Emmanuel d'HumiÃ¨res

List of Publications by Year
in descending order

135	3,937	172457	133252
papers	citations	29 h-index	59 g-index

138	138	138	2042
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Laser-driven proton scaling laws and new paths towards energy increase. Nature Physics, 2006, 2, 48-54.	16.7	669
2	Ultrafast Laser-Driven Microlens to Focus and Energy-Select Mega-Electron Volt Protons. Science, 2006, 312, 410-413.	12.6	284
3	Practicability of protontherapy using compact laser systems. Medical Physics, 2004, 31, 1587-1592.	3.0	255
4	Proton beams generated with high-intensity lasers: Applications to medical isotope production. Applied Physics Letters, 2003, 83, 3039-3041.	3.3	191
5	Laser-driven platform for generation and characterization of strong quasi-static magnetic fields. New Journal of Physics, 2015, 17, 083051.	2.9	130
6	Target charging in short-pulse-laserâ€“plasma experiments. Physical Review E, 2014, 89, 013102.	2.1	115
7	Physics of giant electromagnetic pulse generation in short-pulse laser experiments. Physical Review E, 2015, 91, 043106.	2.1	102
8	Hot Electrons Transverse Refluxing in Ultraintense Laser-Solid Interactions. Physical Review Letters, 2010, 105, 015005.	7.8	97
9	Energetic protons generated by ultrahigh contrast laser pulses interacting with ultrathin targets. Physics of Plasmas, 2007, 14, 030701.	1.9	92
10	Divergence of laser-driven relativistic electron beams. Physical Review E, 2010, 82, 036405.	2.1	88
11	Laser-Foil Acceleration of High-Energy Protons in Small-Scale Plasma Gradients. Physical Review Letters, 2007, 99, 015002.	7.8	84
12	Dynamic model of target charging by short laser pulse interactions. Physical Review E, 2015, 92, 043107.	2.1	65
13	Comparative spectra and efficiencies of ions laser-accelerated forward from the front and rear surfaces of thin solid foils. Physics of Plasmas, 2007, 14, 053105.	1.9	62
14	Pair creation in collision of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi>Î³</mml:mi></mml:math>-ray beams produced with high-intensity lasers. Physical Review E, 2016, 93, 013201.	2.1	57
15	Generation of high-energy electron-positron pairs in the collision of a laser-accelerated electron beam with a multipetawatt laser. Physical Review Accelerators and Beams, 2017, 20, .	1.6	54
16	Dynamic Control over Mega-Ampere Electron Currents in Metals Using Ionization-Driven Resistive Magnetic Fields. Physical Review Letters, 2011, 107, 135005.	7.8	53
17	Optimization of laser-target interaction for proton acceleration. Physics of Plasmas, 2013, 20, .	1.9	51
18	Gigagauss-scale quasistatic magnetic field generation in a snail-shaped target. Physical Review E, 2015, 91, 043107.	2.1	51

