

Sophia Chen

List of Publications by Year in descending order

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46
papers

1,367
citations

394421

19
h-index

345221

36
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47
all docs

47
docs citations

47
times ranked

1420
citing authors

#	ARTICLE	IF	CITATIONS
1	Laboratory formation of a scaled protostellar jet by coaligned poloidal magnetic field. <i>Science</i> , 2014, 346, 325-328.	12.6	173
2	Relativistic Quasimonoenergetic Positron Jets from Intense Laser-Solid Interactions. <i>Physical Review Letters</i> , 2010, 105, 015003.	7.8	161
3	Large-scale molecular dynamics simulations of dense plasmas: The Cimarron Project. <i>High Energy Density Physics</i> , 2012, 8, 105-131.	1.5	99
4	Space and time resolved measurements of the heating of solids to ten million kelvin by a petawatt laser. <i>New Journal of Physics</i> , 2008, 10, 043046.	2.9	70
5	Production of large volume, strongly magnetized laser-produced plasmas by use of pulsed external magnetic fields. <i>Review of Scientific Instruments</i> , 2013, 84, 043505.	1.3	57
6	Laser-accelerated particle beams for stress testing of materials. <i>Nature Communications</i> , 2018, 9, 372.	12.8	54
7	Self-generated surface magnetic fields inhibit laser-driven sheath acceleration of high-energy protons. <i>Nature Communications</i> , 2018, 9, 280.	12.8	54
8	Surface heating of wire plasmas using laser-irradiated cone geometries. <i>Nature Physics</i> , 2007, 3, 853-856.	16.7	44
9	Creation of hot dense matter in short-pulse laser-plasma interaction with tamped titanium foils. <i>Physics of Plasmas</i> , 2007, 14, 102701.	1.9	42
10	Making relativistic positrons using ultraintense short pulse lasers. <i>Physics of Plasmas</i> , 2009, 16, 122702.	1.9	42
11	Collimated protons accelerated from an overdense gas jet irradiated by a 1 μm wavelength high-intensity short-pulse laser. <i>Scientific Reports</i> , 2017, 7, 13505.	3.3	37
12	Topology of Megagauss Magnetic Fields and of Heat-Carrying Electrons Produced in a High-Power Laser-Solid Interaction. <i>Physical Review Letters</i> , 2014, 113, 235001.	7.8	36
13	Laboratory unraveling of matter accretion in young stars. <i>Science Advances</i> , 2017, 3, e1700982.	10.3	35
14	Absolute dosimetric characterization of Gafchromic EBT3 and HDv2 films using commercial flat-bed scanners and evaluation of the scanner response function variability. <i>Review of Scientific Instruments</i> , 2016, 87, 073301.	1.3	34
15	Density and temperature characterization of long-scale length, near-critical density controlled plasma produced from ultra-low density plastic foam. <i>Scientific Reports</i> , 2016, 6, 21495.	3.3	31
16	Laser-Produced Magnetic-Rayleigh-Taylor Unstable Plasma Slabs in a 20 \AA Magnetic Field. <i>Physical Review Letters</i> , 2019, 123, 205001.	7.8	31
17	Focusing Dynamics of High-Energy Density, Laser-Driven Ion Beams. <i>Physical Review Letters</i> , 2012, 108, 055001.	7.8	24
18	Acceleration of collimated 45 MeV protons by collisionless shocks driven in low-density, large-scale gradient plasmas by a 1020 W/cm^2 , 1 μm laser. <i>Scientific Reports</i> , 2017, 7, 16463.	3.3	23

