

David Ampleford

List of Publications by Year in descending order

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136
papers

2,434
citations

201674

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140
all docs

140
docs citations

140
times ranked

945
citing authors

#	ARTICLE	IF	CITATIONS
1	Magnetically Driven Implosions for Inertial Confinement Fusion at Sandia National Laboratories. IEEE Transactions on Plasma Science, 2012, 40, 3222-3245.	1.3	154
2	The evolution of magnetic tower jets in the laboratory. Physics of Plasmas, 2007, 14, 056501.	1.9	153
3	Magnetic tower outflows from a radial wire array Z-pinch. Monthly Notices of the Royal Astronomical Society, 2005, 361, 97-108.	4.4	145
4	Review of pulsed power-driven high energy density physics research on Z at Sandia. Physics of Plasmas, 2020, 27, .	1.9	140
5	Physics of wire array Z-pinch implosions: experiments at Imperial College. Plasma Physics and Controlled Fusion, 2005, 47, A91-A108.	2.1	92
6	X-ray power and yield measurements at the refurbished Z machine. Review of Scientific Instruments, 2014, 85, 083501.	1.3	68
7	Production of radiatively cooled hypersonic plasma jets and links to astrophysical jets. Plasma Physics and Controlled Fusion, 2005, 47, B465-B479.	2.1	65
8	Performance Scaling in Magnetized Liner Inertial Fusion Experiments. Physical Review Letters, 2020, 125, 155002.	7.8	65
9	Dynamics of cylindrically converging precursor plasma flow in wire-array Z-pinch experiments. Physical Review E, 2006, 74, 046403.	2.1	62
10	A Renewed Capability for Gas Puff Science on Sandia's Z Machine. IEEE Transactions on Plasma Science, 2014, 42, 1145-1152.	1.3	62
11	Simulations of the implosion and stagnation of compact wire arrays. Physics of Plasmas, 2010, 17, .	1.9	59
12	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
13	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
14	Planar Wire-Array Z -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
15	Study of Three-Dimensional Structure in Wire-Array Z-Pinches by Controlled Seeding of Axial Modulations in Wire Radius. Physical Review Letters, 2005, 95, 225001.	7.8	40
16	Supersonic Radiatively Cooled Rotating Flows and Jets in the Laboratory. Physical Review Letters, 2008, 100, 035001.	7.8	40
17	Dynamics of conical wire array Z-pinch implosions. Physics of Plasmas, 2007, 14, 102704.	1.9	38
18	Formation of Working Surfaces in Radiatively Cooled Laboratory Jets. Astrophysics and Space Science, 2005, 298, 241-246.	1.4	37

#	ARTICLE	IF	CITATIONS
19	Implosion dynamics and K-shell x-ray generation in large diameter stainless steel wire array Z pinches with various nesting configurations. <i>Physics of Plasmas</i> , 2008, 15, .	1.9	37
20	Extreme ultraviolet imaging of wire array z-pinch experiments. <i>Review of Scientific Instruments</i> , 2004, 75, 3941-3943.	1.3	36
21	Contrasting physics in wire array z pinch sources of 1-20 keV emission on the Z facility. <i>Physics of Plasmas</i> , 2014, 21, .	1.9	36
22	Assessing Stagnation Conditions and Identifying Trends in Magnetized Liner Inertial Fusion. <i>IEEE Transactions on Plasma Science</i> , 2019, 47, 2081-2101.	1.3	36
23	An overview of magneto-inertial fusion on the Z machine at Sandia National Laboratories. <i>Nuclear Fusion</i> , 2022, 62, 042015.	3.5	35
24	Enhancing performance of magnetized liner inertial fusion at the Z facility. <i>Physics of Plasmas</i> , 2018, 25, .	1.9	34
25	Diagnosing and mitigating laser preheat induced mix in MagLIF. <i>Physics of Plasmas</i> , 2018, 25, .	1.9	33
26	Compact, rugged in-chamber transmission spectrometers (7-28 keV) for the Sandia Z facility. <i>Review of Scientific Instruments</i> , 2011, 82, 063113.	1.3	32
27	Bright spots in 1 MA X pinches as a function of wire number and material. <i>Physics of Plasmas</i> , 2008, 15, 092703.	1.9	27
28	Investigation of High-Temperature Bright Plasma X-ray Sources Produced in 5-MA X-Pinch Experiments. <i>Physical Review Letters</i> , 2012, 109, 155002.	7.8	27
29	Constraining preheat energy deposition in MagLIF experiments with multi-frame shadowgraphy. <i>Physics of Plasmas</i> , 2019, 26, .	1.9	27
30	Use of linear wire array Z pinches to examine plasma dynamics in high magnetic fields. <i>Physics of Plasmas</i> , 2004, 11, 4911-4921.	1.9	25
31	Structure of stagnated plasma in aluminum wire array Z pinches. <i>Physics of Plasmas</i> , 2006, 13, 082701.	1.9	25
32	Implosion and stagnation of wire array Z pinches. <i>Physics of Plasmas</i> , 2007, 14, 056315.	1.9	25
33	Effect of Radial-Electric-Field Polarity on Wire-Array-Z-Pinch Dynamics. <i>Physical Review Letters</i> , 2005, 95, 135001.	7.8	24
34	Opacity and gradients in aluminum wire array z-pinch implosions on the Z pulsed power facility. <i>Physics of Plasmas</i> , 2014, 21, 031201.	1.9	22
35	Study of the effect of current rise time on the formation of the precursor column in cylindrical wire array Z pinches at 1 MA. <i>Physics of Plasmas</i> , 2009, 16, .	1.9	20
36	The effect of gradients at stagnation on K-shell x-ray line emission in high-current Ar gas-puff implosions. <i>Physics of Plasmas</i> , 2015, 22, 020706.	1.9	20

