Scott C Hsu

List of Publications by Year
in descending order

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104 papers	2,355 citations	236925 25 h-index	223800 46 g-index
106 all docs	106 docs citations	106 times ranked	1264 citing authors

#	Article	IF	Citations
1	Study of driven magnetic reconnection in a laboratory plasma. Physics of Plasmas, 1997, 4, 1936-1944.	1.9	248
2	Experimental Test of the Sweet-Parker Model of Magnetic Reconnection. Physical Review Letters, 1998, 80, 3256-3259.	7.8	196
3	Experimental Identification of the Kink Instability as a Poloidal Flux Amplification Mechanism for Coaxial Gun Spheromak Formation. Physical Review Letters, 2003, 90, 215002.	7.8	126
4	A laboratory plasma experiment for studying magnetic dynamics of accretion discs and jets. Monthly Notices of the Royal Astronomical Society, 2002, 334, 257-261.	4.4	90
5	Experimental investigation of the neutral sheet profile during magnetic reconnection. Physics of Plasmas, 2000, 7, 1781-1787.	1.9	83
6	Identification of Y-Shaped and O-Shaped Diffusion Regions During Magnetic Reconnection in a Laboratory Plasma. Physical Review Letters, 1997, 78, 3117-3120.	7.8	78
7	Spherically Imploding Plasma Liners as a Standoff Driver for Magnetoinertial Fusion. IEEE Transactions on Plasma Science, 2012, 40, 1287-1298.	1.3	77
8	A high density field reversed configuration (FRC) target for magnetized target fusion: First internal profile measurements of a high density FRC. Physics of Plasmas, 2004, 11, 2580-2585.	1.9	69
9	FRX-L: A field-reversed configuration plasma injector for magnetized target fusion. Review of Scientific Instruments, 2003, 74, 4314-4323.	1.3	68
10	Magnetic reconnection with Sweet-Parker characteristics in two-dimensional laboratory plasmas. Physics of Plasmas, 1999, 6, 1743-1750.	1.9	60
11	On the jets, kinks, and spheromaks formed by a planar magnetized coaxial gun. Physics of Plasmas, 2005, 12, 032103.	1.9	59
12	Magneto-Inertial Fusion. Journal of Fusion Energy, 2016, 35, 69-77.	1.2	51
13	Experimental study of ion heating and acceleration during magnetic reconnection. Physics of Plasmas, 2001, 8, 1916-1928.	1.9	49
14	Local Measurement of Nonclassical Ion Heating during Magnetic Reconnection. Physical Review Letters, 2000, 84, 3859-3862.	7.8	48
15	Experimental characterization of railgun-driven supersonic plasma jets motivated by high energy density physics applications. Physics of Plasmas, 2012, 19, 123514.	1.9	48
16	Experimental Characterization of the Stagnation Layer between Two Obliquely Merging Supersonic Plasma Jets. Physical Review Letters, 2013, 111, 085003.	7.8	43
17	Multielement magnetic probe using commercial chip inductors. Review of Scientific Instruments, 2004, 75, 2664-2667.	1.3	39
18	Experimental evidence for collisional shock formation via two obliquely merging supersonic plasma jets. Physics of Plasmas, 2014, 21, 055703.	1.9	39

