

Thomas J Murphy

List of Publications by Year in descending order

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93
papers

2,851
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218677

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52
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95
all docs

95
docs citations

95
times ranked

1412
citing authors

#	ARTICLE	IF	CITATIONS
1	Design of inertial fusion implosions reaching the burning plasma regime. <i>Nature Physics</i> , 2022, 18, 251-258.	16.7	87
2	Burning plasma achieved in inertial fusion. <i>Nature</i> , 2022, 601, 542-548.	27.8	233
3	Experimental quantification of the impact of heterogeneous mix on thermonuclear burn. <i>Physics of Plasmas</i> , 2022, 29, .	1.9	7
4	First measurement of the $^{10}\text{B}(^1\text{n},\alpha)^{13}\text{C}$ reaction in an inertial confinement fusion implosion at the National Ignition Facility: Initial steps toward the development of a radiochemistry mix diagnostic. <i>Physics of Plasmas</i> , 2022, 29, .	1.9	6
5	Use of computer vision for analysis of image datasets from high temperature plasma experiments. <i>Review of Scientific Instruments</i> , 2021, 92, 033532.	1.3	8
6	Results from single-shock Marble experiments studying thermonuclear burn in the presence of heterogeneous mix on the National Ignition Facility. <i>High Energy Density Physics</i> , 2021, 38, 100929.	1.5	10
7	Experimental validation of shock propagation through a foam with engineered macro-pores. <i>Physics of Plasmas</i> , 2021, 28, 012702.	1.9	5
8	The rate of development of atomic mixing and temperature equilibration in inertial confinement fusion implosions. <i>Physics of Plasmas</i> , 2020, 27, .	1.9	17
9	Development of the Marble experimental platform at the National Ignition Facility. <i>Physics of Plasmas</i> , 2020, 27, .	1.9	11
10	Material Characterization of Hierarchical Tunable Pore Size Polymer Foams Used in the MARBLE Mix Morphology Experiment. <i>Fusion Science and Technology</i> , 2020, 76, 795-806.	1.1	7
11	Observation of persistent species temperature separation in inertial confinement fusion mixtures. <i>Nature Communications</i> , 2020, 11, 544.	12.8	41
12	Three-dimensional characterization of the third line-of-sight neutron imaging pinhole at NIF. , 2019, , .		3
13	Late-time mixing and turbulent behavior in high-energy-density shear experiments at high Atwood numbers. <i>Physics of Plasmas</i> , 2018, 25, .	1.9	22
14	Systematic Fuel Cavity Asymmetries in Directly Driven Inertial Confinement Fusion Implosions. <i>Physical Review Letters</i> , 2017, 118, 135001.	7.8	22
15	Progress in the development of the MARBLE platform for studying thermonuclear burn in the presence of heterogeneous mix on OMEGA and the National Ignition Facility. <i>Journal of Physics: Conference Series</i> , 2016, 717, 012072.	0.4	24
16	Late-Time Mixing Sensitivity to Initial Broadband Surface Roughness in High-Energy-Density Shear Layers. <i>Physical Review Letters</i> , 2016, 117, 225001.	7.8	25
17	Development of a polar direct drive platform for mix and burn experiments on the National Ignition Facility. <i>Journal of Physics: Conference Series</i> , 2016, 688, 012075.	0.4	3
18	Using multiple secondary fusion products to evaluate fuel $\langle i \rangle$, electron temperature, and mix in deuterium-filled implosions at the NIF. <i>Physics of Plasmas</i> , 2015, 22, .	1.9	23

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19	Laser irradiance scaling in polar direct drive implosions on the National Ignition Facility. Physics of Plasmas, 2015, 22, .	1.9	11
20	The Shock/Shear platform for planar radiation-hydrodynamics experiments on the National Ignition Facility. Physics of Plasmas, 2015, 22, .	1.9	45
21	Multiple-view spectrally resolved x-ray imaging observations of polar-direct-drive implosions on OMEGA. Physics of Plasmas, 2014, 21, 122704.	1.9	5
22	Designing symmetric polar direct drive implosions on the Omega laser facility. Physics of Plasmas, 2014, 21, .	1.9	12
23	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
24	X-ray spectroscopic diagnostics and modeling of polar-drive implosion experiments on the National Ignition Facility. Physics of Plasmas, 2014, 21, .	1.9	13
25	The effect of turbulent kinetic energy on inferred ion temperature from neutron spectra. Physics of Plasmas, 2014, 21, .	1.9	104
26	Development of a Big Area BackLighter for high energy density experiments. Review of Scientific Instruments, 2014, 85, 093501.	1.3	33
27	Diagnosing implosion performance at the National Ignition Facility (NIF) by means of neutron spectrometry. Nuclear Fusion, 2013, 53, 043014.	3.5	84
28	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
29	Preparing for polar-drive ignition on the National Ignition Facility. EPJ Web of Conferences, 2013, 59, 02014.	0.3	1
30	Implementation of a new multiple monochromatic x-ray 2D imager at NIF. Proceedings of SPIE, 2013, , .	0.8	5
31	Summary of the first neutron image data collected at the National Ignition Facility. EPJ Web of Conferences, 2013, 59, 13017.	0.3	6
32	Defect-induced mix experiment for NIF. EPJ Web of Conferences, 2013, 59, 04005.	0.3	2
33	Comparing neutron and X-ray images from NIF implosions. EPJ Web of Conferences, 2013, 59, 04002.	0.3	2
34	Analysis of mix experiments on Omega. EPJ Web of Conferences, 2013, 59, 04004.	0.3	3
35	The neutron imaging system fielded at the National Ignition Facility. EPJ Web of Conferences, 2013, 59, 13016.	0.3	1
36	First downscattered neutron images from Inertial Confinement Fusion experiments at the National Ignition Facility. EPJ Web of Conferences, 2013, 59, 13018.	0.3	7

