

Michael Tatarakis

List of Publications by Year in descending order

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137
papers

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66343

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times ranked

2925
citing authors

#	ARTICLE	IF	CITATIONS
1	Measurements of Energetic Proton Transport through Magnetized Plasma from Intense Laser Interactions with Solids. <i>Physical Review Letters</i> , 2000, 84, 670-673.	7.8	664
2	A study of picosecond laser-solid interactions up to 10^{19} W/cm ² . <i>Physics of Plasmas</i> , 1997, 4, 447-457.	1.9	583
3	Energetic Heavy-Ion and Proton Generation from Ultraintense Laser-Plasma Interactions with Solids. <i>Physical Review Letters</i> , 2000, 85, 1654-1657.	7.8	470
4	High harmonic generation in the relativistic limit. <i>Nature Physics</i> , 2006, 2, 456-459.	16.7	418
5	Photonuclear Physics when a Multiterawatt Laser Pulse Interacts with Solid Targets. <i>Physical Review Letters</i> , 2000, 84, 899-902.	7.8	234
6	Magnetic Reconnection and Plasma Dynamics in Two-Beam Laser-Solid Interactions. <i>Physical Review Letters</i> , 2006, 97, 255001.	7.8	220
7	Observation of a highly directional γ -ray beam from ultrashort, ultraintense laser pulse interactions with solids. <i>Physics of Plasmas</i> , 1999, 6, 2150-2156.	1.9	197
8	Effect of the Plasma Density Scale Length on the Direction of Fast Electrons in Relativistic Laser-Solid Interactions. <i>Physical Review Letters</i> , 2000, 84, 1459-1462.	7.8	197
9	Measuring huge magnetic fields. <i>Nature</i> , 2002, 415, 280-280.	27.8	176
10	Laboratory measurements of 0.7 T magnetic fields generated during high-intensity laser interactions with dense plasmas. <i>Physical Review E</i> , 2004, 70, 026401.	2.1	173
11	Laser generation of proton beams for the production of short-lived positron emitting radioisotopes. <i>Nuclear Instruments & Methods in Physics Research B</i> , 2001, 183, 449-458.	1.4	164
12	Proton Acceleration from High-Intensity Laser Interactions with Thin Foil Targets. <i>Physical Review Letters</i> , 2003, 90, 064801.	7.8	161
13	Multi-MeV Ion Production from High-Intensity Laser Interactions with Underdense Plasmas. <i>Physical Review Letters</i> , 1999, 83, 737-740.	7.8	153
14	Neutron production from picosecond laser irradiation of deuterated targets at intensities of. <i>Plasma Physics and Controlled Fusion</i> , 1998, 40, 175-182.	2.1	148
15	Electron Acceleration in Cavitated Channels Formed by a Petawatt Laser in Low-Density Plasma. <i>Physical Review Letters</i> , 2005, 94, .	7.8	147
16	Production of radioactive nuclides by energetic protons generated from intense laser-plasma interactions. <i>Applied Physics Letters</i> , 2001, 78, 19-21.	3.3	142
17	Ion Acceleration by Collisionless Shocks in High-Intensity-Laser-Underdense-Plasma Interaction. <i>Physical Review Letters</i> , 2004, 93, 155003.	7.8	132
18	Rayleigh-Taylor Instability of an Ultrathin Foil Accelerated by the Radiation Pressure of an Intense Laser. <i>Physical Review Letters</i> , 2012, 108, 225002.	7.8	128

