Frank Tsung

List of Publications by Year
in descending order

79 papers	6,453 citations	172207 29 h-index	88477 70 g-index
79 all docs	79 docs citations	79 times ranked	2538 citing authors

#	Article	IF	Citations
1	Ultrabright Electron Bunch Injection in a Plasma Wakefield Driven by a Superluminal Flying Focus Electron Beam. Physical Review Letters, 2022, 128, 174803.	2.9	8
2	Generation of ultrahigh-brightness pre-bunched beams from a plasma cathode for X-ray free-electron lasers. Nature Communications, 2022, 13, .	5.8	11
3	Highly spin-polarized multi-GeV electron beams generated by single-species plasma photocathodes. Physical Review Research, 2022, 4, .	1.3	1
4	A new field solver for modeling of relativistic particle-laser interactions using the particle-in-cell algorithm. Computer Physics Communications, 2021, 258, 107580.	3.0	14
5	Electron acceleration at oblique angles via stimulated Raman scattering at laser irradiance <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mo>></mml:mo><mml:msup><mml:mn>10</mml:mn> width="0.16em" /><mml:mi mathvariant="normal">W</mml:mi><mml:mspace width="0.16em" /><mml:msup><mml:mrow><mml:mi>cm</mml:mi></mml:mrow><mml:mrow><mml:mo>â^’</mml:mo><mml:mn>2</mml:mn></mml:mrow mathvariant. Physical Review E, 2021, 103, 033203.	0.8	2
6	Suppressing the enhancement of stimulated Raman scattering in inhomogeneous plasmas by tuning the modulation frequency of a broadband laser. Physics of Plasmas, 2021, 28, .	0.7	14
7	A multi-sheath model for highly nonlinear plasma wakefields. Physics of Plasmas, 2021, 28, .	0.7	12
8	Accurately simulating nine-dimensional phase space of relativistic particles in strong fields. Journal of Computational Physics, 2021, 438, 110367.	1.9	13
9	InÂSitu Generation of High-Energy Spin-Polarized Electrons in a Beam-Driven Plasma Wakefield Accelerator. Physical Review Letters, 2021, 126, 054801.	2.9	28
10	On numerical errors to the fields surrounding a relativistically moving particle in PIC codes. Journal of Computational Physics, 2020, 413, 109451.	1.9	14
11	Ultra-high (>30%) coupling efficiency designs for demonstrating central hot-spot ignition on the National Ignition Facility using a Frustraum. Physics of Plasmas, 2019, 26, .	0.7	25
12	Three-dimensional particle-in-cell modeling of parametric instabilities near the quarter-critical density in plasmas. Physical Review E, 2019, 100, 041201.	0.8	14
13	Petascale particle-in-cell simulations of kinetic effects in inertial fusion energy plasmas. Plasma Physics and Controlled Fusion, 2019, 61, 044007.	0.9	4
14	Interactions of laser speckles due to kinetic stimulated Raman scattering. Physics of Plasmas, 2019, 26, .	0.7	9
15	Mitigation of stimulated Raman scattering in the kinetic regime by external magnetic fields. Physical Review E, 2018, 98, .	0.8	20
16	Role of Direct Laser Acceleration of Electrons in a Laser Wakefield Accelerator with Ionization Injection. Physical Review Letters, 2017, 118, 064801.	2.9	57
17	Controlling the numerical Cerenkov instability in PIC simulations using a customized finite difference Maxwell solver and a local FFT based current correction. Computer Physics Communications, 2017, 214, 6-17.	3.0	35
18	An examination of the scaling laws for LWFA in the self-guided nonlinear blowout regime. AIP Conference Proceedings, 2017, , .	0.3	1

