Jonathan Davies

List of Publications by Year
in descending order

85	4,456	109321 35	102487 66
papers	citations	h-index	g-index

87	87	87	1977
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Measurements of Energetic Proton Transport through Magnetized Plasma from Intense Laser Interactions with Solids. Physical Review Letters, 2000, 84, 670-673.	7.8	664
2	Proton Shock Acceleration in Laser-Plasma Interactions. Physical Review Letters, 2004, 92, 015002.	7.8	431
3	Fast-electron transport in high-intensity short-pulse laser - solid experiments. Plasma Physics and Controlled Fusion, 1997, 39, 653-659.	2.1	249
4	Effect of Laser Intensity on Fast-Electron-Beam Divergence in Solid-Density Plasmas. Physical Review Letters, 2008, 100, 015003.	7.8	180
5	Short-pulse high-intensity laser-generated fast electron transport into thick solid targets. Physical Review E, 1997, 56, 7193-7203.	2.1	168
6	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
7	Measurements of Energy Transport Patterns in Solid Density Laser Plasma Interactions at Intensities of5Ã—1020â€‰â€‰Wâ€‰cmâ^’2. Physical Review Letters, 2007, 98, 125002.	7.8	117
8	Energetic proton production from relativistic laser interaction with high density plasmas. Physics of Plasmas, 2000, 7, 2055-2061.	1.9	115
9	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
10	Tripled yield in direct-drive laser fusion through statistical modelling. Nature, 2019, 565, 581-586.	27.8	103
11	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
12	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
13	Inverse Faraday Effect with Linearly Polarized Laser Pulses. Physical Review Letters, 2010, 105, 035001.	7.8	94
14	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
15	Electric and magnetic field generation and target heating by laser-generated fast electrons. Physical Review E, 2003, 68, 056404.	2.1	90
16	Fast particle generation and energy transport in laser-solid interactions. Physics of Plasmas, 2001, 8, 2323-2330.	1.9	88
17	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
18	Fast ignitor target studies for the HiPER project. Physics of Plasmas, 2008, 15, 056311.	1.9	79

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19	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
20	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
21	Magnetic field in short-pulse high-intensity laser-solid experiments. Physical Review E, 1998, 58, 2471-2473.	2.1	60
22	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
23	Laser absorption by overdense plasmas in the relativistic regime. Plasma Physics and Controlled Fusion, 2009, 51, 014006.	2.1	55
24	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
25	Explanations for the observed increase in fast electron penetration in laser shock compressed materials. Physical Review E, 2000, 61, 5725-5733.	2.1	53
26	Electron beam hollowing in laserâ€“solid interactions. Plasma Physics and Controlled Fusion, 2006, 48, 1181-1199.	2.1	49
27	Laser-driven magnetized liner inertial fusion. Physics of Plasmas, 2017, 24, .	1.9	49
28	Observation of Postsoliton Expansion Following Laser Propagation through an Underdense Plasma. Physical Review Letters, 2010, 105, 175007.	7.8	45
29	Controlling Fast-Electron-Beam Divergence Using Two Laser Pulses. Physical Review Letters, 2012, 109, 015001.	7.8	45
30	Use of external magnetic fields in hohlraum plasmas to improve laser-coupling. Physics of Plasmas, 2015, 22, .	1.9	45
31	Magnetic Field Generation by the Rayleigh-Taylor Instability in Laser-Driven Planar Plastic Targets. Physical Review Letters, 2012, 109, 115001.	7.8	42
32	Measurements of fast electron scaling generated by petawatt laser systems. Physics of Plasmas, 2009, 16, .	1.9	40
33	Proton and neutron sources using terawatt lasers. Measurement Science and Technology, 2001, 12, 1801-1812.	2.6	38
34	Beam Instabilities in Laser-Plasma Interaction: Relevance to Preferential Ion Heating. Physical Review Letters, 2005, 94, .	7.8	37
35	Observation of annular electron beam transport in multi-TeraWatt laser-solid interactions. Plasma Physics and Controlled Fusion, 2006, 48, L11-L22.	2.1	36
36	The importance of electrothermal terms in Ohm's law for magnetized spherical implosions. Physics of Plasmas, 2015, 22, .	1.9	35

