Jonathan Davies

List of Publications by Year
in descending order

85 papers	4,456 citations	109321 35 h-index	102487 66 g-index
87 all docs	87 docs citations	87 times ranked	1977 citing authors

#	Article	IF	Citations
1	Effect of laser preheat in magnetized liner inertial fusion at OMEGA. Physics of Plasmas, 2022, 29, 042703.	1.9	3
2	Diagnosing magnetic fields in cylindrical implosions with oblique proton radiography. Physics of Plasmas, 2022, 29, .	1.9	5
3	Transport coefficients for magnetic-field evolution in inviscid magnetohydrodynamics. Physics of Plasmas, 2021, 28, .	1.9	20
4	Kinetic simulation study of magnetized collisionless shock formation on a terawatt laser system. Physics of Plasmas, 2021, 28, .	1.9	4
5	Updated magnetized transport coefficients: impact on laser-plasmas with self-generated or applied magnetic fields. Nuclear Fusion, 2021, 61, 116025.	3.5	12
6	Fast electron transport dynamics and energy deposition in magnetized, imploded cylindrical plasma. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2021, 379, 20200052.	3.4	2
7	Soft x-ray spectrum unfold of K-edge filtered x-ray diode arrays using cubic splines. Review of Scientific Instruments, 2020, 91, 073102.	1.3	4
8	Neutron yield enhancement and suppression by magnetization in laser-driven cylindrical implosions. Physics of Plasmas, 2020, 27, .	1.9	15
9	Characterization of an imploding cylindrical plasma for electron transport studies using x-ray emission spectroscopy. Physics of Plasmas, 2020, 27, .	1.9	4
10	Study of laser-driven magnetic fields with a continuous wave Faraday rotation diagnostic. Physics of Plasmas, 2020, 27, 033102.	1.9	6
11	Axial proton probing of magnetic and electric fields inside laser-driven coils. Physics of Plasmas, 2020, 27, .	1.9	16
12	Characterizing laser preheat for laser-driven magnetized liner inertial fusion using soft x-ray emission. Physics of Plasmas, 2020, 27, 112709.	1.9	5
13	Tripled yield in direct-drive laser fusion through statistical modelling. Nature, 2019, 565, 581-586.	27.8	103
14	Inferring fuel areal density from secondary neutron yields in laser-driven magnetized liner inertial fusion. Physics of Plasmas, 2019, 26, .	1.9	11
15	Increasing the magnetic-field capability of the magneto-inertial fusion electrical discharge system using an inductively coupled coil. Review of Scientific Instruments, 2018, 89, 033501.	1.3	10
16	Measuring implosion velocities in experiments and simulations of laser-driven cylindrical implosions on the OMEGA laser. Plasma Physics and Controlled Fusion, 2018, 60, 054014.	2.1	14
17	Optimization of laser-driven cylindrical implosions on the OMEGA laser. Physics of Plasmas, 2018, 25, 122701.	1.9	12
18	Inductively coupled 30 T magnetic field platform for magnetized high-energy-density plasma studies. Review of Scientific Instruments, 2018, 89, 084703.	1.3	11

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19	Laser entrance window transmission and reflection measurements for preheating in magnetized liner inertial fusion. Physics of Plasmas, 2018, 25, 062704.	1.9	9
20	Laser-driven magnetized liner inertial fusion on OMEGA. Physics of Plasmas, 2017, 24, .	1.9	33
21	Laser-driven magnetized liner inertial fusion. Physics of Plasmas, 2017, 24, .	1.9	49
22	Axial magnetic field injection in magnetized liner inertial fusion. Physics of Plasmas, 2017, 24, .	1.9	14
23	The importance of electrothermal terms in Ohm's law for magnetized spherical implosions. Physics of Plasmas, 2015, 22, .	1.9	35
24	Diagnosing laser-preheated magnetized plasmas relevant to magnetized liner inertial fusion. Physics of Plasmas, 2015, 22, .	1.9	21
25	Enhanced Relativistic-Electron-Beam Energy Loss in Warm Dense Aluminum. Physical Review Letters, 2015, 114, 095004.	7.8	23
26	Use of external magnetic fields in hohlraum plasmas to improve laser-coupling. Physics of Plasmas, 2015, 22, .	1.9	45
27	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
28	Magnetic-field generation by the ablative nonlinear Rayleighâ€"Taylor instability. Journal of Plasma Physics, 2015, 81, .	2.1	5
29	High energy conversion efficiency in laser-proton acceleration by controlling laser-energy deposition onto thin foil targets. Applied Physics Letters, 2014, 104, 081123.	3.3	55
30	Copper K-shell emission cross sections for laserâ€"solid experiments. Physics of Plasmas, 2013, 20, 083118.	1.9	16
31	Hot-electron generation from laserâ€"pre-plasma interactions in cone-guided fast ignition. Physics of Plasmas, 2013, 20, .	1.9	7
32	The effect of phase front deformation on the growth of the filamentation instability in laserâ€"plasma interactions. New Journal of Physics, 2013, 15, 015027.	2.9	7
33	Fast electron beam measurements from relativistically intense, frequency-doubled laserâ€"solid interactions. New Journal of Physics, 2013, 15, 093021.	2.9	5
34	Measuring fast electron spectra and laser absorption in relativistic laser-solid interactions using differential bremsstrahlung photon detectors. Review of Scientific Instruments, 2013, 84, 083505.	1.3	19
35	Observation of Self-Similarity in the Magnetic Fields Generated by the Ablative Nonlinear Rayleigh-Taylor Instability. Physical Review Letters, 2013, 110, 185003.	7.8	30
36	Magnetic Field Generation by the Rayleigh-Taylor Instability in Laser-Driven Planar Plastic Targets. Physical Review Letters, 2012, 109, 115001.	7.8	42

