

# Wim Leemans

## List of Publications by Year in descending order

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90  
papers

12,136  
citations

101543

36  
h-index

48315

88  
g-index

91  
all docs

91  
docs citations

91  
times ranked

3319  
citing authors

#	ARTICLE	IF	CITATIONS
1	Physics of laser-driven plasma-based electron accelerators. <i>Reviews of Modern Physics</i> , 2009, 81, 1229-1285.	45.6	1,989
2	High-quality electron beams from a laser wakefield accelerator using plasma-channel guiding. <i>Nature</i> , 2004, 431, 538-541.	27.8	1,773
3	GeV electron beams from a centimetre-scale accelerator. <i>Nature Physics</i> , 2006, 2, 696-699.	16.7	1,521
4	Multi-GeV Electron Beams from Capillary-Discharge-Guided Subpetawatt Laser Pulses in the Self-Trapping Regime. <i>Physical Review Letters</i> , 2014, 113, 245002.	7.8	767
5	Petawatt Laser Guiding and Electron Beam Acceleration to 8 GeV in a Laser-Heated Capillary Discharge Waveguide. <i>Physical Review Letters</i> , 2019, 122, 084801.	7.8	557
6	Femtosecond X-ray Pulses at 0.4 Å Generated by 90 Å Thomson Scattering: A Tool for Probing the Structural Dynamics of Materials. <i>Science</i> , 1996, 274, 236-238.	12.6	439
7	Electron Injection into Plasma Wakefields by Colliding Laser Pulses. <i>Physical Review Letters</i> , 1997, 79, 2682-2685.	7.8	432
8	Observation of Terahertz Emission from a Laser-Plasma Accelerated Electron Bunch Crossing a Plasma-Vacuum Boundary. <i>Physical Review Letters</i> , 2003, 91, 074802.	7.8	327
9	Plasma-Density-Gradient Injection of Low Absolute-Momentum-Spread Electron Bunches. <i>Physical Review Letters</i> , 2008, 100, 215004.	7.8	315
10	Tunable laser plasma accelerator based on longitudinal density tailoring. <i>Nature Physics</i> , 2011, 7, 862-866.	16.7	291
11	Synchrotron radiation from electron beams in plasma-focusing channels. <i>Physical Review E</i> , 2002, 65, 056505.	2.1	271
12	Laser-driven plasma-wave electron accelerators. <i>Physics Today</i> , 2009, 62, 44-49.	0.3	268
13	Multistage coupling of independent laser-plasma accelerators. <i>Nature</i> , 2016, 530, 190-193.	27.8	250
14	Physics considerations for laser-plasma linear colliders. <i>Physical Review Special Topics: Accelerators and Beams</i> , 2010, 13, .	1.8	242
15	Ultrafast Structural Dynamics in InSb Probed by Time-Resolved X-Ray Diffraction. <i>Physical Review Letters</i> , 1999, 83, 336-339.	7.8	184
16	Temporal Characterization of Femtosecond Laser-Plasma-Accelerated Electron Bunches Using Terahertz Radiation. <i>Physical Review Letters</i> , 2006, 96, 014801.	7.8	160
17	Guiding of laser pulses in plasma channels created by the ignitor-heater technique. <i>Physics of Plasmas</i> , 1999, 6, 2269-2277.	1.9	159
18	Low-Emittance Electron Bunches from a Laser-Plasma Accelerator Measured using Single-Shot X-Ray Spectroscopy. <i>Physical Review Letters</i> , 2012, 109, 064802.	7.8	155