#	Article	IF	Citations
19	Influence of Ion Mass on Laser-Energy Absorption and Synchrotron Radiation at Ultrahigh Laser Intensities. Physical Review Letters, 2013, 110, 215003.	7.8	50
20	Hot and Cold Electron Dynamics Following High-Intensity Laser Matter Interaction. Physical Review Letters, 2008, 101, 105004.	7.8	48
21	Short Intense Laser Pulse Collapse in Near-Critical Plasma. Physical Review Letters, 2013, 110, 085001.	7.8	46
22	Ultrafast Synchrotron-Enhanced Thermalization of Laser-Driven Colliding Pair Plasmas. Physical Review Letters, 2015, 115, 215003.	7.8	46
23	Power Scaling for Collimated <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline" overflow="scroll"><mml:mi>Î³</mml:mi></mml:math> -Ray Beams Generated by Structured Laser-Irradiated Targets and Its Application to Two-Photon Pair Production. Physical Review Applied, 2020, 13, .	3.8	45
24	Leveraging extreme laser-driven magnetic fields for gamma-ray generation and pair production. Plasma Physics and Controlled Fusion, 2018, 60, 054006.	2.1	43
25	Modeling of radiation losses in ultrahigh power laser-matter interaction. Physical Review E, 2012, 86, 036401.	2.1	37
26	Collimated protons accelerated from an overdense gas jet irradiated by a 1â€‰Âµm wavelength high-intensity short-pulse laser. Scientific Reports, 2017, 7, 13505.	3.3	37
27	Relativistic High-Current Electron-Beam Stopping-Power Characterization in Solids and Plasmas: Collisional Versus Resistive Effects. Physical Review Letters, 2012, 109, 255002.	7.8	35
28	Modeling of radiative and quantum electrodynamics effects in PIC simulations of ultra-relativistic laser-plasma interaction. Journal of Physics: Conference Series, 2016, 688, 012058.	0.4	34
29	Development of the PETawatt Aquitaine Laser system and new perspectives in physics. Physica Scripta, 2014, T161, 014016.	2.5	32
30	Laser acceleration of high-energy protons in variable density plasmas. New Journal of Physics, 2009, 11, 023038.	2.9	26
31	Collisionless Shocks Driven by Supersonic Plasma Flows with Self-Generated Magnetic Fields. Physical Review Letters, 2019, 123, 055002.	7.8	26
32	Laser triggered micro-lens for focusing and energy selection of MeV protons. Laser and Particle Beams, 2007, 25, 71-77.	1.0	25
33	Energetic <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi>Î±</mml:mi></mml:math> -particle sources produced through proton-boron reactions by high-energy high-intensity laser beams. Physical Review E, 2021, 103, 053202.	2.1	25
34	Focusing Dynamics of High-Energy Density, Laser-Driven Ion Beams. Physical Review Letters, 2012, 108, 055001.	7.8	24
35	Enhanced hot-electron localization and heating in high-contrast ultraintense laser irradiation of microcone targets. Physical Review E, 2009, 79, 036408.	2.1	23
36	Extreme brightness laser-based neutron pulses as a pathway for investigating nucleosynthesis in the laboratory. Matter and Radiation at Extremes, 2019, 4, .	3.9	23

#	Article	IF	Citations
37	Proton acceleration by collisionless shocks using a supersonic H2 gas-jet target and high-power infrared laser pulses. Physics of Plasmas, 2019, 26, .	1.9	22
38	Generation of Î±-Particle Beams With a Multi-kJ, Peta-Watt Class Laser System. Frontiers in Physics, 2020, 8, .	2.1	22
39	Guiding, Focusing, and Collimated Transport of Hot Electrons in a Canal in the Extended Tip of Cone Targets. Physical Review Letters, 2009, 102, 205003.	7.8	21
40	Investigation of laser ion acceleration in low-density targets using exploded foils. Plasma Physics and Controlled Fusion, 2013, 55, 124025.	2.1	19
41	Numerical simulations of energy transfer in counter-streaming plasmas. High Energy Density Physics, 2013, 9, 231-238.	1.5	18
42	Investigation of longitudinal proton acceleration in exploded targets irradiated by intense short-pulse laser. Physics of Plasmas, 2014, 21, .	1.9	18
43	Dynamics and structure of self-generated magnetics fields on solids following high contrast, high intensity laser irradiation. Physics of Plasmas, 2015, 22, .	1.9	18
44	Production of relativistic electrons at subrelativistic laser intensities. Physical Review E, 2020, 101, 031201.	2.1	18
45	Ion acceleration using high-contrast ultra-intense lasers. European Physical Journal Special Topics, 2006, 133, 1151-1153.	0.2	18
46	Enhanced Propagation for Relativistic Laser Pulses in Inhomogeneous Plasmas Using Hollow Channels. Physical Review Letters, 2010, 105, 225001.	7.8	17
47	High-energy radiation and pair production by Coulomb processes in particle-in-cell simulations. Physics of Plasmas, 2019, 26, .	1.9	17
48	Relativistic magnetic reconnection in laser laboratory for testing an emission mechanism of hard-state black hole system. Physical Review E, 2020, 102, 033202.	2.1	17
49	A case study of low-frequency waves at the magnetopause. Annales Geophysicae, 2001, 19, 1463-1470.	1.6	16
50	Collisionless plasma interpenetration in a strong magnetic field for laboratory astrophysics experiments. Physics of Plasmas, 2014, 21, 022117.	1.9	16
51	Deterministic model for the transport of energetic particles: Application in the electron radiotherapy. Physica Medica, 2015, 31, 912-921.	0.7	16
52	Stochastic heating in ultra high intensity laser-plasma interaction: Theory and PIC code simulations. Laser and Particle Beams, 2006, 24, 223-230.	1.0	15
53	Î³-ray generation enhancement by the charge separation field in laser-target interaction in the radiation dominated regime. Physics of Plasmas, 2014, 21, 123120.	1.9	15
54	Unraveling resistive versus collisional contributions to relativistic electron beam stopping power in cold-solid and in warm-dense plasmas. Physics of Plasmas, 2014, 21, 033101.	1.9	15