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19	Self-modulated laser wakefield accelerators as x-ray sources. Plasma Physics and Controlled Fusion, 2016, 58, 034018.	0.9	37
20	Estimation of direct laser acceleration in laser wakefield accelerators using particle-in-cell simulations. Plasma Physics and Controlled Fusion, 2016, 58, 034008.	0.9	20
21	Satisfying the direct laser acceleration resonance condition in a laser wakefield accelerator. AIP Conference Proceedings, 2016, , .	0.3	4
22	Modeling of laser wakefield acceleration in Lorentz boosted frame using a Quasi-3D OSIRIS algorithm. AIP Conference Proceedings, 2016, , .	0.3	0
23	Enabling Lorentz boosted frame particle-in-cell simulations of laser wakefield acceleration in quasi-3D geometry. Journal of Computational Physics, 2016, 316, 747-759.	1.9	8
24	Elimination of the numerical Cerenkov instability for spectral EM-PIC codes. Computer Physics Communications, 2015, 192, 32-47.	3.0	27
25	Formation of Ultrarelativistic Electron Rings from a Laser-Wakefield Accelerator. Physical Review Letters, 2015, 115, 055004.	2.9	17
26	Mitigation of numerical Cerenkov radiation and instability using a hybrid finite difference-FFT Maxwell solver and a local charge conserving current deposit. Computer Physics Communications, 2015, 197, 144-152.	3.0	21
27	Role of direct laser acceleration in energy gained by electrons in a laser wakefield accelerator with ionization injection. Plasma Physics and Controlled Fusion, 2014, 56, 084006.	0.9	42
28	Improving the Self-Guiding of an Ultraintense Laser by Tailoring Its Longitudinal Profile. Physical Review Letters, 2014, 113, 245001.	2.9	8
29	Modeling of laser wakefield acceleration in Lorentz boosted frame using EM-PIC code with spectral solver. Journal of Computational Physics, 2014, 266, 124-138.	1.9	23
30	Numerical instability due to relativistic plasma drift in EM-PIC simulations. Computer Physics Communications, 2013, 184, 2503-2514.	3.0	53
31	Relativistically induced transparency acceleration of light ions by an ultrashort laser pulse interacting with a heavy-ion-plasma density gradient. Physical Review E, 2013, 88, 043105.	0.8	27
32	A multi-dimensional Vlasov-Fokker-Planck code for arbitrarily anisotropic high-energy-density plasmas. Physics of Plasmas, 2013, 20, 056303.	0.7	17
33	Anomalously Hot Electrons due to Rescatter of Stimulated Raman Scattering in the Kinetic Regime. Physical Review Letters, 2013, 110, 165001.	2.9	39
34	Exploiting multi-scale parallelism for large scale numerical modelling of laser wakefield accelerators. Plasma Physics and Controlled Fusion, 2013, 55, 124011.	0.9	98
35	Simulations of laser-wakefield acceleration with external electron-bunch injection for REGAE experiments at DESY. , 2013, , .		0
36	Modeling of laser wakefield acceleration in the Lorentz boosted frame using OSIRIS and UPIC framework. , 2013, , .		1

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37	Convective Raman amplification of light pulses causing kinetic inflation in inertial fusion plasmas. Physics of Plasmas, 2012, 19, .	0.7	18
38	Transverse emittance growth in staged laser-wakefield acceleration. Physical Review Special Topics: Accelerators and Beams, 2012, 15, .	1.8	93
39	Simulations of efficient laser wakefield accelerators from 1 to 100GeV. Journal of Plasma Physics, 2012, 78, 401-412.	0.7	8
40	Generating energetic electrons through staged acceleration in the two-plasmon-decay instability in inertial confinement fusion. Physical Review Letters, 2012, 108, 175002.	2.9	71
41	Effects of plasma wave packets and local pump depletion in stimulated Raman scattering. Physical Review E, 2010, 81, 045401.	0.8	18
42	Self-Guided Laser Wakefield Acceleration beyond 1ÂGeV Using Ionization-Induced Injection. Physical Review Letters, 2010, 105, 105003.	2.9	338
43	Beam loading by electrons in nonlinear plasma wakes. Physics of Plasmas, 2009, 16, .	0.7	96
44	Recent results and future challenges for large scale particle-in-cell simulations of plasma-based accelerator concepts. Journal of Physics: Conference Series, 2009, 180, 012005.	0.3	6
45	Growth and Saturation of Convective Modes of the Two-Plasmon Decay Instability in Inertial Confinement Fusion. Physical Review Letters, 2009, 103, 175002.	2.9	52
46	Self-Guiding of Ultrashort Relativistically Intense Laser Pulses to the Limit of Nonlinear Pump Depletion. , 2009, , .		0
47	Benchmarking the codes VORPAL, OSIRIS, and QuickPIC with Laser Wakefield Acceleration Simulations. , 2009, , .		3
48	Observation of Synchrotron Radiation from Electrons Accelerated in a Petawatt-Laser-Generated Plasma Cavity. Physical Review Letters, 2008, 100, 105006.	2.9	179
49	One-to-One Full-Scale Simulations of Laser-Wakefield Acceleration Using QuickPIC. IEEE Transactions on Plasma Science, 2008, 36, 1722-1727.	0.6	5
50	Computational studies and optimization of wakefield accelerators. Journal of Physics: Conference Series, 2008, 125, 012002.	0.3	13
51	One-to-one direct modeling of experiments and astrophysical scenarios: pushing the envelope on kinetic plasma simulations. Plasma Physics and Controlled Fusion, 2008, 50, 124034.	0.9	180
52	Quasi-Static Particle-In-Cell Simulation of the Plasma Wakefield Afterburner Concept. IEEE Transactions on Plasma Science, 2008, 36, 1294-1295.	0.6	0
53	Beam Loading in the Nonlinear Regime of Plasma-Based Acceleration. Physical Review Letters, 2008, 101, 145002.	2.9	228
54	SHEET CROSSING AND WAVE BREAKING IN THE LASER WAKEFIELD ACCELERATOR. International Journal of Modern Physics B, 2007, 21, 439-446.	1.0	1