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19	Plasma Formation on the Front and Rear of Plastic Targets due to High-Intensity Laser-Generated Fast Electrons. <i>Physical Review Letters</i> , 1998, 81, 999-1002.	7.8	127
20	Propagation Instabilities of High-Intensity Laser-Produced Electron Beams. <i>Physical Review Letters</i> , 2003, 90, 175001.	7.8	125
21	Characterization of a gamma-ray source based on a laser-plasma accelerator with applications to radiography. <i>Applied Physics Letters</i> , 2002, 80, 2129-2131.	3.3	124
22	Ultrahigh-intensity laser-produced plasmas as a compact heavy ion injection source. <i>IEEE Transactions on Plasma Science</i> , 2000, 28, 1110-1155.	1.3	115
23	Energetic proton production from relativistic laser interaction with high density plasmas. <i>Physics of Plasmas</i> , 2000, 7, 2055-2061.	1.9	115
24	Measurements of ultrastrong magnetic fields during relativistic laser-plasma interactions. <i>Physics of Plasmas</i> , 2002, 9, 2244-2250.	1.9	115
25	Measurements of the Inverse Faraday Effect from Relativistic Laser Interactions with an Underdense Plasma. <i>Physical Review Letters</i> , 2001, 87, 215004.	7.8	113
26	Magnetic focusing and trapping of high-intensity laser-generated fast electrons at the rear of solid targets. <i>Physical Review E</i> , 1999, 59, 6032-6036.	2.1	96
27	Observation of a Hot High-Current Electron Beam from a Self-Modulated Laser Wakefield Accelerator. <i>Physical Review Letters</i> , 2001, 86, 1227-1230.	7.8	95
28	Time-resolved refractive index and absorption mapping of light-plasma filaments in water. <i>Optics Letters</i> , 2008, 33, 86.	3.3	89
29	Fast particle generation and energy transport in laser-solid interactions. <i>Physics of Plasmas</i> , 2001, 8, 2323-2330.	1.9	88
30	Coherent Control of High Harmonic Generation via Dual-Gas Multijet Arrays. <i>Physical Review Letters</i> , 2011, 107, 175002.	7.8	73
31	Demonstration of Fusion-Evaporation and Direct-Interaction Nuclear Reactions using High-Intensity Laser-Plasma-Accelerated Ion Beams. <i>Physical Review Letters</i> , 2003, 91, 075006.	7.8	71
32	Proton deflectometry of a magnetic reconnection geometry. <i>Physics of Plasmas</i> , 2010, 17, .	1.9	65
33	The effect of high intensity laser propagation instabilities on channel formation in underdense plasmas. <i>Physics of Plasmas</i> , 2003, 10, 438-442.	1.9	59
34	Observations of the filamentation of high-intensity laser-produced electron beams. <i>Physical Review E</i> , 2004, 70, 056412.	2.1	57
35	Bidirectional jet formation during driven magnetic reconnection in two-beam laser-plasma interactions. <i>Physics of Plasmas</i> , 2008, 15, .	1.9	57
36	Measurements of relativistic self-phase-modulation in plasma. <i>Physical Review E</i> , 2002, 66, 036409.	2.1	56