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19	Progress toward fusion energy breakeven and gain as measured against the Lawson criterion. Physics of Plasmas, 2022, 29, .	1.9	39
20	Coalescence of two magnetic flux ropes via collisional magnetic reconnection. Physics of Plasmas, 2005, 12, 055702.	1.9	37
21	A High-Density Field Reversed Configuration Plasma for Magnetized Target Fusion. IEEE Transactions on Plasma Science, 2004, 32, 152-160.	1.3	32
22	Simulating Astrophysical Jets in Laboratory Experiments. Astrophysics and Space Science, 2005, 298, 203-209.	1.4	32
23	Estimates of confinement time and energy gain for plasma liner driven magnetoinertial fusion using an analytic self-similar converging shock model. Physics of Plasmas, 2009, 16, 112707.	1.9	31
24	One-dimensional radiation-hydrodynamic scaling studies of imploding spherical plasma liners. Physics of Plasmas, 2011, 18, .	1.9	28
25	Role of shocks and mix caused by capsule defects. Physics of Plasmas, 2012, 19, .	1.9	25
26	Observation of early shell-dopant mix in OMEGA direct-drive implosions and comparisons with radiation-hydrodynamic simulations. Physics of Plasmas, 2014, 21, .	1.9	25
27	Tendency of spherically imploding plasma liners formed by merging plasma jets to evolve toward spherical symmetry. Physics of Plasmas, 2012, 19, 052702.	1.9	24
28	Experimental characterization of a transition from collisionless to collisional interaction between	1.9	24
29	Experiment to Form and Characterize a Section of a Spherically Imploding Plasma Liner. IEEE Transactions on Plasma Science, 2018, 46, 1951-1961.	1.3	24
30	Ideal hydrodynamic scaling relations for a stagnated imploding spherical plasma liner formed by an array of merging plasma jets. Physics of Plasmas, 2013, 20, 032706.	1.9	22
31	Development of a polar direct-drive platform for studying inertial confinement fusion implosion mix on the National Ignition Facility. Physics of Plasmas, 2013, 20, .	1.9	21
32	Particle-in-cell simulations of collisionless shock formation via head-on merging of two laboratory supersonic plasma jets. Physics of Plasmas, 2013, 20, 082128.	1.9	21
33	Observation of interspecies ion separation in inertial-confinement-fusion implosions. Europhysics Letters, 2016, 115, 65001.	2.0	21
34	Plasma-Jet-Driven Magneto-Inertial Fusion. Fusion Science and Technology, 2019, 75, 581-598.	1.1	21
35	Laboratory plasma physics experiments using merging supersonic plasma jets. Journal of Plasma Physics, 2015, 81, .	2.1	20
36	Calculation and interpretation of analytic highâ€beta poloidal equilibria in finite aspect ratio tokamaks. Physics of Plasmas, 1996, 3, 266-274.	1.9	19

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37	One-dimensional radiation-hydrodynamic simulations of imploding spherical plasma liners with detailed equation-of-state modeling. Physics of Plasmas, 2012, 19, .	1.9	17
38	Multi-chord fiber-coupled interferometer with a long coherence length laser. Review of Scientific Instruments, 2012, 83, 033506.	1.3	16
39	The HelCat basic plasma science device. Journal of Plasma Physics, 2015, 81, .	2.1	16
40	Semi-analytic model of plasma-jet-driven magneto-inertial fusion. Physics of Plasmas, 2017, 24, 032704.	1.9	16
41	Technical Summary of the First U.S. Plasma Jet Workshop. Journal of Fusion Energy, 2009, 28, 246-257.	1.2	15
42	Observation and modeling of interspecies ion separation in inertial confinement fusion implosions via imaging x-ray spectroscopy. Physics of Plasmas, 2017, 24, 056305.	1.9	15
43	Multi-chord fiber-coupled interferometry of supersonic plasma jets (invited). Review of Scientific Instruments, 2012, 83, 10D523.	1.3	14
44	Asymmetric directly driven capsule implosions: Modeling and experimentsâ€"A requirement for the National Ignition Facility. Physics of Plasmas, 2012, 19, 122713.	1.9	14
45	Experimental Measurements of Ion Heating in Collisional Plasma Shocks and Interpenetrating Supersonic Plasma Flows. Physical Review Letters, 2018, 121, 185001.	7.8	14
46	Retrospective of the ARPA-E ALPHA Fusion Program. Journal of Fusion Energy, 2019, 38, 506-521.	1.2	14
47	Magnetized Plasma Target for Plasma-Jet-Driven Magneto-Inertial Fusion. Journal of Fusion Energy, 2019, 38, 182-198.	1.2	13
48	A Penning-assisted subkilovolt coaxial plasma source. Review of Scientific Instruments, 2005, 76, 033501.	1.3	12
49	Designing symmetric polar direct drive implosions on the Omega laser facility. Physics of Plasmas, 2014, 21, .	1.9	12
50	First experiments on Revolver shell collisions at the OMEGA laser. Physics of Plasmas, 2019, 26, .	1.9	12
51	Laser irradiance scaling in polar direct drive implosions on the National Ignition Facility. Physics of Plasmas, 2015, 22, .	1.9	11
52	Experimental investigation of coaxial-gun-formed plasmas injected into a background transverse magnetic field or plasma. Physics of Plasmas, 2018, 25, .	1.9	11
53	Ideal magnetohydrodynamic simulations of low beta compact toroid injection into a hot strongly magnetized plasma. Nuclear Fusion, 2009, 49, 095008.	3.5	10
54	Particle-in-cell simulations of laser beat-wave magnetization of dense plasmas. Physics of Plasmas, 2014, 21, 032704.	1.9	10