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19	Active Plasma Lensing for Relativistic Laser-Plasma-Accelerated Electron Beams. <i>Physical Review Letters</i> , 2015, 115, 184802.	7.8	147
20	Theory of ionization-induced trapping in laser-plasma accelerators. <i>Physics of Plasmas</i> , 2012, 19, .	1.9	135
21	Beat wave injection of electrons into plasma waves using two interfering laser pulses. <i>Physical Review E</i> , 2004, 70, 016402.	2.1	107
22	Two-Color Laser-Ionization Injection. <i>Physical Review Letters</i> , 2014, 112, 125001.	7.8	96
23	Nonlinear Theory of Nonparaxial Laser Pulse Propagation in Plasma Channels. <i>Physical Review Letters</i> , 2000, 84, 3081-3084.	7.8	88
24	Quasi-monoenergetic femtosecond photon sources from Thomson Scattering using laser plasma accelerators and plasma channels. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2014, 47, 234013.	1.5	66
25	Tapered plasma channels to phase-lock accelerating and focusing forces in laser-plasma accelerators. <i>Physics of Plasmas</i> , 2010, 17, .	1.9	57
26	Numerical investigation of electron self-injection in the nonlinear bubble regime. <i>Physics of Plasmas</i> , 2013, 20, .	1.9	53
27	Radiation pressure acceleration: The factors limiting maximum attainable ion energy. <i>Physics of Plasmas</i> , 2016, 23, .	1.9	48
28	Measured Emittance Dependence on the Injection Method in Laser Plasma Accelerators. <i>Physical Review Letters</i> , 2017, 119, 104801.	7.8	46
29	Control of focusing fields in laser-plasma accelerators using higher-order modes. <i>Physical Review Special Topics: Accelerators and Beams</i> , 2011, 14, .	1.8	44
30	Quasi-matched propagation of ultra-short, intense laser pulses in plasma channels. <i>Physics of Plasmas</i> , 2012, 19, 053101.	1.9	44
31	Plasma Undulator Based on Laser Excitation of Wakefields in a Plasma Channel. <i>Physical Review Letters</i> , 2015, 114, 145003.	7.8	44
32	Laser-heater assisted plasma channel formation in capillary discharge waveguides. <i>Physics of Plasmas</i> , 2013, 20, 020703.	1.9	42
33	Control of tunable, monoenergetic laser-plasma-accelerated electron beams using a shock-induced density downramp injector. <i>Physical Review Accelerators and Beams</i> , 2017, 20, .	1.6	42
34	Nonuniform discharge currents in active plasma lenses. <i>Physical Review Accelerators and Beams</i> , 2017, 20, .	1.6	40
35	Demonstration of a high repetition rate capillary discharge waveguide. <i>Journal of Applied Physics</i> , 2016, 119, .	2.5	39
36	Broadband single-shot electron spectrometer for GeV-class laser-plasma-based accelerators. <i>Review of Scientific Instruments</i> , 2008, 79, 053301.	1.3	37

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37	Thermal emittance from ionization-induced trapping in plasma accelerators. <i>Physical Review Special Topics: Accelerators and Beams</i> , 2014, 17, .	1.8	37
38	Efficient Modeling of Laser-Plasma Accelerators with INF&RNO. <i>AIP Conference Proceedings</i> , 2010, , .	0.4	36
39	Generation and pointing stabilization of multi-GeV electron beams from a laser plasma accelerator	1.9	36
40	Coupled beam hose and self-modulation instabilities in overdense plasma. <i>Physical Review E</i> , 2012, 86, 026402.	2.1	35
41	Enhancement of Maximum Attainable Ion Energy in the Radiation Pressure Acceleration Regime Using a Guiding Structure. <i>Physical Review Letters</i> , 2015, 114, 105003.	7.8	32
42	Ion acceleration in laser generated megatesla magnetic vortex. <i>Physics of Plasmas</i> , 2019, 26, .	1.9	32
43	Wavefront-sensor-based electron density measurements for laser-plasma accelerators. <i>Review of Scientific Instruments</i> , 2010, 81, 033108.	1.3	29
44	Laser red shifting based characterization of wakefield excitation in a laser-plasma accelerator. <i>Physics of Plasmas</i> , 2013, 20, .	1.9	29
45	Reflectance characterization of tape-based plasma mirrors. <i>Physics of Plasmas</i> , 2016, 23, .	1.9	29
46	Control of quasi-monoenergetic electron beams from laser-plasma accelerators with adjustable shock density profile. <i>Physics of Plasmas</i> , 2018, 25, .	1.9	29
47	Helium-3 and helium-4 acceleration by high power laser pulses for hadron therapy. <i>Physical Review Special Topics: Accelerators and Beams</i> , 2015, 18, .	1.8	28
48	An accurate and efficient laser-envelope solver for the modeling of laser-plasma accelerators. <i>Plasma Physics and Controlled Fusion</i> , 2018, 60, 014002.	2.1	27
49	Plasma channel diagnostic based on laser centroid oscillations. <i>Physics of Plasmas</i> , 2010, 17, 056706.	1.9	26
50	Emittance preservation in plasma-based accelerators with ion motion. <i>Physical Review Accelerators and Beams</i> , 2017, 20, .	1.6	26
51	Laser beam coupling with capillary discharge plasma for laser wakefield acceleration applications. <i>Physics of Plasmas</i> , 2017, 24, .	1.9	24
52	Saturation of the Hosing Instability in Quasilinear Plasma Accelerators. <i>Physical Review Letters</i> , 2017, 119, 244801.	7.8	24
53	Suppression of Beam Hosing in Plasma Accelerators with Ion Motion. <i>Physical Review Letters</i> , 2018, 121, 264802.	7.8	24
54	Group velocity and pulse lengthening of mismatched laser pulses in plasma channels. <i>Physics of Plasmas</i> , 2011, 18, .	1.9	22