#	Article	IF	Citations
55	Spectral features of laser-accelerated protons for radiotherapy applications. Physics in Medicine and Biology, 2008, 53, 4383-4397.	3.0	14
56	A novel platform to study magnetized high-velocity collisionless shocks. High Energy Density Physics, 2015, 17, 190-197.	1.5	14
57	Synchrotron emission from nanowire array targets irradiated by ultraintense laser pulses. Plasma Physics and Controlled Fusion, 2018, 60, 074009.	2.1	14
58	Laboratory investigation of particle acceleration and magnetic field compression in collisionless colliding fast plasma flows. Communications Physics, 2019, 2, .	5.3	14
59	Over-critical sharp-gradient plasma slab produced by the collision of laser-induced blast-waves in a gas jet: Application to high-energy proton acceleration. Physics of Plasmas, 2021, 28, .	1.9	14
60	Synchrotron radiation from ultrahigh-intensity laser-plasma interactions and competition with Bremsstrahlung in thin foil targets. Physical Review Research, 2020, 2, .	3.6	14
61	New micro-cones targets can efficiently produce higher energy and lower divergence particle beams. Laser and Particle Beams, 2010, 28, 513-519.	1.0	13
62	Characterization of laser-produced fast electron sources for fast ignition. Plasma Physics and Controlled Fusion, 2010, 52, 124024.	2.1	13
63	Reduction of the fast electron angular dispersion by means of varying-resistivity structured targets. Physics of Plasmas, 2013, 20, 013109.	1.9	13
64	Asymptotic-Preserving Scheme for the M₁-Maxwell System in the Quasi-Neutral Regime. Communications in Computational Physics, 2016, 19, 301-328.	1.7	13
65	Comparison of longitudinal and transverse smoothing by spectral dispersion on stimulated Brillouin backscattering in inertial confinement fusion plasmas. Physics of Plasmas, 2019, 26, .	1.9	13
66	Investigation of high intensity laser proton acceleration with underdense targets. Journal of Physics: Conference Series, 2010, 244, 042023.	0.4	12
67	The PETAL+ project: X-ray and charged particle diagnostics for plasma experiments at LMJ-PETAL. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2013, 720, 141-143.	1.6	12
68	Electronâ€“positron pairs beaming in the Breitâ€“Wheeler process. Plasma Physics and Controlled Fusion, 2017, 59, 014024.	2.1	12
69	Production of energetic proton beams with lasers. Review of Scientific Instruments, 2006, 77, 03B302.	1.3	11
70	Effect of the laser pulse temporal shape on the hole boring efficiency. Plasma Physics and Controlled Fusion, 2012, 54, 095008.	2.1	11
71	Detailed characterization of a laboratory magnetized supercritical collisionless shock and of the associated proton energization. Matter and Radiation at Extremes, 2022, 7, .	3.9	11
72	Proton beam Weibel instability simulations of energy transfer in gamma-ray bursts. Journal of Physics: Conference Series, 2010, 244, 042006.	0.4	10

