

Michael Tatarakis

List of Publications by Year in descending order

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137
papers

7,287
citations

66343

42
h-index

54911

84
g-index

139
all docs

139
docs citations

139
times ranked

2925
citing authors

#	ARTICLE	IF	CITATIONS
1	High performance simulations of a single X-pinch. Plasma Physics and Controlled Fusion, 2022, 64, 025003.	2.1	3
2	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
3	A Review of Finite Element Studies in String Musical Instruments. Acoustics, 2022, 4, 183-202.	1.4	10
4	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
5	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
6	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
7	A modified modular multilevel converter topology trigger generator for a pseudospark switch. Review of Scientific Instruments, 2022, 93, 064711.	1.3	0
8	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
9	On the micro-modelling of surface roughness in pulsed laser machining. IOP Conference Series: Materials Science and Engineering, 2021, 1037, 012007.	0.6	0
10	Betatron-type laser-plasma x-ray sources generated in multi-electron gas targets. Applied Physics Letters, 2021, 118, .	3.3	10
11	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
12	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
13	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
14	Downscaled Finite Element Modeling of Metal Targets for Surface Roughness Level under Pulsed Laser Irradiation. Applied Sciences (Switzerland), 2021, 11, 1253.	2.5	4
15	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
16	Characterization of an X-ray Source Generated by a Portable Low-Current X-Pinch. Applied Sciences (Switzerland), 2021, 11, 11173.	2.5	1
17	Electron quantum path control in high harmonic generation via chirp variation of strong laser pulses. Scientific Reports, 2021, 11, 23882.	3.3	8
18	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

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19	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
20	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
21	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
22	Hydrodynamic computational modelling and simulations of collisional shock waves in gas jet targets. High Power Laser Science and Engineering, 2020, 8, .	4.6	7
23	Target normal sheath acceleration and laser wakefield acceleration particle-in-cell simulations performance on CPU & GPU architectures for high-power laser systems. Plasma Physics and Controlled Fusion, 2020, 62, 094005.	2.1	14
24	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
25	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
26	Design of a Pixelated Imaging System for Fast Neutron Sources. Designs, 2019, 3, 25.	2.4	0
27	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
28	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
29	Analysis of the Heat Affected Zone and Surface Roughness during Laser Micromachining of Metals. Key Engineering Materials, 2019, 827, 122-127.	0.4	4
30	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
31	Ultrafast laser pulse chirp effects on laser-generated nanoacoustic strains in Silicon. Ultrasonics, 2018, 86, 14-19.	3.9	8
32	Preliminary investigation on the use of low current pulsed power Z-pinch plasma devices for the study of early stage plasma instabilities. Plasma Physics and Controlled Fusion, 2018, 60, 014031.	2.1	13
33	The influence of the solid to plasma phase transition on the generation of plasma instabilities. Nature Communications, 2017, 8, 1713.	12.8	27
34	Controlling nanoscale acoustic strains in silicon using chirped femtosecond laser pulses. Applied Physics Letters, 2016, 108, 254102.	3.3	6
35	Elastoplastic study of nanosecond-pulsed laser interaction with metallic films using 3D multiphysics fem modeling. International Journal of Damage Mechanics, 2016, 25, 42-55.	4.2	12
36	Note: A novel trigger generator for a pseudospark switch. Review of Scientific Instruments, 2015, 86, 016108.	1.3	3

