnostic. Physics of Plasmas, 2018, 25, 042702.	1.9	8
18	Diagnosing and mitigating laser preheat induced mix in MagLIF. Physics of Plasmas, 2018, 25, .	1.9	33

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19	One dimensional imager of neutrons on the Z machine. Review of Scientific Instruments, 2018, 89, 10I132.	1.3	12
20	Enhancing performance of magnetized liner inertial fusion at the Z facility. Physics of Plasmas, 2018, 25, .	1.9	34
21	Characterization and calibration of a multilayer coated Wolter optic for an imager on the Z-machine at Sandia National Laboratories. Review of Scientific Instruments, 2018, 89, 10G114.	1.3	9
22	A Wolter imager on the Z machine to diagnose warm x-ray sources. Review of Scientific Instruments, 2018, 89, 10G115.	1.3	16
23	An x-ray optic calibration facility for high energy density diagnostics. Review of Scientific Instruments, 2018, 89, 10G112.	1.3	12
24	Design and raytrace simulations of a multilayer-coated Wolter x-ray optic for the Z machine at Sandia National Laboratories. Review of Scientific Instruments, 2018, 89, 10G113.	1.3	10
25	Modeling the one-dimensional imager of neutrons (ODIN) for neutron response functions at the Sandia Z facility. Review of Scientific Instruments, 2018, 89, 10I121.	1.3	4
26	A new time and space resolved transmission spectrometer for research in inertial confinement fusion and radiation source development. Review of Scientific Instruments, 2017, 88, 013504.	1.3	6
27	Coarse spectral characterization of warm x-rays at the Z facility using a filtered thermoluminescent dosimeter array. Review of Scientific Instruments, 2017, 88, 043501.	1.3	7
28	The differential absorption hard x-ray spectrometer at the Z facility. IEEE Transactions on Plasma Science, 2017, 45, 2393-2398.	1.3	3
29	A 7.2 keV spherical x-ray crystal backlighter for two-frame, two-color backlighting at Sandiaâ€™s Z Pulsed Power Facility. Review of Scientific Instruments, 2017, 88, 103503.	1.3	12
30	Characterization of multilayer coated replicated Wolter optics for imaging x-ray emission from pulsed power. , 2017, , .		2
31	A non-LTE analysis of high energy density Kr plasmas on Z and NIF. Physics of Plasmas, 2016, 23, 101208.	1.9	4
32	Effects of a Xe dopant on an Ar gas-puff implosion on Z. Physics of Plasmas, 2016, 23, .	1.9	3
33	Investigating the effect of adding an on-axis jet to Ar gas puff Z pinches on Z. Physics of Plasmas, 2016, 23, .	1.9	13
34	High energy X-ray pinhole imaging at the Z facility. Review of Scientific Instruments, 2016, 87, 063502.	1.3	18
35	The effect of gradients at stagnation on K-shell x-ray line emission in high-current Ar gas-puff implosions. Physics of Plasmas, 2015, 22, 020706.	1.9	20
36	Plasmas, 2015, 22, 056316.	1.9	13

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37	Investigation of radiative bow-shocks in magnetically accelerated plasma flows. Physics of Plasmas, 2015, 22, 052710.	1.9	10
38	2-D RMHD Modeling Assessment of Current Flow, Plasma Conditions, and Doppler Effects in Recent Z Argon Experiments. IEEE Transactions on Plasma Science, 2015, 43, 2480-2491.	1.3	42
39	Wire-Array Z-Pinch Length Variations for K-Shell X-Ray Generation on Z. IEEE Transactions on Plasma Science, 2015, 43, 2509-2514.	1.3	2
40	Investigating Radial Wire Array <inline-formula> <tex-math notation="LaTeX">Z </tex-math></inline-formula>-Pinches as a Compact X-Ray Source on the Saturn Generator. IEEE Transactions on Plasma Science, 2015, 43, 3344-3352.	1.3	1
41	Diagnostic constraints on the amount of cold mass in imploded argon pinches on Z. , 2014, , .		1
42	A Renewed Capability for Gas Puff Science on Sandia's Z Machine. IEEE Transactions on Plasma Science, 2014, 42, 1145-1152.	1.3	62
43	Opacity and gradients in aluminum wire array z-pinch implosions on the Z pulsed power facility. Physics of Plasmas, 2014, 21, 031201.	1.9	22
44	X-ray power and yield measurements at the refurbished Z machine. Review of Scientific Instruments, 2014, 85, 083501.	1.3	68
45	Signatures of hot electrons and fluorescence in Mo KÎ± emission on Z. Physics of Plasmas, 2014, 21, .	1.9	19
46	Contrasting physics in wire array z pinch sources of 1-20â€‰keV emission on the Z facility. Physics of Plasmas, 2014, 21, .	1.9	36
47	Investigation of radiative bow-shocks in magnetically accelerated plasma flows. , 2013, , .		0
48	Effect of wire material on wire array implosions. , 2013, , .		1
49	Analysis of spatially resolved Z-pinch spectra to investigate the nature of â€œbright spotsâ€• Physics of Plasmas, 2013, 20, .	1.9	14
50	K-shell emission trends from 60 to 130â€‰cm/Î¼s stainless steel implosions. Physics of Plasmas, 2013, 20, 103116.	1.9	18
51	Architecture, implementation, and testing of a multiple-shell gas injection system for high current implosions on the Z accelerator. Review of Scientific Instruments, 2013, 84, 063504.	1.3	16
52	A renewed argon gas puff capability on Sandia's Z machine. , 2013, , .		0
53	Guest Editorial Special Issue on Z-Pinch Plasmas. IEEE Transactions on Plasma Science, 2012, 40, 3186-3188.	1.3	1
54	Development and use of a two-dimensional interferometer to measure mass flow from a multi-shell Z-pinch gas puff. Review of Scientific Instruments, 2012, 83, 083116.	1.3	14