#	Article	IF	Citations
73	Magnetization of laser-produced plasma in a chiral hollow target. New Journal of Physics, 2017, 19, 033023.	2.9	10
74	Modeling the ultra-high intensity laser pulse â€“ cone target interaction for ion acceleration at CETAL facility. Laser and Particle Beams, 2017, 35, 458-466.	1.0	10
75	Expansion of a radially symmetric blast shell into a uniformly magnetized plasma. Physics of Plasmas, 2018, 25, .	1.9	10
76	Laboratory evidence for proton energization by collisionless shock surfing. Nature Physics, 2021, 17, 1177-1182.	16.7	10
77	Laser-driven proton acceleration and applications: Recent results. European Physical Journal: Special Topics, 2009, 175, 105-110.	2.6	9
78	Betatron emission from relativistic electrons in a high intensity optical lattice. Physical Review Special Topics: Accelerators and Beams, 2013, 16, .	1.8	9
79	Stimulated Raman scattering in the relativistic regime in near-critical plasmas. Physical Review E, 2017, 95, 013208.	2.1	9
80	Shocks and phase space vortices driven by a density jump between two clouds of electrons and protons. Plasma Physics and Controlled Fusion, 2020, 62, 025022.	2.1	9
81	Measuring hot electron distributions in intense laser interaction with dense matter. New Journal of Physics, 2012, 14, 063023.	2.9	8
82	Passive tailoring of laser-accelerated ion beam cut-off energy by using double foil assembly. Physics of Plasmas, 2014, 21, .	1.9	8
83	Emergence of MHD structures in a collisionless PIC simulation plasma. Physics of Plasmas, 2017, 24, .	1.9	8
84	Effect of differential cross section in Breitâ€“Wheeler pair production. Plasma Physics and Controlled Fusion, 2018, 60, 104001.	2.1	8
85	Integrated simulations of ignition scale fusion targets for the HiPER project. Journal of Physics: Conference Series, 2010, 244, 022032.	0.4	7
86	Low-energy proton calibration and energy-dependence linearization of EBT-XD radiochromic films. Review of Scientific Instruments, 2019, 90, 083301.	1.3	7
87	Modeling the interaction of an ultra-high intensity laser pulse with nano-layered flat-top cone targets for ion acceleration. Plasma Physics and Controlled Fusion, 2019, 61, 085007.	2.1	7
88	Optical Smoothing with Reduced FM-to-AM Conversion in High-Power Lasers Using Spectral Distribution. Physical Review Applied, 2019, 12, .	3.8	7
89	Thomson parabola and time-of-flight detector cross-calibration methodology on the ALLS 100 TW laser-driven ion acceleration beamline. Review of Scientific Instruments, 2020, 91, 103303.	1.3	7
90	Enhanced laser-driven proton acceleration using ultrasmall nanoparticles. Physical Review Accelerators and Beams, 2019, 22, .	1.6	7

#	Article	IF	Citations
91	Bidimensional Particle-In-Cell simulations for laser-driven proton acceleration using ultra-short, ultra-high contrast laser. Physics of Plasmas, 2014, 21, 123104.	1.9	6
92	Numerical study of positron production with short-pulse high-intensity lasers. Laser and Particle Beams, 2014, 32, 171-176.	1.0	6
93	Tree code for collision detection of large numbers of particles applied to the Breitâ€“Wheeler process. Journal of Computational Physics, 2018, 355, 582-596.	3.8	6
94	X-ray emission from relativistic electrons in a transverse high intensity optical lattice. Journal of Physics: Conference Series, 2013, 414, 012008.	0.4	5
95	A compact broadband ion beam focusing device based on laser-driven megagauss thermoelectric magnetic fields. Review of Scientific Instruments, 2015, 86, 043502.	1.3	5
96	Impact of the electron to ion mass ratio on unstable systems in particle-in-cell simulations. Physics of Plasmas, 2018, 25, .	1.9	5
97	Application of harmonics imaging to focal spot measurements of the â€œPETALâ€•laser. Journal of Applied Physics, 2019, 126, .	2.5	5
98	Stochastic electron heating in an interference field of several laser pulses of a picosecond duration. Plasma Physics and Controlled Fusion, 2019, 61, 025015.	2.1	5
99	Laser-driven collisionless shock acceleration of protons from gas jets tailored by one or two nanosecond beams. Physics of Plasmas, 2021, 28, .	1.9	5
100	Fast electron propagation in high-density plasmas created by 1D shock wave compression: Experiments and simulations. Journal of Physics: Conference Series, 2010, 244, 022060.	0.4	4
101	Self-proton/ion radiography of laser-produced proton/ion beam from thin foil targets. Physics of Plasmas, 2012, 19, .	1.9	4
102	Longitudinal proton probing of ultrafast and high-contrast laser-solid interactions. EPJ Web of Conferences, 2013, 59, 17014.	0.3	4
103	The role of electron heating in electromagnetic collisionless shock formation. High Energy Density Physics, 2015, 17, 175-182.	1.5	4
104	High Intensity Laser Proton Acceleration with Underdense Targets. , 2010, , .		3
105	Impact of FM-AM conversion on smoothing by spectral dispersion. Proceedings of SPIE, 2015, , .	0.8	3
106	Ponderomotive scaling in the radiative damping regime. Physics of Plasmas, 2017, 24, 103302.	1.9	3
107	Failed self-reformation of a sub-critical fast magnetosonic shock in collisionless plasma. Plasma Research Express, 2019, 1, 035001.	0.9	3
108	Space and time resolved measurement of surface magnetic field in high intensity short pulse laser matter interactions. Physics of Plasmas, 2019, 26, .	1.9	3