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37	Optical and x-ray observations of carbon and aluminium fibre Z-pinch plasmas. Plasma Physics and Controlled Fusion, 1997, 39, 1-25.	2.1	55
38	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
39	Dynamics of the Critical Surface in High-Intensity Laser-Solid Interactions: Modulation of the XUV Harmonic Spectra. Physical Review Letters, 2002, 88, 155001.	7.8	54
40	Fast Advection of Magnetic Fields by Hot Electrons. Physical Review Letters, 2010, 105, 095001.	7.8	48
41	Quantitative two-dimensional shadowgraphic method for high-sensitivity density measurement of under-critical laser plasmas. Optics Letters, 2007, 32, 1238.	3.3	47
42	Observation of Postsoliton Expansion Following Laser Propagation through an Underdense Plasma. Physical Review Letters, 2010, 105, 175007.	7.8	45
43	Observation of annular electron beam transport in multi-TeraWatt laser-solid interactions. Plasma Physics and Controlled Fusion, 2006, 48, L11-L22.	2.1	36
44	Enhanced harmonic conversion efficiency in the self-guided propagation of femtosecond ultraviolet laser pulses in argon. Applied Physics B: Lasers and Optics, 2005, 80, 211-214.	2.2	34
45	Two-dimensional magneto-hydrodynamic modeling of carbon fiber Z-pinch experiments. Physics of Plasmas, 1997, 4, 4309-4317.	1.9	32
46	A nearly real-time high temperature laser plasma diagnostic using photonuclear reactions in tantalum. Review of Scientific Instruments, 2002, 73, 3801-3805.	1.3	31
47	High current and directional electron beams produced from gold photocathodes by ultrashort excimer laser pulses. Applied Physics Letters, 1992, 60, 1939-1941.	3.3	30
48	Optical probing of fiber z-pinch plasmas. Physics of Plasmas, 1998, 5, 682-691.	1.9	27
49	The influence of the solid to plasma phase transition on the generation of plasma instabilities. Nature Communications, 2017, 8, 1713.	12.8	27
50	High-Intensity-Laser-Driven Z-Pinches. Physical Review Letters, 2004, 92, 095001.	7.8	24
51	Creation of persistent, straight, 2 mm long laser driven channels in underdense plasmas. Physics of Plasmas, 2010, 17, .	1.9	22
52	MegaGauss magnetic field generation by ultra-short pulses at relativistic intensities. Plasma Physics and Controlled Fusion, 2013, 55, 035002.	2.1	22
53	Effect of Relativistic Plasma on Extreme-Ultraviolet Harmonic Emission from Intense Laser-Matter Interactions. Physical Review Letters, 2008, 100, 125005.	7.8	21
54	Target charging effects on proton acceleration during high-intensity short-pulse laser-solid interactions. Applied Physics Letters, 2004, 84, 2766-2768.	3.3	19

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55	Generation of Ultrahigh-Velocity Ionizing Shocks with Petawatt-Class Laser Pulses. <i>Physical Review Letters</i> , 2009, 103, 255001.	7.8	19
56	Three dimensional transient behavior of thin films surface under pulsed laser excitation. <i>Applied Physics Letters</i> , 2013, 103, .	3.3	19
57	Plasma cavitation in ultraintense laser interactions with underdense helium plasmas. <i>New Journal of Physics</i> , 2010, 12, 045014.	2.9	18
58	High acoustic strains in Si through ultrafast laser excitation of Ti thin-film transducers. <i>Optics Express</i> , 2015, 23, 17191.	3.4	18
59	Observation of ion temperatures exceeding background electron temperatures in petawatt laser-solid experiments. <i>Plasma Physics and Controlled Fusion</i> , 2005, 47, L49-L56.	2.1	17
60	Temporally and spatially resolved measurements of multi-megagauss magnetic fields in high intensity laser-produced plasmas. <i>Physics of Plasmas</i> , 2008, 15, .	1.9	17
61	Measurements of forward scattered laser radiation from intense sub-ps laser interactions with underdense plasmas. <i>Physics of Plasmas</i> , 2006, 13, 113103.	1.9	16
62	An integrated method for material properties characterization based on pulsed laser generated surface acoustic waves. <i>Microelectronic Engineering</i> , 2013, 112, 249-254.	2.4	15
63	AN EVALUATION OF SUSTAINABILITY AND SOCIETAL IMPACT OF HIGH POWER LASER AND FUSION TECHNOLOGIES: A CASE FOR A NEW EUROPEAN RESEARCH INFRASTRUCTURE. <i>High Power Laser Science and Engineering</i> , 0, , 1-7.	4.6	15
64	Efficient control of quantum paths via dual-gas high harmonic generation. <i>New Journal of Physics</i> , 2011, 13, 113001.	2.9	14
65	Target normal sheath acceleration and laser wakefield acceleration particle-in-cell simulations performance on CPU & GPU architectures for high-power laser systems. <i>Plasma Physics and Controlled Fusion</i> , 2020, 62, 094005.	2.1	14
66	Preliminary investigation on the use of low current pulsed power Z-pinch plasma devices for the study of early stage plasma instabilities. <i>Plasma Physics and Controlled Fusion</i> , 2018, 60, 014031.	2.1	13
67	Measurement of forward Raman scattering and electron acceleration from high-intensity laser-plasma interactions at 527 nm. <i>IEEE Transactions on Plasma Science</i> , 2000, 28, 1122-1127.	1.3	12
68	Return current and proton emission from short pulse laser interactions with wire targets. <i>Physics of Plasmas</i> , 2004, 11, 2806-2813.	1.9	12
69	The thermo-mechanical behavior of thin metal films under nanosecond laser pulse excitation above the thermoelastic regime. <i>Applied Physics A: Materials Science and Processing</i> , 2015, 118, 739-748.	2.3	12
70	Elastoplastic study of nanosecond-pulsed laser interaction with metallic films using 3D multiphysics fem modeling. <i>International Journal of Damage Mechanics</i> , 2016, 25, 42-55.	4.2	12
71	Reduction of proton acceleration in high-intensity laser interaction with solid two-layer targets. <i>Physics of Plasmas</i> , 2006, 13, 123101.	1.9	10
72	A Review of Simulation Methods of Laser Matter Interactions Focused on Nanosecond Laser Pulsed Systems. <i>Journal of Multiscale Modeling</i> , 2013, 05, 1330001.	1.1	10