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55	Simulation of synthetic spectra of bright spots for Ar and KR gas puff on Zr. , 2012, , .		1
56	Investigation of High-Temperature Bright Plasma X-ray Sources Produced in 5-MA X-Pinch Experiments. Physical Review Letters, 2012, 109, 155002.	7.8	27
57	Comparative properties of copper wire array implosions driven by the pre-refurbished and post-refurbished generator. , 2012, , .		0
58	K-shell radiation yields on a 60 MA Z-pinch generator. , 2012, , .		1
59	Magnetically Driven Implosions for Inertial Confinement Fusion at Sandia National Laboratories. IEEE Transactions on Plasma Science, 2012, 40, 3222-3245.	1.3	154
60	Shock model description of the interaction radiation pulse in nested wire array z-pinches. Physics of Plasmas, 2012, 19, 122711.	1.9	3
61	Characterization of Fine Metallic Wires for Wire-Array Z-Pinch Experiments. IEEE Transactions on Plasma Science, 2012, 40, 3372-3377.	1.3	1
62	Demonstration of Radiation Pulse-Shaping Capabilities Using Nested Conical Wire-Array Z-Pinches. IEEE Transactions on Plasma Science, 2012, 40, 3334-3346.	1.3	2
63	2D radiation MHD model assessment of initial argon gas distributions to be imploded on the Z machine. , 2011, , .		0
64	Multi-color gated x-ray pinhole imaging of Z-pinch implosions on the Saturn and Z pulsed power generators. , 2011, , .		0
65	3-dimensional modeling of nested Al and Ni-clad Ti on Al wire array Z pinches. , 2011, , .		0
66	Stagnation and Disruption of Wire Array Z-Pinch Radiation Sources on the Z Pulsed Power Generator. IEEE Transactions on Plasma Science, 2011, 39, 2416-2417.	1.3	0
67	Spectroscopic measurements in the post-hole convolute on Sandia's Z-Machine (invited). , 2011, , .		2
68	Extreme-UV Self-Emission From Plasma-Focus Radial Wire Array. IEEE Transactions on Plasma Science, 2011, 39, 2420-2421.	1.3	1
69	Doppler measurement of implosion velocity in fastZ-pinch x-ray sources. Physical Review E, 2011, 84, 056408.	2.1	18
70	Compact, rugged in-chamber transmission spectrometers (7â€“28 keV) for the Sandia Z facility. Review of Scientific Instruments, 2011, 82, 063113.	1.3	32
71	Diagnosing copper wire array implosions on refurbished Z with detailed radiation-hydrodynamic models. , 2011, , .		0
72	Anodeâ€“Cathode Asymmetry in a Wire-Array Z-Pinch: Highly Resolved Axial-Shear-Flow Structure Observed on the Outer Edges of Ablating Wires. IEEE Transactions on Plasma Science, 2011, 39, 2430-2431.	1.3	2