#	Article	IF	Citations
109	Gravitational influence of high power laser pulses. Physical Review D, 2022, 105, .	4.7	3
110	Enhanced energy localization and heating in high contrast ultra-intense laser produced plasmas via novel conical micro-target design. Journal of Physics: Conference Series, 2008, 112, 022050.	0.4	2
111	Importance of magnetic resistive fields in the heating of a micro-cone target irradiated by a high intensity laser. European Physical Journal: Special Topics, 2009, 175, 89-95.	2.6	2
112	Scattering of relativistic electron beam by two counter-propagating laser pulses: A new approach to Raman X-ray amplification. EPJ Web of Conferences, 2013, 59, 18004.	0.3	2
113	Longitudinal laser ion acceleration in low density targets: experimental optimization on the Titan laser facility and numerical investigation of the ultra-high intensity limit. , 2015, , .		2
114	TNSA-like plasmas collision in an ambient magnetic field as a route to astrophysical collisionless shock observation in a laboratory. High Energy Density Physics, 2015, 17, 183-189.	1.5	2
115	overflow="scroll" xmlns:xocs="http://www.elsevier.com/xml/xocs/dtd" xmlns:xs="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns="http://www.elsevier.com/xml/ja/dtd" xmlns:ja="http://www.elsevier.com/xml/ja/dtd" xmlns:mml="http://www.w3.org/1998/Math/MathML" xmlns:tb="http://www.elsevier.com/xml/common/table/dtd"	2.6	2
116	Modeling of High-Energy Particles and Radiation Production for Multipetawatt Laser Facilities. Laser and Particle Beams, 2021, 2021, .	1.0	2
117	Amplified short-wavelength light scattered by relativistic electrons in the laser-induced optical lattice. Physical Review Special Topics: Accelerators and Beams, 2015, 18, .	1.8	2
118	Scaling Laws for Proton Acceleration from the Rear Surface of Laser-Irradiated Thin Foils. AIP Conference Proceedings, 2006, , .	0.4	1
119	LASER-ACCELERATED PROTONS: PERSPECTIVES FOR CONTROL/OPTIMIZATION OF BEAM PROPERTIES. International Journal of Modern Physics B, 2007, 21, 590-599.	2.0	1
120	Ultra-fast ionization modeling in laser-plasma interaction. Journal of Physics: Conference Series, 2008, 112, 022108.	0.4	1
121	Energy transfer in counter-propagating plasmas at sub-relativistic velocities. , 2013, , .		1
122	Quasi-perpendicular fast magnetosonic shock with wave precursor in collisionless plasma. Physics of Plasmas, 2018, 25, 074502.	1.9	1
123	Modeling the interaction of an ultra-high intensity laser pulse with an ultra-thin nanostructured foil target. Plasma Physics and Controlled Fusion, 2020, 62, 095014.	2.1	1
124	Proton beam generation by ultra-high intensity laserâ€“solid interaction. Radiation Effects and Defects in Solids, 2005, 160, 631-637.	1.2	0
125	Numerical modeling and applications of laser-accelerated ion beams. Computer Physics Communications, 2007, 177, 60-63.	7.5	0
126	Laser-acceleration of high-energy protons in small-scale gradients. Journal of Physics: Conference Series, 2008, 112, 022082.	0.4	0

#	Article	IF	Citations
127	Effect of the radiation reaction in classical regimes of interaction of ultra-strong electromagnetic fields with plasmas. Proceedings of SPIE, 2013, , .	0.8	0
128	Laser ion acceleration in the high laser energy and high laser intensity regimes. EPJ Web of Conferences, 2013, 59, 17010.	0.3	0
129	Numerical simulations of energy transfer in two collisionless interpenetrating plasmas. EPJ Web of Conferences, 2013, 59, 15003.	0.3	0
130	Laser ion acceleration in the ultra-high laser intensity regime. , 2013, , .		0
131	Modelling of radiation losses for ion acceleration at ultra-high laser intensities. EPJ Web of Conferences, 2013, 59, 17019.	0.3	0
132	Preparation of the high power laser system PETAL for experimental studies of inertial confinement fusion and high energy density states of matter. Journal of Physics: Conference Series, 2016, 688, 012012.	0.4	0
133	Laser-ion acceleration at ELI-NP. , 2018, , .		0
134	Simulations on Pair Creation in Collision of Î³-Beams Produced with High Intensity Lasers. , 2016, , .		0
135	Enhancement of Laser-Driven Proton Beams Using Nanostructured Solid Foils. , 2018, , .		0