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37	Time-Resolved Measurements of Hot-Electron Equilibration Dynamics in High-Intensity Laser Interactions with Thin-Foil Solid Targets. Physical Review Letters, 2012, 108, 085002.	7.8	59
38	Controlling Fast-Electron-Beam Divergence Using Two Laser Pulses. Physical Review Letters, 2012, 109, 015001.	7.8	45
39	Coherent transition radiation in relativistic laserâ€"solid interactions. Plasma Physics and Controlled Fusion, 2012, 54, 035011.	2.1	12
40	Dynamics of intense laser propagation in underdense plasma: Polarization dependence. Physics of Plasmas, 2012, 19, .	1.9	9
41	A study of fast electron energy transport in relativistically intense laser-plasma interactions with large density scalelengths. Physics of Plasmas, 2012, 19, 053104.	1.9	28
42	New developments in energy transfer and transport studies in relativistic laserâ€"plasma interactions. Plasma Physics and Controlled Fusion, 2010, 52, 124046.	2.1	7
43	Inverse Faraday Effect with Linearly Polarized Laser Pulses. Physical Review Letters, 2010, 105, 035001.	7.8	94
44	Micron-scale fast electron filaments and recirculation determined from rear-side optical emission in high-intensity laserâ€"solid interactions. New Journal of Physics, 2010, 12, 073016.	2.9	13
45	Creation of persistent, straight, 2 mm long laser driven channels in underdense plasmas. Physics of Plasmas, 2010, 17, .	1.9	22
46	Observation of Postsoliton Expansion Following Laser Propagation through an Underdense Plasma. Physical Review Letters, 2010, 105, 175007.	7.8	45
47	Recent fast electron energy transport experiments relevant to fast ignition inertial fusion. Nuclear Fusion, 2009, 49, 104023.	3.5	27
48	Filamented plasmas in laser ablation of solids. Plasma Physics and Controlled Fusion, 2009, 51, 035013.	2.1	11
49	Laser absorption by overdense plasmas in the relativistic regime. Plasma Physics and Controlled Fusion, 2009, 51, 014006.	2.1	55
50	Stopping and scattering of relativistic electron beams in dense plasmas and requirements for fast ignition. Plasma Physics and Controlled Fusion, 2009, 51, 015016.	2.1	79
51	Measurements of fast electron scaling generated by petawatt laser systems. Physics of Plasmas, 2009, 16, .	1.9	40
52	Space and time resolved measurements of the heating of solids to ten million kelvin by a petawatt laser. New Journal of Physics, 2008, 10, 043046.	2.9	70
53	Effect of Laser Intensity on Fast-Electron-Beam Divergence in Solid-Density Plasmas. Physical Review Letters, 2008, 100, 015003.	7.8	180
54	Fast ignitor target studies for the HiPER project. Physics of Plasmas, 2008, 15, 056311.	1.9	79