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55	Staging of laser-plasma accelerators. <i>Physics of Plasmas</i> , 2016, 23, 056705.	1.9	22
56	Electron beam charge diagnostics for laser plasma accelerators. <i>Physical Review Special Topics: Accelerators and Beams</i> , 2011, 14, .	1.8	21
57	Pulse evolution and plasma-wave phase velocity in channel-guided laser-plasma accelerators. <i>Physical Review E</i> , 2015, 92, 023109.	2.1	21
58	Laser-heated capillary discharge plasma waveguides for electron acceleration to 8 GeV. <i>Physics of Plasmas</i> , 2020, 27, 053102.	1.9	21
59	Tunable polarization plasma channel undulator for narrow bandwidth photon emission. <i>Physical Review Accelerators and Beams</i> , 2016, 19, .	1.6	19
60	Measurement of the laser-pulse group velocity in plasma waveguides. <i>Physical Review E</i> , 2014, 89, 063103.	2.1	17
61	Comparative study of active plasma lenses in high-quality electron accelerator transport lines. <i>Physics of Plasmas</i> , 2018, 25, .	1.9	17
62	Absolute calibration of GafChromic film for very high flux laser driven ion beams. <i>Review of Scientific Instruments</i> , 2019, 90, 053301.	1.3	17
63	Free-electron lasers driven by laser plasma accelerators. <i>AIP Conference Proceedings</i> , 2017, , .	0.4	16
64	Plasma equilibrium inside various cross-section capillary discharges. <i>Physics of Plasmas</i> , 2017, 24, .	1.9	14
65	Direct measurement of focusing fields in active plasma lenses. <i>Physical Review Accelerators and Beams</i> , 2018, 21, .	1.6	14
66	Plasma density diagnostic for capillary-discharge based plasma channels. <i>Physics of Plasmas</i> , 2015, 22, .	1.9	12
67	Accurate modeling of the hose instability in plasma wakefield accelerators. <i>Physics of Plasmas</i> , 2018, 25, 056703.	1.9	12
68	Density characterization of discharged gas-filled capillaries through common-path two-color spectral-domain interferometry. <i>Optics Letters</i> , 2018, 43, 2776.	3.3	12
69	Gas density structure of supersonic flows impinged on by thin blades for laser-plasma accelerator targets. <i>Physics of Fluids</i> , 2020, 32, 066108.	4.0	11
70	High-sensitivity plasma density retrieval in a common-path second-harmonic interferometer through simultaneous group and phase velocity measurement. <i>Physics of Plasmas</i> , 2019, 26, 023106.	1.9	10
71	Radiation sources and diagnostics with ultrashort electron bunches. <i>Physics of Plasmas</i> , 2002, 9, 2428-2436.	1.9	9
72	Laser-heated capillary discharge waveguides as tunable structures for laser-plasma acceleration. <i>Physics of Plasmas</i> , 2020, 27, .	1.9	9

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73	Efficiency considerations for high-energy physics applications of laser-plasma accelerators. AIP Conference Proceedings, 2016, , .	0.4	7
74	Betatron radiation from electron beams in plasma focusing channels. AIP Conference Proceedings, 2001, , .	0.4	6
75	A compact, high resolution energy, and emittance diagnostic for electron beams using active plasma lenses. Applied Physics Letters, 2020, 116, .	3.3	6
76	Transient behavior of a supersonic three-dimensional micronozzle with an intersecting capillary. Journal of Applied Physics, 2016, 119, .	2.5	5
77	Design of a prototype laser-plasma injector for an electron synchrotron. Physical Review Accelerators and Beams, 2021, 24, .	1.6	5
78	Fluid modeling of intense laser-plasma interactions. AIP Conference Proceedings, 2001, , .	0.4	4
79	Transport and phase-space manipulation of laser-plasma accelerated electron beams using active plasma lenses. AIP Conference Proceedings, 2017, , .	0.4	4
80	Gas density structure of supersonic flows impinged on by thin blades for laser-plasma accelerators. AIP Conference Proceedings, 2017, , .	0.4	4
81	Filtering higher-order laser modes using leaky plasma channels. Physics of Plasmas, 2018, 25, .	1.9	4
82	Parametric emittance measurements of electron beams produced by a laser plasma accelerator. Plasma Physics and Controlled Fusion, 2018, 60, 054015.	2.1	4
83	Emittance preserving thin film plasma mirrors for GeV scale laser plasma accelerators. Physical Review Accelerators and Beams, 2021, 24, .	1.6	4
84	Control of transverse wakefields via phase-matched laser modes in parabolic plasma channels. Physics of Plasmas, 2019, 26, 013107.	1.9	3
85	Cryogenically formed discharge waveguide. Physical Review Accelerators and Beams, 2021, 24, .	1.6	2
86	Nonparaxial propagation of intense laser pulses in plasmas. AIP Conference Proceedings, 2001, , .	0.4	1
87	Laser mode control using leaky plasma channels. AIP Conference Proceedings, 2017, , .	0.4	1
88	FEMTOSECOND ELECTRON AND X-RAY GENERATION BY LASER AND PLASMA-BASED SOURCES. , 2000, , .		1
89	Studies of space-charge effects in ultrashort electron bunches. AIP Conference Proceedings, 2001, , .	0.4	0
90	Raman Forward Scattering of High-Intensity Chirped Laser Pulses. AIP Conference Proceedings, 2002, , .	0.4	0