

# Pietro Musumeci

## List of Publications by Year in descending order

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108  
papers

2,557  
citations

172386

29  
h-index

214721

47  
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108  
all docs

108  
docs citations

108  
times ranked

1899  
citing authors

#	ARTICLE	IF	CITATIONS
1	Tapered helical undulator system for high efficiency energy extraction from a high brightness electron beam. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2022, 1028, 166370.	0.7	0
2	Positron sources: from conventional to advanced accelerator concepts-based colliders. Journal of Instrumentation, 2022, 17, P05015.	0.5	9
3	Considerations for a TeV collider based on dielectric laser accelerators. Journal of Instrumentation, 2022, 17, P05012.	0.5	5
4	Beam dynamics in dielectric laser acceleration. Journal of Instrumentation, 2022, 17, P05014.	0.5	2
5	Single-pass high-efficiency terahertz free-electron laser. Nature Photonics, 2022, 16, 441-447.	15.6	20
6	Terawatt attosecond x-ray source driven by a plasma accelerator. APL Photonics, 2021, 6, .	3.0	16
7	Ultrafast optical melting of trimer superstructure in layered $1T\text{â€}^2\text{-TaTe}_2$ . Communications Physics, 2021, 4, .	2.0	15
8	SHarD: A beam dynamics simulation code for dielectric laser accelerators based on spatial harmonic field expansion. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2021, 1013, 165635.	0.7	5
9	Ultrafast optically-induced melting of trimer clusters in $1T\text{â€}^{\text{TM}}\text{-TaTe}_2$ . , 2021, , .		1
10	Resonant phase matching by oblique illumination of a dielectric laser accelerator. Physical Review Accelerators and Beams, 2021, 24, .	0.6	4
11	Ultrashort electron probe opportunities. Nature Photonics, 2020, 14, 199-200.	15.6	4
12	Self-consistent numerical approach to track particles in free electron laser interaction with electromagnetic field modes. Physical Review Accelerators and Beams, 2020, 23, .	0.6	10
13	Mapping photocathode quantum efficiency with ghost imaging. Physical Review Accelerators and Beams, 2020, 23, .	0.6	5
14	Superradiant and stimulated-superradiant emission of bunched electron beams. Reviews of Modern Physics, 2019, 91, .	16.4	80
15	A THz driven split-ring resonator based ultrafast relativistic electron streak camera. AIP Advances, 2019, 9, 085209.	0.6	8
16	Ultrafast Relativistic Electron Nanoprobes. Communications Physics, 2019, 2, .	2.0	28
17	Temporal magnification for streaked ultrafast electron diffraction and microscopy. Ultramicroscopy, 2019, 199, 1-6.	0.8	3
18	Challenges in simulating beam dynamics of dielectric laser acceleration. International Journal of Modern Physics A, 2019, 34, 1942031.	0.5	7

#	ARTICLE	IF	CITATIONS
19	Next generation high brightness electron beams from ultrahigh field cryogenic rf photocathode sources. <i>Physical Review Accelerators and Beams</i> , 2019, 22, .	0.6	41
20	Knife-edge based measurement of the 4D transverse phase space of electron beams with picometer-scale emittance. <i>Physical Review Accelerators and Beams</i> , 2019, 22, .	0.6	9
21	Broadband THz amplification and superradiant spontaneous emission in a guided FEL. <i>Optics Express</i> , 2019, 27, 20221.	1.7	16
22	High-Energy Time-Resolved Electron Diffraction. <i>Springer Handbooks</i> , 2019, , 971-1008.	0.3	3
23	Meter-Scale Terahertz-Driven Acceleration of a Relativistic Beam. <i>Physical Review Letters</i> , 2018, 120, 094801.	2.9	72
24	Demonstration of Cascaded Modulator-Chicane Microbunching of a Relativistic Electron Beam. <i>Physical Review Letters</i> , 2018, 120, 114802.	2.9	19
25	Summary of Working Group 3: Laser and High-Gradient Structure-Based Acceleration. , 2018, , .		0
26	All Optical Control of Beam Dynamics in a DLA. , 2018, , .		0
27	Non-invasive low charge electron beam time-of-arrival diagnostic using a plasmonics-enhanced photoconductive antenna. <i>Applied Physics Letters</i> , 2018, 113, .	1.5	2
28	Brightness of femtosecond nonequilibrium photoemission in metallic photocathodes at wavelengths near the photoemission threshold. <i>Journal of Applied Physics</i> , 2018, 124, .	1.1	15
29	Electron Ghost Imaging. <i>Physical Review Letters</i> , 2018, 121, 114801.	2.9	77
30	High-field nonlinear optical response and phase control in a dielectric laser accelerator. <i>Communications Physics</i> , 2018, 1, .	2.0	58
31	Optical design for increased interaction length in a high gradient dielectric laser accelerator. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 2018, 909, 252-256.	0.7	11
32	Advances in bright electron sources. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 2018, 907, 209-220.	0.7	64
33	Tapering enhanced stimulated superradiant oscillator. <i>Physical Review Accelerators and Beams</i> , 2018, 21, .	0.6	13
34	Single-shot reconstruction of core 4D phase space of high-brightness electron beams using metal grids. <i>Physical Review Accelerators and Beams</i> , 2018, 21, .	0.6	13
35	Enhanced energy gain in a dielectric laser accelerator using a tilted pulse front laser. <i>Optics Express</i> , 2018, 26, 29216.	1.7	42
36	Double-shot MeV electron diffraction and microscopy. <i>Structural Dynamics</i> , 2017, 4, 044025.	0.9	4