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37	The thermo-mechanical behavior of thin metal films under nanosecond laser pulse excitation above the thermoelastic regime. Applied Physics A: Materials Science and Processing, 2015, 118, 739-748.	2.3	12
38	High acoustic strains in Si through ultrafast laser excitation of Ti thin-film transducers. Optics Express, 2015, 23, 17191.	3.4	18
39	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
40	A PORTABLE PULSED NEUTRON GENERATOR. International Journal of Modern Physics Conference Series, 2014, 27, 1460127.	0.7	5
41	Three dimensional transient behavior of thin films surface under pulsed laser excitation. Applied Physics Letters, 2013, 103, .	3.3	19
42	An integrated method for material properties characterization based on pulsed laser generated surface acoustic waves. Microelectronic Engineering, 2013, 112, 249-254.	2.4	15
43	MegaGauss magnetic field generation by ultra-short pulses at relativistic intensities. Plasma Physics and Controlled Fusion, 2013, 55, 035002.	2.1	22
44	A Review of Simulation Methods of Laser Matter Interactions Focused on Nanosecond Laser Pulsed Systems. Journal of Multiscale Modeling, 2013, 05, 1330001.	1.1	10
45	Rayleigh-Taylor Instability of an Ultrathin Foil Accelerated by the Radiation Pressure of an Intense Laser. Physical Review Letters, 2012, 108, 225002.	7.8	128
46	Role of broadband-laser-pulse temporal extent in H ₂ +photodissociation. Physical Review A, 2012, 86, .	2.5	7
47	Complete Control of High-Harmonic Generation for High Average Power Applications. , 2011, , .		0
48	Coherent Control of High Harmonic Generation via Dual-Gas Multijet Arrays. Physical Review Letters, 2011, 107, 175002.	7.8	73
49	Issues of the HiPER fundamental science programme. Proceedings of SPIE, 2011, , .	0.8	1
50	Efficient control of quantum paths via dual-gas high harmonic generation. New Journal of Physics, 2011, 13, 113001.	2.9	14
51	Filamentary Structure of Current Sheath in Miniature Plasma Focus. IEEE Transactions on Plasma Science, 2011, 39, 2432-2433.	1.3	7
52	Proton probe measurement of fast advection of magnetic fields by hot electrons. Plasma Physics and Controlled Fusion, 2011, 53, 124026.	2.1	3
53	A new XUV-source for seeding a FEL at high repetition rates. Proceedings of SPIE, 2011, , .	0.8	0
54	Fast Advection of Magnetic Fields by Hot Electrons. Physical Review Letters, 2010, 105, 095001.	7.8	48

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55	Plasma cavitation in ultraintense laser interactions with underdense helium plasmas. <i>New Journal of Physics</i> , 2010, 12, 045014.	2.9	18
56	Proton deflectometry of a magnetic reconnection geometry. <i>Physics of Plasmas</i> , 2010, 17, .	1.9	65
57	Creation of persistent, straight, 2 mm long laser driven channels in underdense plasmas. <i>Physics of Plasmas</i> , 2010, 17, .	1.9	22
58	Observation of Postsoliton Expansion Following Laser Propagation through an Underdense Plasma. <i>Physical Review Letters</i> , 2010, 105, 175007.	7.8	45
59	Generation of Ultrahigh-Velocity Ionizing Shocks with Petawatt-Class Laser Pulses. <i>Physical Review Letters</i> , 2009, 103, 255001.	7.8	19
60	High repetition rate pseudospark trigger generator. <i>Review of Scientific Instruments</i> , 2008, 79, 086103.	1.3	9
61	Time-resolved refractive index and absorption mapping of light-plasma filaments in water. <i>Optics Letters</i> , 2008, 33, 86.	3.3	89
62	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
63	Bidirectional jet formation during driven magnetic reconnection in two-beam laser-plasma interactions. <i>Physics of Plasmas</i> , 2008, 15, .	1.9	57
64	Effect of Relativistic Plasma on Extreme-Ultraviolet Harmonic Emission from Intense Laser-Matter Interactions. <i>Physical Review Letters</i> , 2008, 100, 125005.	7.8	21
65	Direct comparison of quantitative shadowgraphy with interferometry for plasma density measurements. , 2007, , .		0
66	Quantitative two-dimensional shadowgraphic method for high-sensitivity density measurement of under-critical laser plasmas. <i>Optics Letters</i> , 2007, 32, 1238.	3.3	47
67	Needs and Examination of Strategies for Lifelong Learning in Engineering Education. , 2007, , .		2
68	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
69	Cooperation and Telecooperation for Effective Workplace Learning. , 2006, , .		1
70	Magnetic Reconnection and Plasma Dynamics in Two-Beam Laser-Solid Interactions. <i>Physical Review Letters</i> , 2006, 97, 255001.	7.8	220
71	Observation of annular electron beam transport in multi-TeraWatt laser-solid interactions. <i>Plasma Physics and Controlled Fusion</i> , 2006, 48, L11-L22.	2.1	36
72	High harmonic generation in the relativistic limit. <i>Nature Physics</i> , 2006, 2, 456-459.	16.7	418