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37	Laser-driven magnetized liner inertial fusion on OMEGA. Physics of Plasmas, 2017, 24, .	1.9	33
38	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
39	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
40	Recent fast electron energy transport experiments relevant to fast ignition inertial fusion. Nuclear Fusion, 2009, 49, 104023.	3.5	27
41	Enhanced Relativistic-Electron-Beam Energy Loss in Warm Dense Aluminum. Physical Review Letters, 2015, 114, 095004.	7.8	23
42	Creation of persistent, straight, 2 mm long laser driven channels in underdense plasmas. Physics of Plasmas, 2010, 17, .	1.9	22
43	Diagnosing laser-preheated magnetized plasmas relevant to magnetized liner inertial fusion. Physics of Plasmas, 2015, 22, .	1.9	21
44	Transport coefficients for magnetic-field evolution in inviscid magnetohydrodynamics. Physics of Plasmas, 2021, 28, .	1.9	20
45	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
46	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
47	Copper K-shell emission cross sections for laserâ€“solid experiments. Physics of Plasmas, 2013, 20, 083118.	1.9	16
48	Axial proton probing of magnetic and electric fields inside laser-driven coils. Physics of Plasmas, 2020, 27, .	1.9	16
49	Neutron yield enhancement and suppression by magnetization in laser-driven cylindrical implosions. Physics of Plasmas, 2020, 27, .	1.9	15
50	Axial magnetic field injection in magnetized liner inertial fusion. Physics of Plasmas, 2017, 24, .	1.9	14
51	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
52	One-dimensional particle simulations of fast electron transport in solid targets. Plasma Physics and Controlled Fusion, 1999, 41, 285-292.	2.1	13
53	AlfvÃ©n limit in fast ignition. Physical Review E, 2004, 69, 065402.	2.1	13
54	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

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55	Basic physics of laser propagation in hollow waveguides. Physical Review E, 2000, 62, 7168-7180.	2.1	12
56	Coherent transition radiation in relativistic laserâ€“solid interactions. Plasma Physics and Controlled Fusion, 2012, 54, 035011.	2.1	12
57	Optimization of laser-driven cylindrical implosions on the OMEGA laser. Physics of Plasmas, 2018, 25, 122701.	1.9	12
58	Updated magnetized transport coefficients: impact on laser-plasmas with self-generated or applied magnetic fields. Nuclear Fusion, 2021, 61, 116025.	3.5	12
59	Filamented plasmas in laser ablation of solids. Plasma Physics and Controlled Fusion, 2009, 51, 035013.	2.1	11
60	Inductively coupled 30 T magnetic field platform for magnetized high-energy-density plasma studies. Review of Scientific Instruments, 2018, 89, 084703.	1.3	11
61	Inferring fuel areal density from secondary neutron yields in laser-driven magnetized liner inertial fusion. Physics of Plasmas, 2019, 26, .	1.9	11
62	Reduction of proton acceleration in high-intensity laser interaction with solid two-layer targets. Physics of Plasmas, 2006, 13, 123101.	1.9	10
63	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
64	Dynamics of intense laser propagation in underdense plasma: Polarization dependence. Physics of Plasmas, 2012, 19, .	1.9	9
65	Time-resolved K_{Î±}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
66	Laser entrance window transmission and reflection measurements for preheating in magnetized liner inertial fusion. Physics of Plasmas, 2018, 25, 062704.	1.9	9
67	Magnetic-field-limited currents. Physical Review E, 2003, 68, 037501.	2.1	8
68	Heating of solid target in electron refluxing dominated regime with ultra-intense laser. Journal of Physics: Conference Series, 2008, 112, 022063.	0.4	8
69	New developments in energy transfer and transport studies in relativistic laserâ€“plasma interactions. Plasma Physics and Controlled Fusion, 2010, 52, 124046.	2.1	7
70	Hot-electron generation from laserâ€“pre-plasma interactions in cone-guided fast ignition. Physics of Plasmas, 2013, 20, .	1.9	7
71	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
72	Study of laser-driven magnetic fields with a continuous wave Faraday rotation diagnostic. Physics of Plasmas, 2020, 27, 033102.	1.9	6

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73	Fast electron beam measurements from relativistically intense, frequency-doubled laserâ€“solid interactions. New Journal of Physics, 2013, 15, 093021.	2.9	5
74	Magnetic-field generation by the ablative nonlinear Rayleighâ€“Taylor instability. Journal of Plasma Physics, 2015, 81, .	2.1	5
75	Characterizing laser preheat for laser-driven magnetized liner inertial fusion using soft x-ray emission. Physics of Plasmas, 2020, 27, 112709.	1.9	5
76	Diagnosing magnetic fields in cylindrical implosions with oblique proton radiography. Physics of Plasmas, 2022, 29, .	1.9	5
77	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
78	Characterization of an imploding cylindrical plasma for electron transport studies using x-ray emission spectroscopy. Physics of Plasmas, 2020, 27, .	1.9	4
79	Kinetic simulation study of magnetized collisionless shock formation on a terawatt laser system. Physics of Plasmas, 2021, 28, .	1.9	4
80	Fast ignitor target studies for HiPER. Journal of Physics: Conference Series, 2008, 112, 022062.	0.4	3
81	Plasmon kinetics and ion instabilities. Plasma Physics and Controlled Fusion, 2008, 50, 105009.	2.1	3
82	Effect of laser preheat in magnetized liner inertial fusion at OMEGA. Physics of Plasmas, 2022, 29, 042703.	1.9	3
83	Laser propagation in cylindrical waveguides. Physical Review E, 2002, 66, 046604.	2.1	2
84	A coupled two-step plasma instability in PW laser plasma interactions. Plasma Physics and Controlled Fusion, 2005, 47, B799-B805.	2.1	2
85	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