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37	Design and implementation of an optimal laser pulse front tilting scheme for ultrafast electron diffraction in reflection geometry with high temporal resolution. <i>Structural Dynamics</i> , 2017, 4, 044032.	0.9	4
38	Direct Measurement of Sub-10Ås Relativistic Electron Beams with Ultralow Emittance. <i>Physical Review Letters</i> , 2017, 118, 154802.	2.9	135
39	S-band 1.4 cell photoinjector design for high brightness beam generation. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 2017, 865, 109-113.	0.7	9
40	Dielectric laser acceleration and focusing using short-pulse lasers with an arbitrary laser phase distribution. <i>AIP Conference Proceedings</i> , 2017, , .	0.3	3
41	High efficiency tapered free-electron lasers with a prebunched electron beam. <i>Physical Review Accelerators and Beams</i> , 2017, 20, .	0.6	18
42	Demonstration of Single-Shot Picosecond Time-Resolved MeV Electron Imaging Using a Compact Permanent Magnet Quadrupole Based Lens. <i>Physical Review Letters</i> , 2016, 117, 024801.	2.9	30
43	High Efficiency Energy Extraction from a Relativistic Electron Beam in a Strongly Tapered Undulator. <i>Physical Review Letters</i> , 2016, 117, 174801.	2.9	28
44	THz-driven zero-slippage IFEL scheme for phase space manipulation. <i>New Journal of Physics</i> , 2016, 18, 113045.	1.2	20
45	Ultrafast gating of a mid-infrared laser pulse by a sub-pC relativistic electron beam. <i>Journal of Applied Physics</i> , 2015, 118, 234506.	1.1	11
46	Hollow cone illumination for fast TEM, and outrunning damage with electrons. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2015, 48, 214003.	0.6	15
47	RF Photoinjector Based Time-Resolved MeV Electron Microscopy. <i>Microscopy and Microanalysis</i> , 2015, 21, 653-654.	0.2	0
48	Generation and measurement of velocity bunched ultrashort bunch of pC charge. <i>Physical Review Special Topics: Accelerators and Beams</i> , 2015, 18, .	1.8	21
49	Tapering enhanced stimulated superradiant amplification. <i>New Journal of Physics</i> , 2015, 17, 063036.	1.2	30
50	New technology based on clamping for high gradient radio frequency photogun. <i>Physical Review Special Topics: Accelerators and Beams</i> , 2015, 18, .	1.8	30
51	Fabrication process for thick-film micromachined multi-pole electromagnets. <i>Journal of Microelectromechanical Systems</i> , 2014, 23, 505-507.	1.7	3
52	IFEL driven mode locked free electron laser. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2014, 47, 234007.	0.6	0
53	A proposal for fs-electron microscopy experiments on high-energy excitations in solids. <i>Micron</i> , 2014, 63, 40-46.	1.1	7
54	Maximum current density and beam brightness achievable by laser-driven electron sources. <i>Physical Review Special Topics: Accelerators and Beams</i> , 2014, 17, .	1.8	50