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37	Signatures of hot electrons and fluorescence in Mo K α emission on Z. <i>Physics of Plasmas</i> , 2014, 21, .	1.9	19
38	Use of Faraday probing to estimate current distribution in wire array z pinches. <i>Review of Scientific Instruments</i> , 2006, 77, 10E315.	1.3	18
39	Doppler measurement of implosion velocity in fast-Z-pinch x-ray sources. <i>Physical Review E</i> , 2011, 84, 056408.	2.1	18
40	K-shell emission trends from 60 to 130 $\mu\text{m/s}$ stainless steel implosions. <i>Physics of Plasmas</i> , 2013, 20, 103116.	1.9	18
41	High energy X-ray pinhole imaging at the Z facility. <i>Review of Scientific Instruments</i> , 2016, 87, 063502.	1.3	18
42	Bow shocks in ablated plasma streams for nested wire array z-pinches: A laboratory astrophysics testbed for radiatively cooled shocks. <i>Physics of Plasmas</i> , 2010, 17, .	1.9	17
43	Architecture, implementation, and testing of a multiple-shell gas injection system for high current implosions on the Z accelerator. <i>Review of Scientific Instruments</i> , 2013, 84, 063504.	1.3	16
44	A Wolter imager on the Z machine to diagnose warm x-ray sources. <i>Review of Scientific Instruments</i> , 2018, 89, 10G115.	1.3	16
45	Deep-learning-enabled Bayesian inference of fuel magnetization in magnetized liner inertial fusion. <i>Physics of Plasmas</i> , 2021, 28, .	1.9	16
46	Use of spherically bent crystals to diagnose wire array z pinches. <i>Review of Scientific Instruments</i> , 2004, 75, 3681-3683.	1.3	15
47	Measurement and modeling of the implosion of wire arrays with seeded instabilities. <i>Physics of Plasmas</i> , 2006, 13, 056313.	1.9	15
48	Modeling Magnetic Tower Jets in the Laboratory. <i>Astrophysics and Space Science</i> , 2005, 298, 277-286.	1.4	14
49	Observation of γ > 400 keV Precursor Plasmas from Low-Wire-Number Copper Arrays at the J-MA Zebra Facility. <i>Physical Review Letters</i> , 2009, 102, 155006.	7.8	14
50	Development and use of a two-dimensional interferometer to measure mass flow from a multi-shell Z-pinch gas puff. <i>Review of Scientific Instruments</i> , 2012, 83, 083116.	1.3	14
51	Analysis of spatially resolved Z-pinch spectra to investigate the nature of "bright spots". <i>Physics of Plasmas</i> , 2013, 20, .	1.9	14
52	Use of X-pinches to diagnose behavior of low density CH foams on axis of wire array Z-pinches. <i>Review of Scientific Instruments</i> , 2004, 75, 3944-3946.	1.3	13
53	Jet Deflection by a Quasi-Steady-State Side Wind in the Laboratory. <i>Astrophysics and Space Science</i> , 2007, 307, 29-34.	1.4	13
54	<i>Physics of Plasmas</i> , 2015, 22, 056316.	1.9	13