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73	Measurements of magnetic fields generated in underdense plasmas by intense lasers. AIP Conference Proceedings, 2006, , .	0.4	4
74	Clark et al. Reply:. Physical Review Letters, 2006, 96, .	7.8	7
75	Reduction of proton acceleration in high-intensity laser interaction with solid two-layer targets. Physics of Plasmas, 2006, 13, 123101.	1.9	10
76	Photonics Laboratory Education with a Research-Oriented Approach. , 2006, , .		3
77	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
78	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
79	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
80	Electron Acceleration in Cavitated Channels Formed by a Petawatt Laser in Low-Density Plasma. Physical Review Letters, 2005, 94, .	7.8	147
81	Observations of the filamentation of high-intensity laser-produced electron beams. Physical Review E, 2004, 70, 056412.	2.1	57
82	High-Intensity-Laser-Driven Z-Pinches. Physical Review Letters, 2004, 92, 095001.	7.8	24
83	Target charging effects on proton acceleration during high-intensity short-pulse laser-solid interactions. Applied Physics Letters, 2004, 84, 2766-2768.	3.3	19
84	Return current and proton emission from short pulse laser interactions with wire targets. Physics of Plasmas, 2004, 11, 2806-2813.	1.9	12
85	Laboratory measurements of 0.7 T magnetic fields generated during high-intensity laser interactions with dense plasmas. Physical Review E, 2004, 70, 026401.	2.1	173
86	Ion Acceleration by Collisionless Shocks in High-Intensity-Laser-Underdense-Plasma Interaction. Physical Review Letters, 2004, 93, 155003.	7.8	132
87	Propagation Instabilities of High-Intensity Laser-Produced Electron Beams. Physical Review Letters, 2003, 90, 175001.	7.8	125
88	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
89	Demonstration of Fusion-Evaporation and Direct-Interaction Nuclear Reactions using High-Intensity Laser-Plasma-Accelerated Ion Beams. Physical Review Letters, 2003, 91, 075006.	7.8	71
90	The effect of high intensity laser propagation instabilities on channel formation in underdense plasmas. Physics of Plasmas, 2003, 10, 438-442.	1.9	59

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91	Proton Acceleration from High-Intensity Laser Interactions with Thin Foil Targets. Physical Review Letters, 2003, 90, 064801.	7.8	161
92	<title>Attosecond science: present status and prospects</title>., 2003, , .		0
93	Characterization of a gamma-ray source based on a laser-plasma accelerator with applications to radiography. Applied Physics Letters, 2002, 80, 2129-2131.	3.3	124
94	Measurements of relativistic self-phase-modulation in plasma. Physical Review E, 2002, 66, 036409.	2.1	56
95	A nearly real-time high temperature laserâ€“plasma diagnostic using photonuclear reactions in tantalum. Review of Scientific Instruments, 2002, 73, 3801-3805.	1.3	31
96	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
97	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
98	Measurements of ultrastrong magnetic fields during relativistic laserâ€“plasma interactions. Physics of Plasmas, 2002, 9, 2244-2250.	1.9	115
99	Ultra-high-intensity laser propagation through underdense plasma. IEEE Transactions on Plasma Science, 2002, 30, 44-45.	1.3	3
100	Nuclear diagnostics of high intensity laser plasma interactions. AIP Conference Proceedings, 2002, , .	0.4	0
101	Measuring huge magnetic fields. Nature, 2002, 415, 280-280.	27.8	176
102	Measurements of the Inverse Faraday Effect from Relativistic Laser Interactions with an Underdense Plasma. Physical Review Letters, 2001, 87, 215004.	7.8	113
103	High intensity laser generation of proton beams for the production of $\hat{\text{I}}^2$ [sup +] sources used in positron emission tomography. AIP Conference Proceedings, 2001, , .	0.4	0
104	Laser generation of proton beams for the production of short-lived positron emitting radioisotopes. Nuclear Instruments & Methods in Physics Research B, 2001, 183, 449-458.	1.4	164
105	Observation of a Hot High-Current Electron Beam from a Self-Modulated Laser Wakefield Accelerator. Physical Review Letters, 2001, 86, 1227-1230.	7.8	95
106	Production of radioactive nuclides by energetic protons generated from intense laser-plasma interactions. Applied Physics Letters, 2001, 78, 19-21.	3.3	142
107	Fast particle generation and energy transport in laser-solid interactions. Physics of Plasmas, 2001, 8, 2323-2330.	1.9	88
108	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