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55	Progress on the Hybrid Gun Project at UCLA. <i>Physics Procedia</i> , 2014, 52, 2-6.	1.2	7
56	Single-Shot MeV Transmission Electron Microscopy with Picosecond Temporal Resolution. <i>Physical Review Applied</i> , 2014, 2, .	1.5	88
57	High-quality electron beams from a helical inverse free-electron laser accelerator. <i>Nature Communications</i> , 2014, 5, 4928.	5.8	39
58	Surface-Plasmon Resonance-Enhanced Multiphoton Emission of High-Brightness Electron Beams from a Nanostructured Copper Cathode. <i>Physical Review Letters</i> , 2013, 110, 074801.	2.9	88
59	Effect of an ultrafast laser induced plasma on a relativistic electron beam to determine temporal overlap in pump-probe experiments. <i>Ultramicroscopy</i> , 2013, 127, 14-18.	0.8	21
60	Single-shot 35 fs temporal resolution electron shadowgraphy. <i>Applied Physics Letters</i> , 2013, 102, .	1.5	23
61	Observation of Time-Domain Modulation of Free-Electron-Laser Pulses by Multi-peaked Electron-Energy Spectrum. <i>Physical Review Letters</i> , 2013, 111, 114802.	2.9	68
62	Imaging nanometer-scale beamlets arrays of relativistic electron beams. , 2013, , .		0
63	An asymmetric emittance electron source for the GALAXIE dielectric-laser accelerator injector. , 2013, , .		1
64	Longitudinal phase space manipulation of an ultrashort electron beam via THz IFEL interaction. <i>AIP Conference Proceedings</i> , 2013, , .	0.3	2
65	Experimental observation of helical microbunching of a relativistic electron beam. <i>Applied Physics Letters</i> , 2012, 100, .	1.5	18
66	Defects annealing in 4H-SiC epitaxial layer probed by low temperature photoluminescence. <i>Materials Science in Semiconductor Processing</i> , 2012, 15, 740-743.	1.9	3
67	A perspective on novel sources of ultrashort electron and X-ray pulses. <i>Chemical Physics</i> , 2012, 392, 1-9.	0.9	51
68	Nonlinear Longitudinal Space Charge Oscillations in Relativistic Electron Beams. <i>Physical Review Letters</i> , 2011, 106, 184801.	2.9	48
69	Longitudinal profile diagnostic scheme with subfemtosecond resolution for high-brightness electron beams. <i>Physical Review Special Topics: Accelerators and Beams</i> , 2011, 14, .	1.8	15
70	Ion track effect on point defect production in SiC. <i>Radiation Effects and Defects in Solids</i> , 2011, 166, 480-486.	0.4	3
71	Imaging single electrons to enable the generation of ultrashort beams for single-shot femtosecond relativistic electron diffraction. <i>Journal of Applied Physics</i> , 2011, 110, .	1.1	30
72	Ultra-Short Electron Beam Compression and Phase Locking Using an Inverse Free Electron Laser Interaction in the THz Regime. , 2010, , .		0