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55	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
56	A 7.2 keV spherical x-ray crystal backlighter for two-frame, two-color backlighting at Sandia's Z Pulsed Power Facility. Review of Scientific Instruments, 2017, 88, 103503.	1.3	12
57	One dimensional imager of neutrons on the Z machine. Review of Scientific Instruments, 2018, 89, 10I132.	1.3	12
58	An x-ray optic calibration facility for high energy density diagnostics. Review of Scientific Instruments, 2018, 89, 10G112.	1.3	12
59	Estimation of stagnation performance metrics in magnetized liner inertial fusion experiments using Bayesian data assimilation. Physics of Plasmas, 2022, 29, .	1.9	11
60	Laboratory Modeling of Standing Shocks and Radiatively Cooled Jets with Angular Momentum. Astrophysics and Space Science, 2007, 307, 51-56.	1.4	10
61	Quantitative Measurements of Wire Ablation in Tungsten X-pinch at 80 kA. IEEE Transactions on Plasma Science, 2008, 36, 2759-2764.	1.3	10
62	Investigation of radiative bow-shocks in magnetically accelerated plasma flows. Physics of Plasmas, 2015, 22, 052710.	1.9	10
63	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
64	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
65	Quantification of MagLIF morphology using the Mallat scattering transformation. Physics of Plasmas, 2020, 27, .	1.9	9
66	3D MHD Simulations of Laboratory Plasma Jets. Astrophysics and Space Science, 2007, 307, 17-22.	1.4	8
67	Design and testing of a magnetically driven implosion peak current diagnostic. Physics of Plasmas, 2018, 25, 042702.	1.9	8
68	Effect of Discrete Wires on The Implosion Dynamics of Wire Array Z-Pinches. AIP Conference Proceedings, 2002, , .	0.4	7
69	Generation of shear flow in conical wire arrays with a center wire. Astrophysics and Space Science, 2009, 322, 205-208.	1.4	7
70	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
71	Chemically etched modulation in wire radius for wire array Z-pinch perturbation studies. Review of Scientific Instruments, 2004, 75, 5030-5034.	1.3	6
72	Diagnostics for studying the dynamics of wire array Z pinches. Review of Scientific Instruments, 2006, 77, 10F326.	1.3	6

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73	Radiography of Modulated Wire Array Z-Pinches. IEEE Transactions on Plasma Science, 2008, 36, 1270-1271.	1.3	6
74	Measurement of Temperature, Density, and Particle Transport with Localized Dopants in Wire-Array Z-Pinches. Physical Review Letters, 2008, 100, 105003.	7.8	6
75	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
76	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
77	Laboratory astrophysics: 2D and 3D numerical modeling of jets and flows produced in wire array experiments. AIP Conference Proceedings, 2004, , .	0.4	5
78	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
79	Laboratory Modeling of Radiatively Cooled Jets Using Conical Wire Array Z-pinches. AIP Conference Proceedings, 2004, , .	0.4	4
80	Implosion Dynamics in Conical Wire Array Z-pinches. AIP Conference Proceedings, 2006, , .	0.4	4
81	The Formation of Precursor Structures in Cylindrical and 4×4 Wire Arrays. IEEE Transactions on Plasma Science, 2007, 35, 165-170.	1.3	4
82	ZR-convolute analysis and modeling: Plasma evolution and dynamics leading to current losses. , 2009, , .		4
83	A non-LTE analysis of high energy density Kr plasmas on Z and NIF. Physics of Plasmas, 2016, 23, 101208.	1.9	4
84	Modeling the one-dimensional imager of neutrons (ODIN) for neutron response functions at the Sandia Z facility. Review of Scientific Instruments, 2018, 89, 101121.	1.3	4
85	A time-resolved, in-chamber x-ray pinhole imager for Z. Review of Scientific Instruments, 2021, 92, 033512.	1.3	4
86	Ablation Rate of Wire Cores in Wire Array Z-Pinch Experiments. AIP Conference Proceedings, 2002, , .	0.4	3
87	Deflection of Supersonic Plasma Jets by Ionised Hydrocarbon Targets. AIP Conference Proceedings, 2002, , .	0.4	3
88	Radiography of Foam Targets in Wire-Array Z-Pinches. IEEE Transactions on Plasma Science, 2008, 36, 1272-1273.	1.3	3
89	Shock model description of the interaction radiation pulse in nested wire array z-pinches. Physics of Plasmas, 2012, 19, 122711.	1.9	3
90	Effects of a Xe dopant on an Ar gas-puff implosion on Z. Physics of Plasmas, 2016, 23, .	1.9	3