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73	Wire array Z-pinch length variations for K-shell x-ray generation on Z. , 2010, , .		0
74	Modeling Cu wire array impolosions on the refurbished Z generator. , 2010, , .		0
75	Investigation Of bow shock formation in pulsed-power-driven super-sonic plasma flows. , 2010, , .		0
76	L-shell spectroscopic diagnostics of imploding wire array plasmas. , 2010, , .		0
77	3-dimensional modeling of large diameter wire array high intensity K-shell radiation sources. , 2010, , .		0
78	Time-Integrated Synthetic X-Ray Spectroscopy for Stainless Steel Wire Array Z-Pinches. IEEE Transactions on Plasma Science, 2010, 38, 598-605.	1.3	6
79	Circuit Model for Driving Three-Dimensional Resistive MHD Wire Array Z-Pinch Calculations. IEEE Transactions on Plasma Science, 2010, 38, 529-539.	1.3	48
80	Development of an 85KJ stainless steel K-shell X-ray source on the Z generator. , 2010, , .		0
81	Synthetic time and space resolved spectra including Doppler splitting from simulations of stainless steel pinches on refurbished Z. , 2010, , .		0
82	Simulations of the implosion and stagnation of compact wire arrays. Physics of Plasmas, 2010, 17, .	1.9	59
83	Bow shocks in ablated plasma streams for nested wire array z-pinches: A laboratory astrophysics testbed for radiatively cooled shocks. Physics of Plasmas, 2010, 17, .	1.9	17
84	Planar Wire-Array<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>Z</mml:mi></mml:math>-Pinch Implosion Dynamics and X-Ray Scaling at Multiple-MA Drive Currents for a Compact Multisource Hohlraum Configuration. Physical Review Letters, 2010, 104, 125001.	7.8	41
85	Study of the effect of current rise time on the formation of the precursor column in cylindrical wire array Z pinches at 1 MA. Physics of Plasmas, 2009, 16, .	1.9	20
86	Observation of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mo>></mml:mo><mml:mn>400</mml:mn><mml:mtext mathvariant="normal">â^'</mml:mtext><mml:mi>eV</mml:mi></mml:math>Precursor Plasmas from Low-Wire-Number Copper Arrays at the 1-MA Zebra Facility. Physical Review Letters, 2009, 102, 155006.	7.8	14
87	Current losses in wire array Z-pinches on the Z generator. , 2009, , .		2
88	Two-dimensional radiation MHD modeling of stainless steel and Cu wire array Z-pinch implosions. , 2009, , .		0
89	Generation of shear flow in conical wire arrays with a center wire. Astrophysics and Space Science, 2009, 322, 205-208.	1.4	7
90	Ablation dynamics and stagnation physics of copper wire array Z-pinch implosions at 20 MA. , 2009, , .		0

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91	Large diameter copper wire array implosions for K-shell x-ray generation on the refurbished Z machine. , 2009, , .		2
92	ZR-convolute analysis and modeling: Plasma evolution and dynamics leading to current losses. , 2009, , .		4
93	High powers from large diameter wire arrays on the refurbished Z generator. , 2009, , .		2
94	Wire array z-pinch implosion dynamics and radiation with a 1D ablation model. , 2008, , .		0
95	Quantitative Measurements of Wire Ablation in Tungsten X-pinches at 80 kA. IEEE Transactions on Plasma Science, 2008, 36, 2759-2764.	1.3	10
96	Radial wire array Z-pinches as a driver for HEDP experiments. , 2008, , .		0
97	Implosion dynamics and K-shell x-ray generation in large diameter stainless steel wire array Z pinches with various nesting configurations. Physics of Plasmas, 2008, 15, .	1.9	37
98	Radiography of Modulated Wire Array Z-Pinches. IEEE Transactions on Plasma Science, 2008, 36, 1270-1271.	1.3	6
99	Radiography of Foam Targets in Wire-Array Z-Pinches. IEEE Transactions on Plasma Science, 2008, 36, 1272-1273.	1.3	3
100	Bright spots in 1 MA X pinches as a function of wire number and material. Physics of Plasmas, 2008, 15, 092703.	1.9	27
101	Supersonic Radiatively Cooled Rotating Flows and Jets in the Laboratory. Physical Review Letters, 2008, 100, 035001.	7.8	40
102	Measurement of Temperature, Density, and Particle Transport with Localized Dopants in 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, 2008, 100, 105003.	7.8	6
103	Generation of shear flow in conical wire arrays with a center wire. , 2008, , 205-208.		0
104	The evolution of magnetic tower jets in the laboratory. Physics of Plasmas, 2007, 14, 056501.	1.9	153
105	Implosion and stagnation of wire array Z pinches. Physics of Plasmas, 2007, 14, 056315.	1.9	25
106	Dynamics of conical wire array Z-pinch implosions. Physics of Plasmas, 2007, 14, 102704.	1.9	38
107	The Formation of Precursor Structures in Cylindrical and â€œ4 $imes$ 4â€•Wire Arrays. IEEE Transactions on Plasma Science, 2007, 35, 165-170.	1.3	4
108	3D MHD Simulations of Laboratory Plasma Jets. Astrophysics and Space Science, 2007, 307, 17-22.	1.4	8