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73	High-Gradient High-Energy-Gain Inverse Free Electron Laser Experiment Using a Helical Undulator. AIP Conference Proceedings, 2010, , .	0.3	1
74	High quality single shot diffraction patterns using ultrashort megaelectron volt electron beams from a radio frequency photoinjector. Review of Scientific Instruments, 2010, 81, 013306.	0.6	79
75	Electro-optic sampling at 90° interaction geometry for time-of-arrival stamping of ultrafast relativistic electron diffraction. Physical Review Special Topics: Accelerators and Beams, 2010, 13, .	1.8	28
76	Multiphoton Photoemission from a Copper Cathode Illuminated by Ultrashort Laser Pulses in an rf Photoinjector. Physical Review Letters, 2010, 104, 084801.	2.9	68
77	Laser-induced melting of a single crystal gold sample by time-resolved ultrafast relativistic electron diffraction. Applied Physics Letters, 2010, 97, .	1.5	106
78	Capturing ultrafast structural evolutions with a single pulse of MeV electrons: Radio frequency streak camera based electron diffraction. Journal of Applied Physics, 2010, 108, .	1.1	52
79	rf streak camera based ultrafast relativistic electron diffraction. Review of Scientific Instruments, 2009, 80, 013302.	0.6	16
80	Longitudinal phase space characterization of the blow-out regime of rf photoinjector operation. Physical Review Special Topics: Accelerators and Beams, 2009, 12, .	1.8	31
81	Efficient harmonic microbunching in a 7th-order inverse-free-electron laser interaction. Physical Review Special Topics: Accelerators and Beams, 2009, 12, .	1.8	10
82	Electron emission characterization of Mg photocathode grown by pulsed laser deposition within an $S$ -band rf gun. Physical Review Special Topics: Accelerators and Beams, 2009, 12, .	1.8	15
83	Helical Electron-Beam Microbunching by Harmonic Coupling in a Helical Undulator. Physical Review Letters, 2009, 102, 174801.	2.9	30
84	Novel Radio-Frequency Gun Structures for Ultrafast Relativistic Electron Diffraction. Microscopy and Microanalysis, 2009, 15, 290-297.	0.2	11
85	Electro-optic sampling for time resolving relativistic ultrafast electron diffraction. , 2009, , .		2
86	Relativistic electron diffraction at the UCLA Pegasus photoinjector laboratory. Ultramicroscopy, 2008, 108, 1450-1453.	0.8	60
87	Experimental Generation and Characterization of Uniformly Filled Ellipsoidal Electron-Beam Distributions. Physical Review Letters, 2008, 100, 244801.	2.9	122
88	NON-LINEAR EVOLUTION OF SHORT PULSES IN FEL CASCADED UNDULATORS AND THE FEL HARMONIC CASCADE. International Journal of Modern Physics A, 2007, 22, 3794-3809.	0.5	1
89	Optimum electron bunch creation in a photoinjector using space-charge expansion. , 2007, , .		0
90	Ultrafast beam research at the PEGASUS laboratory. , 2007, , .		2

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91	Direct Measurement of the Double Emittance Minimum in the Beam Dynamics of the Sparc High-Brightness Photoinjector. Physical Review Letters, 2007, 99, 234801.	2.9	59
92	The free-electron laser harmonic cascade. New Journal of Physics, 2006, 8, 294-294.	1.2	25
93	High Energy Gain of Trapped Electrons in a Tapered, Diffraction-Dominated Inverse-Free-Electron Laser. Physical Review Letters, 2005, 94, 154801.	2.9	47
94	Velocity bunching of high-brightness electron beams. Physical Review Special Topics: Accelerators and Beams, 2005, 8, .	1.8	65
95	Study of a THz IFEL prebuncher for laser-plasma accelerators. AIP Conference Proceedings, 2004, , .	0.3	0
96	Experiments on laser driven beatwave acceleration in a ponderomotively formed plasma channel. Physics of Plasmas, 2004, 11, 2875-2881.	0.7	30
97	The SPARC/X SASE-FEL Projects. Laser and Particle Beams, 2004, 22, 341-350.	0.4	8
98	Optical and structural properties of SiC layers grown by an electron cyclotron resonance CVD technique. Diamond and Related Materials, 2001, 10, 1264-1267.	1.8	5
99	Commissioning and measurements of the Neptune photo-injector. AIP Conference Proceedings, 2001, , .	0.3	4
100	Dopant profile measurements in ion implanted 6H-SiC by scanning capacitance microscopy. Applied Surface Science, 2001, 184, 183-189.	3.1	10
101	Particle and light-induced luminescence degradation in a-SiC:H. Applied Surface Science, 2001, 184, 190-193.	3.1	2
102	Crystallisation mechanism of amorphous silicon carbide. Applied Surface Science, 2001, 184, 123-127.	3.1	39
103	TREDI: fully 3D beam dynamics simulation of RF guns, bendings and FELs. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 1999, 436, 443-444.	0.7	14
104	Diamagnetic fields due to finite-dimension intense beams in high-gain free-electron lasers. Physical Review E, 1998, 58, R2737-R2740.	0.8	2
105	High-energy ion damage in semicrystalline polyvinylidene fluoride. Journal of Applied Physics, 1995, 77, 3766-3773.	1.1	9
106	On the IFEL experiment at the UCLA Neptune Lab. , 0, , .		1
107	Velocity bunching experiment at the neptune laboratory. , 0, , .		0
108	Commissioning of the Neptune photoinjector. , 0, , .		3