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73	Betatron-type laser-plasma x-ray sources generated in multi-electron gas targets. Applied Physics Letters, 2021, 118, .	3.3	10
74	High-intensity laser-driven secondary radiation sources using the ZEUS 45 TW laser system at the Institute of Plasma Physics and Lasers of the Hellenic Mediterranean University Research Centre. High Power Laser Science and Engineering, 2021, 9, .	4.6	10
75	A Review of Finite Element Studies in String Musical Instruments. Acoustics, 2022, 4, 183-202.	1.4	10
76	High repetition rate pseudospark trigger generator. Review of Scientific Instruments, 2008, 79, 086103.	1.3	9
77	Using self-generated harmonics as a diagnostic of high intensity laser-produced plasmas. Plasma Physics and Controlled Fusion, 2002, 44, B233-B245.	2.1	8
78	Ultrafast laser pulse chirp effects on laser-generated nanoacoustic strains in Silicon. Ultrasonics, 2018, 86, 14-19.	3.9	8
79	Electron quantum path control in high harmonic generation via chirp variation of strong laser pulses. Scientific Reports, 2021, 11, 23882.	3.3	8
80	Clark et al. Reply:. Physical Review Letters, 2006, 96, .	7.8	7
81	Filamentary Structure of Current Sheath in Miniature Plasma Focus. IEEE Transactions on Plasma Science, 2011, 39, 2432-2433.	1.3	7
82	Role of broadband-laser-pulse temporal extent in H ₂ +photodissociation. Physical Review A, 2012, 86, .	2.5	7
83	Innovative Education and Training in high power laser plasmas (PowerLaPs) for plasma physics, high power laser-matter interactions and high energy density physics – theory and experiments. High Power Laser Science and Engineering, 2019, 7, .	4.6	7
84	Integrated nanosecond laser full-field imaging for femtosecond laser-generated surface acoustic waves in metal film-glass substrate multilayer materials. Applied Physics A: Materials Science and Processing, 2019, 125, 1.	2.3	7
85	The importance of the laser pulse-ablator interaction dynamics prior to the ablation plasma phase in inertial confinement fusion studies. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2020, 378, 20200030.	3.4	7
86	Hydrodynamic computational modelling and simulations of collisional shock waves in gas jet targets. High Power Laser Science and Engineering, 2020, 8, .	4.6	7
87	A numerical study on laboratory plasma dynamics validated by low current x-pinch experiments. Plasma Physics and Controlled Fusion, 2020, 62, 125012.	2.1	7
88	A Detailed FEM Study on the Vibro-acoustic Behaviour of Crash and Splash Musical Cymbals. International Journal of Circuits, Systems and Signal Processing, 2022, 16, 948-955.	0.3	7
89	X-ray emission from plasmas formed using an excimer laser with various pulse lengths. Journal Physics D: Applied Physics, 1998, 31, 2777-2782.	2.8	6
90	Controlling nanoscale acoustic strains in silicon using chirped femtosecond laser pulses. Applied Physics Letters, 2016, 108, 254102.	3.3	6