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55	Fast ignitor target studies for HiPER. Journal of Physics: Conference Series, 2008, 112, 022062.	0.4	3
56	Heating of solid target in electron refluxing dominated regime with ultra-intense laser. Journal of Physics: Conference Series, 2008, 112, 022063.	0.4	8
57	Plasmon kinetics and ion instabilities. Plasma Physics and Controlled Fusion, 2008, 50, 105009.	2.1	3
58	Measurements of Energy Transport Patterns in Solid Density Laser Plasma Interactions at Intensities of5Ã—1020â€‰â€‰Wâ€‰cmâˆ'2. Physical Review Letters, 2007, 98, 125002.	7.8	117
59	Observation of annular electron beam transport in multi-TeraWatt laser-solid interactions. Plasma Physics and Controlled Fusion, 2006, 48, L11-L22.	2.1	36
60	Electron beam hollowing in laserâ€"solid interactions. Plasma Physics and Controlled Fusion, 2006, 48, 1181-1199.	2.1	49
61	Reduction of proton acceleration in high-intensity laser interaction with solid two-layer targets. Physics of Plasmas, 2006, 13, 123101.	1.9	10
62	Observation of ion temperatures exceeding background electron temperatures in petawatt laser-solid experiments. Plasma Physics and Controlled Fusion, 2005, 47, L49-L56.	2.1	17
63	A coupled two-step plasma instability in PW laser plasma interactions. Plasma Physics and Controlled Fusion, 2005, 47, B799-B805.	2.1	2
64	Beam Instabilities in Laser-Plasma Interaction: Relevance to Preferential Ion Heating. Physical Review Letters, 2005, 94, .	7.8	37
65	AlfvÃ©n limit in fast ignition. Physical Review E, 2004, 69, 065402.	2.1	13
66	Proton Shock Acceleration in Laser-Plasma Interactions. Physical Review Letters, 2004, 92, 015002.	7.8	431
67	Experimental study of proton emission from 60-fs, 200-mJ high-repetition-rate tabletop-laser pulses interacting with solid targets. Physical Review E, 2003, 67, 046402.	2.1	88
68	Electric and magnetic field generation and target heating by laser-generated fast electrons. Physical Review E, 2003, 68, 056404.	2.1	90
69	Magnetic-field-limited currents. Physical Review E, 2003, 68, 037501.	2.1	8
70	How wrong is collisional Monte Carlo modeling of fast electron transport in high-intensity laser-solid interactions?. Physical Review E, 2002, 65, 026407.	2.1	92
71	Laser propagation in cylindrical waveguides. Physical Review E, 2002, 66, 046604.	2.1	2
72	Proton and neutron sources using terawatt lasers. Measurement Science and Technology, 2001, 12, 1801-1812.	2.6	38

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73	Fast particle generation and energy transport in laser-solid interactions. Physics of Plasmas, 2001, 8, 2323-2330.	1.9	88
74	Explanations for the observed increase in fast electron penetration in laser shock compressed materials. Physical Review E, 2000, 61, 5725-5733.	2.1	53
75	Experimental evidence of electric inhibition in fast electron penetration and of electric-field-limited fast electron transport in dense matter. Physical Review E, 2000, 62, R5927-R5930.	2.1	113
76	Energetic proton production from relativistic laser interaction with high density plasmas. Physics of Plasmas, 2000, 7, 2055-2061.	1.9	115
77	Basic physics of laser propagation in hollow waveguides. Physical Review E, 2000, 62, 7168-7180.	2.1	12
78	Measurements of Energetic Proton Transport through Magnetized Plasma from Intense Laser Interactions with Solids. Physical Review Letters, 2000, 84, 670-673.	7.8	664
79	One-dimensional particle simulations of fast electron transport in solid targets. Plasma Physics and Controlled Fusion, 1999, 41, 285-292.	2.1	13
80	Magnetic focusing and trapping of high-intensity laser-generated fast electrons at the rear of solid targets. Physical Review E, 1999, 59, 6032-6036.	2.1	96
81	Observations of Collimated Ionization Channels in Aluminum-Coated Glass Targets Irradiated by Ultraintense Laser Pulses. Physical Review Letters, 1999, 83, 4309-4312.	7.8	98
82	Plasma Formation on the Front and Rear of Plastic Targets due to High-Intensity Laser-Generated Fast Electrons. Physical Review Letters, 1998, 81, 999-1002.	7.8	127
83	Magnetic field in short-pulse high-intensity laser-solid experiments. Physical Review E, 1998, 58, 2471-2473.	2.1	60
84	Fast-electron transport in high-intensity short-pulse laser - solid experiments. Plasma Physics and Controlled Fusion, 1997, 39, 653-659.	2.1	249
85	Short-pulse high-intensity laser-generated fast electron transport into thick solid targets. Physical Review E, 1997, 56, 7193-7203.	2.1	168