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19	Extreme brightness laser-based neutron pulses as a pathway for investigating nucleosynthesis in the laboratory. <i>Matter and Radiation at Extremes</i> , 2019, 4, .	3.9	23
20	Investigation of longitudinal proton acceleration in exploded targets irradiated by intense short-pulse laser. <i>Physics of Plasmas</i> , 2014, 21, .	1.9	18
21	Enhancement of Quasistationary Shocks and Heating via Temporal Staging in a Magnetized Laser-Plasma Jet. <i>Physical Review Letters</i> , 2017, 119, 255002.	7.8	18
22	First demonstration of multi-MeV proton acceleration from a cryogenic hydrogen ribbon target. <i>Plasma Physics and Controlled Fusion</i> , 2018, 60, 044010.	2.1	18
23	Charge Equilibrium of a Laser-Generated Carbon-Ion Beam in Warm Dense Matter. <i>Physical Review Letters</i> , 2013, 110, 135003.	7.8	17
24	X-ray spectroscopy of buried layer foils irradiated at laser intensities in excess of 10^{20} W/cm ² . <i>Physics of Plasmas</i> , 2009, 16, .	1.9	15
25	Time and space resolved interferometry for laser-generated fast electron measurements. <i>Review of Scientific Instruments</i> , 2010, 81, 113302.	1.3	14
26	An imaging proton spectrometer for short-pulse laser plasma experiments. <i>Review of Scientific Instruments</i> , 2010, 81, 10D314.	1.3	14
27	Laboratory investigation of particle acceleration and magnetic field compression in collisionless colliding fast plasma flows. <i>Communications Physics</i> , 2019, 2, .	5.3	14
28	Enhanced X-ray emission arising from laser-plasma confinement by a strong transverse magnetic field. <i>Scientific Reports</i> , 2021, 11, 8180.	3.3	14
29	Laboratory disruption of scaled astrophysical outflows by a misaligned magnetic field. <i>Nature Communications</i> , 2021, 12, 762.	12.8	14
30	Experimental evidence for the enhanced and reduced stopping regimes for protons propagating through hot plasmas. <i>Scientific Reports</i> , 2018, 8, 14586.	3.3	13
31	Monochromatic short pulse laser produced ion beam using a compact passive magnetic device. <i>Review of Scientific Instruments</i> , 2014, 85, 043504.	1.3	12
32	Density measurement of shock compressed foam using two-dimensional x-ray radiography. <i>Review of Scientific Instruments</i> , 2008, 79, 106104.	1.3	11
33	Highly-collimated, high-charge and broadband MeV electron beams produced by magnetizing solids irradiated by high-intensity lasers. <i>Matter and Radiation at Extremes</i> , 2019, 4, .	3.9	11
34	Detailed characterization of a laboratory magnetized supercritical collisionless shock and of the associated proton energization. <i>Matter and Radiation at Extremes</i> , 2022, 7, .	3.9	11
35	X-ray spectroscopy evidence for plasma shell formation in experiments modeling accretion columns in young stars. <i>Matter and Radiation at Extremes</i> , 2019, 4, .	3.9	10
36	Inferring possible magnetic field strength of accreting inflows in EXor-type objects from scaled laboratory experiments. <i>Astronomy and Astrophysics</i> , 2021, 648, A81.	5.1	10

#	ARTICLE	IF	CITATIONS
37	Laboratory evidence for proton energization by collisionless shock surfing. <i>Nature Physics</i> , 2021, 17, 1177-1182.	16.7	10
38	Diagnostics of laser-produced plasmas based on the analysis of intensity ratios of He-like ions X-ray emission. <i>Physics of Plasmas</i> , 2016, 23, .	1.9	9
39	Passive tailoring of laser-accelerated ion beam cut-off energy by using double foil assembly. <i>Physics of Plasmas</i> , 2014, 21, .	1.9	8
40	Observation of extremely strong shock waves in solids launched by petawatt laser heating. <i>Physics of Plasmas</i> , 2017, 24, .	1.9	8
41	Laboratory evidence for an asymmetric accretion structure upon slanted matter impact in young stars. <i>Astronomy and Astrophysics</i> , 2020, 642, A38.	5.1	7
42	Proton radiography of magnetic fields in a laser-produced plasma. <i>High Energy Density Physics</i> , 2010, 6, 365-367.	1.5	6
43	A compact broadband ion beam focusing device based on laser-driven megagauss thermoelectric magnetic fields. <i>Review of Scientific Instruments</i> , 2015, 86, 043502.	1.3	5
44	Effect of reentrant cone geometry on energy transport in intense laser-plasma interactions. <i>Physical Review E</i> , 2009, 80, 045401.	2.1	4
45	Parameters of supersonic astrophysically-relevant plasma jets collimating via poloidal magnetic field measured by x-ray spectroscopy method. <i>Journal of Physics: Conference Series</i> , 2016, 774, 012114.	0.4	4
46	Analyzing x-ray emission of target impurities to determine the parameters of recombining laser plasma. <i>Journal of Physics: Conference Series</i> , 2020, 1556, 012006.	0.4	0