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91	Innovative education and training in high power laser plasmas (PowerLaPs) for plasma physics, high power laser matter interactions and high energy density physics: experimental diagnostics and simulations. High Power Laser Science and Engineering, 2020, 8, .	4.6	6
92	Improving a high-power laser-based relativistic electron source: the role of laser pulse contrast and gas jet density profile. Plasma Physics and Controlled Fusion, 2022, 64, 044007.	2.1	6
93	A PORTABLE PULSED NEUTRON GENERATOR. International Journal of Modern Physics Conference Series, 2014, 27, 1460127.	0.7	5
94	On the correlation of light and sound radiation following laser-induced breakdown in air. Journal Physics D: Applied Physics, 2020, 53, 435207.	2.8	5
95	Instability growth mitigation study of a dielectric coated metallic wire in a low current Z-pinch configuration. Plasma Physics and Controlled Fusion, 2021, 63, 085010.	2.1	5
96	Small-divergence electron beams produced by multiphoton excitation of metallic surfaces. Applied Physics Letters, 1991, 58, 194-196.	3.3	4
97	Measurements of magnetic fields generated in underdense plasmas by intense lasers. AIP Conference Proceedings, 2006, , .	0.4	4
98	Analysis of the Heat Affected Zone and Surface Roughness during Laser Micromachining of Metals. Key Engineering Materials, 2019, 827, 122-127.	0.4	4
99	A Study on the Influence of Laser Parameters on Laser-Assisted Machining of AISI H-13 Steel. Key Engineering Materials, 2019, 827, 92-97.	0.4	4
100	Downscaled Finite Element Modeling of Metal Targets for Surface Roughness Level under Pulsed Laser Irradiation. Applied Sciences (Switzerland), 2021, 11, 1253.	2.5	4
101	Spectral and Divergence Characteristics of Plateau High-Order Harmonics Generated by Femtosecond Chirped Laser Pulses in a Semi-Infinite Gas Cell. Atoms, 2022, 10, 53.	1.6	4
102	<title>Single-shot wavefront measurement of sub-ps laser pulses</title>. , 1995, , .		3
103	Studies of the fast ignition route to inertial confinement fusion at the Rutherford Appleton Laboratory. Fusion Engineering and Design, 1999, 44, 239-243.	1.9	3
104	Diagnosis of peak laser intensity from high-energy ion measurements during intense laser interactions with underdense plasmas. Laser and Particle Beams, 2000, 18, 595-600.	1.0	3
105	Ultra-high-intensity laser propagation through underdense plasma. IEEE Transactions on Plasma Science, 2002, 30, 44-45.	1.3	3
106	Photonics Laboratory Education with a Research-Oriented Approach. , 2006, , .		3
107	Proton probe measurement of fast advection of magnetic fields by hot electrons. Plasma Physics and Controlled Fusion, 2011, 53, 124026.	2.1	3
108	Note: A novel trigger generator for a pseudospark switch. Review of Scientific Instruments, 2015, 86, 016108.	1.3	3