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109	Ultrahigh-intensity laser-produced plasmas as a compact heavy ion injection source. IEEE Transactions on Plasma Science, 2000, 28, 1110-1155.	1.3	115
110	Measurement of forward Raman scattering and electron acceleration from high-intensity laser-plasma interactions at 527 nm. IEEE Transactions on Plasma Science, 2000, 28, 1122-1127.	1.3	12
111	Effect of the Plasma Density Scale Length on the Direction of Fast Electrons in Relativistic Laser-Solid Interactions. Physical Review Letters, 2000, 84, 1459-1462.	7.8	197
112	Photonuclear Physics when a Multiterawatt Laser Pulse Interacts with Solid Targets. Physical Review Letters, 2000, 84, 899-902.	7.8	234
113	Energetic proton production from relativistic laser interaction with high density plasmas. Physics of Plasmas, 2000, 7, 2055-2061.	1.9	115
114	Energetic Heavy-Ion and Proton Generation from Ultraintense Laser-Plasma Interactions with Solids. Physical Review Letters, 2000, 85, 1654-1657.	7.8	470
115	Measurements of Energetic Proton Transport through Magnetized Plasma from Intense Laser Interactions with Solids. Physical Review Letters, 2000, 84, 670-673.	7.8	664
116	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
117	Observation of a highly directional $\hat{\nu}^3$ -ray beam from ultrashort, ultraintense laser pulse interactions with solids. Physics of Plasmas, 1999, 6, 2150-2156.	1.9	197
118	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
119	Multi-MeV Ion Production from High-Intensity Laser Interactions with Underdense Plasmas. Physical Review Letters, 1999, 83, 737-740.	7.8	153
120	Multi-terawatt frequency doubling of picosecond pulses for plasma interactions. , 1999, 3492, 414.		0
121	Optical probing of fiber z-pinch plasmas. Physics of Plasmas, 1998, 5, 682-691.	1.9	27
122	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
123	Neutron production from picosecond laser irradiation of deuterated targets at intensities of. Plasma Physics and Controlled Fusion, 1998, 40, 175-182.	2.1	148
124	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
125	Laser induced nuclear reactions. , 1998, , .		1
126	X-ray emission from plasmas generated by 450 femtosecond excimer laser pulses. Physica Scripta, 1997, 55, 651-653.	2.5	2

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127	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
128	Two-dimensional magneto-hydrodynamic modeling of carbon fiber Z-pinch experiments. Physics of Plasmas, 1997, 4, 4309-4317.	1.9	32
129	A study of picosecond laser-solid interactions up to $10^{19} \text{ W cm}^{-2}$. Physics of Plasmas, 1997, 4, 447-457.	1.9	583
130	Faraday rotation measurements in MAGPIE generator. , 1997, , .		1
131	<title>Single-shot wavefront measurement of sub-ps laser pulses</title>. , 1995, , .		3
132	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
133	Small-divergence electron beams produced by multiphoton excitation of metallic surfaces. Applied Physics Letters, 1991, 58, 194-196.	3.3	4
134	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
135	Proton Acceleration and High Energy Density Physics from Laser Foil Interactions. , 0, , .		0
136	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
137	AN EVALUATION OF SUSTAINABILITY AND SOCIETAL IMPACT OF HIGH POWER LASER AND FUSION TECHNOLOGIES: A CASE FOR A NEW EUROPEAN RESEARCH INFRASTRUCTURE. High Power Laser Science and Engineering, 0, , 1-7.	4.6	15