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109	Jet Deflection by a Quasi-Steady-State Side Wind in the Laboratory. Astrophysics and Space Science, 2007, 307, 29-34.	1.4	13
110	Laboratory Modeling of Standing Shocks and Radiatively Cooled Jets with Angular Momentum. Astrophysics and Space Science, 2007, 307, 51-56.	1.4	10
111	Measurement and modeling of the implosion of wire arrays with seeded instabilities. Physics of Plasmas, 2006, 13, 056313.	1.9	15
112	Implosion Dynamics in Conical Wire Array Z-pinches. AIP Conference Proceedings, 2006, , .	0.4	4
113	Diagnostics for studying the dynamics of wire array Z pinches. Review of Scientific Instruments, 2006, 77, 10F326.	1.3	6
114	Structure of stagnated plasma in aluminum wire array Z pinches. Physics of Plasmas, 2006, 13, 082701.	1.9	25
115	Use of Faraday probing to estimate current distribution in wire array z pinches. Review of Scientific Instruments, 2006, 77, 10E315.	1.3	18
116	Dynamics of cylindrically converging precursor plasma flow in wire-arrayZ-pinch experiments. Physical Review E, 2006, 74, 046403.	2.1	62
117	Laboratory Modeling of Standing Shocks and Radiatively Cooled Jets with Angular Momentum. , 2006, , 51-56.		1
118	3D MHD Simulations of Laboratory Plasma Jets. , 2006, , 17-22.		0
119	Jet Deflection by a Quasi-Steady-State Side Wind in the Laboratory. , 2006, , 29-34.		0
120	Magnetic tower outflows from a radial wire array Z-pinch. Monthly Notices of the Royal Astronomical Society, 2005, 361, 97-108.	4.4	145
121	Formation of Working Surfaces in Radiatively Cooled Laboratory Jets. Astrophysics and Space Science, 2005, 298, 241-246.	1.4	37
122	Modeling Magnetic Tower Jets in the Laboratory. Astrophysics and Space Science, 2005, 298, 277-286.	1.4	14
123	Effect of Radial-Electric-Field Polarity on Wire-ArrayZ-Pinch Dynamics. Physical Review Letters, 2005, 95, 135001.	7.8	24
124	Study of Three-Dimensional Structure in Wire-ArrayZPinches by Controlled Seeding of Axial Modulations in Wire Radius. Physical Review Letters, 2005, 95, 225001.	7.8	40
125	Production of radiatively cooled hypersonic plasma jets and links to astrophysical jets. Plasma Physics and Controlled Fusion, 2005, 47, B465-B479.	2.1	65
126	Physics of wire array Z-pinch implosions: experiments at Imperial College. Plasma Physics and Controlled Fusion, 2005, 47, A91-A108.	2.1	92

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127	Laboratory astrophysics: 2D and 3D numerical modeling of jets and flows produced in wire array experiments. AIP Conference Proceedings, 2004, , .	0.4	5
128	Chemically etched modulation in wire radius for wire array Z-pinch perturbation studies. Review of Scientific Instruments, 2004, 75, 5030-5034.	1.3	6
129	Use of X-pinches of diagnose behavior of low density CH foams on axis of wire array Z-pinches. Review of Scientific Instruments, 2004, 75, 3944-3946.	1.3	13
130	Use of spherically bent crystals to diagnose wire array z pinches. Review of Scientific Instruments, 2004, 75, 3681-3683.	1.3	15
131	Use of linear wire array Z pinches to examine plasma dynamics in high magnetic fields. Physics of Plasmas, 2004, 11, 4911-4921.	1.9	25
132	Extreme ultraviolet imaging of wire array z-pinch experiments. Review of Scientific Instruments, 2004, 75, 3941-3943.	1.3	36
133	Laboratory Modeling of Radiatively Cooled Jets Using Conical Wire Array Z-pinches. AIP Conference Proceedings, 2004, , .	0.4	4
134	Effect of Discrete Wires on The Implosion Dynamics of Wire Array Z-Pinches. AIP Conference Proceedings, 2002, , .	0.4	7
135	Ablation Rate of Wire Cores in Wire Array Z-Pinch Experiments. AIP Conference Proceedings, 2002, , .	0.4	3
136	Deflection of Supersonic Plasma Jets by Ionised Hydrocarbon Targets. AIP Conference Proceedings, 2002, , .	0.4	3