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55	Observation of Rayleigh-Taylor-instability evolution in a plasma with magnetic and viscous effects. Physical Review E, 2015, 92, 051101.	2.1	10
56	Emergent kink stability of a magnetized plasma jet injected into a transverse background magnetic field. Physics of Plasmas, 2017, 24, .	1.9	10
57	Potential Early Markets for Fusion Energy. Journal of Fusion Energy, 2021, 40, 1.	1.2	9
58	Study of magnetic helicity injection via plasma imaging using a high-speed digital camera. IEEE Transactions on Plasma Science, 2002, 30, 10-11.	1.3	8
59	Diagnostics for the Plasma Liner Experiment. Review of Scientific Instruments, 2010, 81, 10E115.	1.3	8
60	Experimental characterization of a section of a spherically imploding plasma liner formed by merging hypersonic plasma jets. Physics of Plasmas, 2020, 27, .	1.9	8
61	Long-Term Evolution of Magnetized Bubbles in Galaxy Clusters. Astrophysical Journal, 2008, 684, L57-L60.	4.5	7
62	Ideal magnetohydrodynamic simulations of unmagnetized dense plasma jet injection into a hot strongly magnetized plasma. Nuclear Fusion, 2011, 51, 073026.	3.5	7
63	Simulations of Magnetic Field Generation in Unmagnetized Plasmas via Beat-Wave Current Drive. Physical Review Letters, 2012, 109, 225002.	7.8	7
64	Progress on observations of interspecies ion separation in inertial-confinement-fusion implosions via imaging x-ray spectroscopy. Physics of Plasmas, 2019, 26, 062702.	1.9	7
65	Development of a directly driven multi-shell platform: Laser drive energetics. Physics of Plasmas, 2020, 27, 022706.	1.9	7
66	Study of local reconnection physics in a laboratory plasma. Earth, Planets and Space, 2001, 53, 539-545.	2.5	6
67	Physics Basis and Progress for a Translating FRC for MTF. Journal of Fusion Energy, 2008, 27, 57-60.	1.2	6
68	Ideal magnetohydrodynamic simulation of magnetic bubble expansion as a model for extragalactic radio lobes. Physics of Plasmas, 2008, 15, .	1.9	6
69	Simulation study of the influence of experimental variations on the structure and quality of plasma liners. Physics of Plasmas, 2019, 26, 032704.	1.9	6
70	Proposed Experiment to Study Relaxation Formation of a Spherical Tokamak with a Plasma Center Column. Journal of Fusion Energy, 2007, 26, 85-90.	1.2	5
71	Bounce-free spherical hydrodynamic implosion. Physics of Plasmas, 2011, 18, 120702.	1.9	5
72	Multiple-view spectrally resolved x-ray imaging observations of polar-direct-drive implosions on OMEGA. Physics of Plasmas, 2014, 21, 122704.	1.9	5