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55	Three-dimensional particle-in-cell simulations of laser wakefield experiments. Journal of Physics: Conference Series, 2007, 78, 012077.	0.3	3
56	The physical picture of beam loading in the blowout regime. , 2007, , .		2
57	Designing LWFA in the blowout regime. , 2007, , .		2
58	Generating multi-GeV electron bunches using single stage laser wakefield acceleration in a 3D nonlinear regime. Physical Review Special Topics: Accelerators and Beams, 2007, 10, .	1.8	710
59	AlfvÃ©nic phenomena triggered by resonant absorption of an O-mode pulse. Physics of Plasmas, 2007, 14, 042101.	0.7	8
60	Stability of arbitrary electron velocity distribution functions to electromagnetic modes. Physics of Plasmas, 2007, 14, 062108.	0.7	11
61	Simulation of monoenergetic electron generation via laser wakefield accelerators for 5â€“25TW lasers. Physics of Plasmas, 2006, 13, 056708.	0.7	83
62	Space-Charge Effects in the Current-Filamentation or Weibel Instability. Physical Review Letters, 2006, 96, 105002.	2.9	91
63	Laser-Wakefield Acceleration of Monoenergetic Electron Beams in the First Plasma-Wave Period. Physical Review Letters, 2006, 96, 215001.	2.9	148
64	A nonlinear theory for multidimensional relativistic plasma wave wakefields. Physics of Plasmas, 2006, 13, 056709.	0.7	225
65	Towards the petascale in electromagnetic modeling of plasma-based accelerators for high-energy physics. Journal of Physics: Conference Series, 2006, 46, 215-219.	0.3	1
66	A global simulation for laser-driven MeV electrons in 50-Î¼m-diameter fast ignition targets. Physics of Plasmas, 2006, 13, 056308.	0.7	30
67	Advanced accelerator simulation research: miniaturizing accelerators from kilometers to meters. Journal of Physics: Conference Series, 2005, 16, 184-194.	0.3	2
68	Particle simulation of AlfvÃ©n waves excited at a boundary. Physics of Plasmas, 2005, 12, 012508.	0.7	6
69	Electron Acceleration in Cavitated Channels Formed by a Petawatt Laser in Low-Density Plasma. Physical Review Letters, 2005, 94, .	2.9	147
70	Global Simulation for Laser-Driven MeV Electrons in Fast Ignition. Physical Review Letters, 2004, 93, 185004.	2.9	79
71	Near-GeV-Energy Laser-Wakefield Acceleration of Self-Injected Electrons in a Centimeter-Scale Plasma Channel. Physical Review Letters, 2004, 93, 185002.	2.9	168
72	Monoenergetic beams of relativistic electrons from intense laserâ€“plasma interactions. Nature, 2004, 431, 535-538.	13.7	1,731

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73	Proton Shock Acceleration in Laser-Plasma Interactions. Physical Review Letters, 2004, 92, 015002.	2.9	431
74	Self-modulated wakefield and forced laser wakefield acceleration of electrons. Physics of Plasmas, 2003, 10, 2071-2077.	0.7	46
75	Dynamics of a Supersonic Plume Moving along a Magnetized Plasma. Physical Review Letters, 2003, 90, 055004.	2.9	13
76	Dynamics of a Supersonic Plume Moving Along a Magnetized Plasma. AIP Conference Proceedings, 2003, , .	0.3	0
77	Generation of ultra-intense single-cycle laser pulses by using photon deceleration. Proceedings of the National Academy of Sciences of the United States of America, 2002, 99, 29-32.	3.3	67
78	OSIRIS: A Three-Dimensional, Fully Relativistic Particle in Cell Code for Modeling Plasma Based Accelerators. Lecture Notes in Computer Science, 2002, , 342-351.	1.0	413
79	LEARNING IN RECURRENT FINITE DIFFERENCE NETWORKS. International Journal of Neural Systems, 1995, 06, 249-256.	3.2	3