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109	High performance simulations of a single X-pinch. Plasma Physics and Controlled Fusion, 2022, 64, 025003.	2.1	3
110	X-ray emission from plasmas generated by 450 femtosecond excimer laser pulses. Physica Scripta, 1997, 55, 651-653.	2.5	2
111	Needs and Examination of Strategies for Lifelong Learning in Engineering Education. , 2007, , .		2
112	The influence of the load's geometrical characteristics on the generation of the electro-thermo-mechanical instability in a single wire Z-pinch. Journal of Physics: Conference Series, 2021, 1730, 012092.	0.4	2
113	Polymer-Gel Radiation Dosimetry of Laser-Based Relativistic Electron Sources for Biomedical Applications: First Qualitative Results and Experimental Challenges. Frontiers in Physics, 2022, 10, .	2.1	2
114	A computational study on the optical shaping of gas targets via blast wave collisions for magnetic vortex acceleration. High Power Laser Science and Engineering, 2022, 10, .	4.6	2
115	Enhancement Of The X-Ray Emission Of Laser Induced Plasma In The Presence Of A High Static Electric Field. Proceedings of SPIE, 1989, 1140, 436.	0.8	1
116	Faraday rotation measurements in MAGPIE generator. , 1997, , .		1
117	Laser induced nuclear reactions. , 1998, , .		1
118	The production of high-energy electrons from the interaction of an intense laser pulse with an underdense plasma. Journal of Modern Optics, 2003, 50, 673-681.	1.3	1
119	Cooperation and Telecooperation for Effective Workplace Learning. , 2006, , .		1
120	Issues of the HiPER fundamental science programme. Proceedings of SPIE, 2011, , .	0.8	1
121	Simulation of the Transient Behavior of Matter with Characteristic Geometrical Variations & Defects Irradiated by Nanosecond Laser Pulses Using FEA. Key Engineering Materials, 0, 665, 157-160.	0.4	1
122	Dynamics of the heat affected zone and induced strains in laser machining below ablation threshold. IOP Conference Series: Materials Science and Engineering, 2020, 916, 012050.	0.6	1
123	Innovative education and training in high power laser plasmas (PowerLaPs) for plasma physics, high power laser matter interactions and high energy density physics: experimental diagnostics and simulations " CORRIGENDUM. High Power Laser Science and Engineering, 2020, 8, .	4.6	1
124	Experimentally validated modeling of the optical energy deposition in highly ionized ambient air by strong femtosecond laser pulses. European Physical Journal D, 2021, 75, 1.	1.3	1
125	Optical probing of high-intensity laser interactions with underdense plasmas using the VULCAN petawatt laser facility. European Physical Journal Special Topics, 2006, 133, 543-547.	0.2	1
126	Characterization of an X-ray Source Generated by a Portable Low-Current X-Pinch. Applied Sciences (Switzerland), 2021, 11, 11173.	2.5	1

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127	Proton Acceleration and High Energy Density Physics from Laser Foil Interactions. , 0, , .		0
128	Multi-terawatt frequency doubling of picosecond pulses for plasma interactions. , 1999, 3492, 414.		0
129	High intensity laser generation of proton beams for the production of \hat{I}^2 [sup +] sources used in positron emission tomography. AIP Conference Proceedings, 2001, , .	0.4	0
130	Nuclear diagnostics of high intensity laser plasma interactions. AIP Conference Proceedings, 2002, , .	0.4	0
131	<title>Attosecond science: present status and prospects</title>. , 2003, , .		0
132	Direct comparison of quantitative shadowgraphy with interferometry for plasma density measurements. , 2007, , .		0
133	Complete Control of High-Harmonic Generation for High Average Power Applications. , 2011, , .		0
134	A new XUV-source for seeding a FEL at high repetition rates. Proceedings of SPIE, 2011, , .	0.8	0
135	Design of a Pixelated Imaging System for Fast Neutron Sources. Designs, 2019, 3, 25.	2.4	0
136	On the micro-modelling of surface roughness in pulsed laser machining. IOP Conference Series: Materials Science and Engineering, 2021, 1037, 012007.	0.6	0
137	A modified modular multilevel converter topology trigger generator for a pseudospark switch. Review of Scientific Instruments, 2022, 93, 064711.	1.3	0