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73	Physics Criteria for a Subscale Plasma Liner Experiment. Journal of Fusion Energy, 2018, 37, 103-110.	1.2	5
74	Observation of shock-front separation in multi-ion-species collisional plasma shocks. Physics of Plasmas, 2020, 27, 042302.	1.9	5
75	Experimental study of ion heating in obliquely merging hypersonic plasma jets. Physics of Plasmas, 2019, 26, 082110.	1.9	4
76	Simulating Astrophysical Jets in Laboratory Experiments. , 2005, , 203-209.		4
77	Mini-conference and related sessions on laboratory plasma astrophysics. Physics of Plasmas, 2004, 11, 2976-2983.	1.9	3
78	FRC compression heating experiment (FRCHX) at AFRL. , 2007, , .		3
79	Magnetic design calculation and FRC formation modeling for the field reversed experiment liner. Journal of Applied Physics, 2008, 104, .	2.5	3
80	Power balance in a high-density field reversed configuration plasma. Physics of Plasmas, 2008, 15, 062502.	1.9	3
81	Analysis of mix experiments on Omega. EPJ Web of Conferences, 2013, 59, 04004.	0.3	3
82	Development of a polar direct drive platform for mix and burn experiments on the National Ignition Facility. Journal of Physics: Conference Series, 2016, 688, 012075.	0.4	3
83	Neutronics Calculations for a Hypothetical Plasma-Jet-Driven Magneto-Inertial-Fusion Reactor. Fusion Science and Technology, 2019, 75, 438-451.	1.1	3
84	Estimates of dwell time for plasma liner driven magneto-inertial fusion using an analytic self-similar converging shock model. , 2009, , .		2
85	Defect-induced mix experiment for NIF. EPJ Web of Conferences, 2013, 59, 04005.	0.3	2
86	Twenty-channel bolometer array for studying impurity radiation and transport in the TCS field-reversed configuration. Review of Scientific Instruments, 2006, 77, 10E511.	1.3	1
87	Magnetic Field and Inductance Calculations in Theta-Pinch and Z-Pinch Geometries. Journal of Fusion Energy, 2007, 26, 17-20.	1.2	1
88	Design of a compact coaxial magnetized plasma gun for magnetic bubble expansion experiments. , 2009, , .		1
89	Imploding plasma liners as a standoff driver for magneto-inertial fusion. , 2011, , .		1
90	Kinetic studies of ICF implosions. Journal of Physics: Conference Series, 2016, 717, 012027.	0.4	1

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91	Formation of transient high-Î² plasmas in a magnetized, weakly collisional regime. Journal of Plasma Physics, 2021, 87, .	2.1	1
92	Response to â€œThe invalidity of a Mach probe modelâ€•[Phys. Plasmas 9, 1832 (2002)]. Physics of Plasmas, 2002, 9, 1837-1837.	1.9	0
93	Simulating Solar and Astrophysical Plasmas in Laboratory Experiments and New Models Motivated by these Experiments. AIP Conference Proceedings, 2004, , .	0.4	0
94	Design of a compact coaxial magnetized plasma gun for magnetic bubble expansion experiments. , 2009, , .		0
95	DESIGN AND FEATURES OF A MAGNETIZED TARGET FUSION EXPERIMENT. , 2009, , .		0
96	FRC COMPRESSION HEATING EXPERIMENT (CHX) AT AFRL. , 2009, , .		0
97	Experiments on field reversed configuration (FRC) formation and their compression using liners. , 2009, , .		0
98	Scaling Laws for Merging and Implosion of Discrete Plasma Jets. , 2011, , .		0
99	Toward imploding spherical plasma liner formation via an array of merging supersonic plasma jets. , 2013, , .		0
100	Numerical simulations of collisionless shock formation in merging plasma jet experiments. , 2013, , .		0
101	Numerical simulations of collisionless shock formation in merging plasma jet experiments. , 2013, , .		0
102	Coaxial guns for the ARPA-E PLX-Î± project â€” Design and initial experimental results. , 2016, , .		0
103	Benchmarking simulations of plasma-liner-driven magneto-inertial fusion with advanced equation of state. , 2016, , .		0
104	Measurement of Ion Heating in Collisional and Semi-Collisional Plasma Shocks. , 2018, , .		0