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91	The differential absorption hard x-ray spectrometer at the Z facility. IEEE Transactions on Plasma Science, 2017, 45, 2393-2398.	1.3	3
92	Magnetic field effects on laser energy deposition and filamentation in magneto-inertial fusion relevant plasmas. Physics of Plasmas, 2021, 28, .	1.9	3
93	Current losses in wire array Z-pinchs on the Z generator. , 2009, , .		2
94	Large diameter copper wire array implosions for K-shell x-ray generation on the refurbished Z machine. , 2009, , .		2
95	High powers from large diameter wire arrays on the refurbished Z generator. , 2009, , .		2
96	Spectroscopic measurements in the post-hole convolute on Sandia's Z-Machine (invited). , 2011, , .		2
97	Anode 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
98	Demonstration of Radiation Pulse-Shaping Capabilities Using Nested Conical Wire-Array Z-Pinchs. IEEE Transactions on Plasma Science, 2012, 40, 3334-3346.	1.3	2
99	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
100	Characterization of multilayer coated replicated Wolter optics for imaging x-ray emission from pulsed power. , 2017, , .		2
101	Extreme-UV Self-Emission From Plasma-Focus Radial Wire Array. IEEE Transactions on Plasma Science, 2011, 39, 2420-2421.	1.3	1
102	Guest Editorial Special Issue on Z-Pinch Plasmas. IEEE Transactions on Plasma Science, 2012, 40, 3186-3188.	1.3	1
103	Simulation of synthetic spectra of bright spots for Ar and KR gas puff on Zr. , 2012, , .		1
104	K-shell radiation yields on a 60 MA Z-pinch generator. , 2012, , .		1
105	Characterization of Fine Metallic Wires for Wire-Array Z-Pinch Experiments. IEEE Transactions on Plasma Science, 2012, 40, 3372-3377.	1.3	1
106	Effect of wire material on wire array implosions. , 2013, , .		1
107	Diagnostic constraints on the amount of cold mass in imploded argon pinches on Z. , 2014, , .		1
108	Investigating Radial Wire Array γ & X -Pinches as a Compact X-Ray Source on the Saturn Generator. IEEE Transactions on Plasma Science, 2015, 43, 3344-3352.	1.3	1

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109	Laboratory Modeling of Standing Shocks and Radiatively Cooled Jets with Angular Momentum. , 2006, , 51-56.		1
110	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
111	Wire array z-pinch implosion dynamics and radiation with a 1D ablation model. , 2008, , .		0
112	Radial wire array Z-pinches as a driver for HEDP experiments. , 2008, , .		0
113	Two-dimensional radiation MHD modeling of stainless steel and Cu wire array Z-pinch implosions. , 2009, , .		0
114	Ablation dynamics and stagnation physics of copper wire array Z-pinch implosions at 20 MA. , 2009, , .		0
115	Wire array Z-pinch length variations for K-shell x-ray generation on Z. , 2010, , .		0
116	Modeling Cu wire array implosions on the refurbished Z generator. , 2010, , .		0
117	Investigation Of bow shock formation in pulsed-power-driven super-sonic plasma flows. , 2010, , .		0
118	L-shell spectroscopic diagnostics of imploding wire array plasmas. , 2010, , .		0
119	3-dimensional modeling of large diameter wire array high intensity K-shell radiation sources. , 2010, , .		0
120	Development of an 85KJ stainless steel K-shell X-ray source on the Z generator. , 2010, , .		0
121	Synthetic time and space resolved spectra including Doppler splitting from simulations of stainless steel pinches on refurbished Z. , 2010, , .		0
122	2D radiation MHD model assessment of initial argon gas distributions to be imploded on the Z machine. , 2011, , .		0
123	Multi-color gated x-ray pinhole imaging of Z-pinch implosions on the Saturn and Z pulsed power generators. , 2011, , .		0
124	3-dimensional modeling of nested Al and Ni-clad Ti on Al wire array Z pinches. , 2011, , .		0
125	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
126	Diagnosing copper wire array implosions on refurbished Z with detailed radiation-hydrodynamic models. , 2011, , .		0

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127	Comparative properties of copper wire array implosions driven by the pre-refurbished and post-refurbished generator. , 2012, , .		0
128	Investigation of radiative bow-shocks in magnetically accelerated plasma flows. , 2013, , .		0
129	A renewed argon gas puff capability on Sandia's Z machine. , 2013, , .		0
130	Inertial Confinement Fusion - Experimental Physics: Z-Pinch and Magnetized Liner Inertial Fusion. , 2021, , 739-750.		0
131	Generation of shear flow in conical wire arrays with a center wire. , 2008, , 205-208.		0
132	Measuring mix in MagLIF experiments at the NIF*. , 2021, , .		0
133	Increased preheat energy to MagLIF targets with cryogenic cooling. , 2021, , .		0
134	3D MHD Simulations of Laboratory Plasma Jets. , 2006, , 17-22.		0
135	Jet Deflection by a Quasi-Steady-State Side Wind in the Laboratory. , 2006, , 29-34.		0
136	Bright-Spot Contributions to Hardphoton Continuum K-Shell Yield from Argon and Stainless-Steel Load Implosions on Z. , 2022, , .		0