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37	Asymmetric directly driven capsule implosions: Modeling and experimentsâ€”A requirement for the National Ignition Facility. <i>Physics of Plasmas</i> , 2012, 19, 122713.	1.9	14
38	Neutron spectrometryâ€”An essential tool for diagnosing implosions at the National Ignition Facility (invited). <i>Review of Scientific Instruments</i> , 2012, 83, 10D308.	1.3	117
39	Role of shocks and mix caused by capsule defects. <i>Physics of Plasmas</i> , 2012, 19, .	1.9	25
40	Performance characteristics of the neutron imaging diagnostic at NIF. , 2011, , .		0
41	A validation payload for space and atmospheric nuclear event detection. <i>IEEE Transactions on Nuclear Science</i> , 2003, 50, 1175-1181.	2.0	9
42	Scattered and (n,2n) neutrons as a measure of areal density in ICF capsules. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 2002, 488, 400-409.	1.6	36
43	High-yield neutron activation system for the National Ignition Facility. <i>Review of Scientific Instruments</i> , 2001, 72, 818-821.	1.3	9
44	A sensitive neutron spectrometer for the National Ignition Facility. <i>Review of Scientific Instruments</i> , 2001, 72, 846-849.	1.3	4
45	Nuclear diagnostics for the National Ignition Facility (invited). <i>Review of Scientific Instruments</i> , 2001, 72, 773-779.	1.3	39
46	Neutron time-of-flight and emission time diagnostics for the National Ignition Facility. <i>Review of Scientific Instruments</i> , 2001, 72, 850-853.	1.3	20
47	Demonstration of time-dependent symmetry control in hohlraums by drive-beam staggering. <i>Physics of Plasmas</i> , 2000, 7, 333-337.	1.9	31
48	Observation of reduced beam deflection using smoothed beams in gas-filled hohlraum symmetry experiments at Nova. <i>Physics of Plasmas</i> , 2000, 7, 1609-1613.	1.9	19
49	Moderate-convergence inertial confinement fusion implosions in tetrahedral hohlraums at Omega. <i>Physics of Plasmas</i> , 2000, 7, 2594-2603.	1.9	20
50	Multipurpose 10 in. manipulator-based optical telescope for Omega and the Trident laser facilities. <i>Review of Scientific Instruments</i> , 1999, 70, 803-805.	1.3	21
51	Inertial Confinement Fusion with Tetrahedral Hohlraums at OMEGA. <i>Physical Review Letters</i> , 1999, 82, 3807-3810.	7.8	39
52	Indirect drive experiments utilizing multiple beam cones in cylindrical hohlraums on OMEGA. <i>Physics of Plasmas</i> , 1998, 5, 1960-1965.	1.9	14
53	Hohlraum Symmetry Experiments with Multiple Beam Cones on the Omega Laser Facility. <i>Physical Review Letters</i> , 1998, 81, 108-111.	7.8	28
54	Los Alamos Progress toward Achieving DT Burn on the National Ignition Facility. <i>Fusion Science and Technology</i> , 1998, 34, 753-759.	0.6	1

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55	New methods for diagnosing and controlling hohlraum drive asymmetry on Nova. Physics of Plasmas, 1997, 4, 1862-1871.	1.9	25
56	Target diagnostic system for the national ignition facility (invited). Review of Scientific Instruments, 1997, 68, 868-879.	1.3	40
57	Neutron time-of-flight signals from expanding or contracting spherical sources. Review of Scientific Instruments, 1997, 68, 614-617.	1.3	16
58	Measurements of neutron spectra from Nova targets. Review of Scientific Instruments, 1997, 68, 607-609.	1.3	8
59	Interpretation of neutron time-of-flight signals from current-mode detectors. Review of Scientific Instruments, 1997, 68, 610-613.	1.3	43
60	Hohlraum Radiation Drive Measurements on the Omega Laser. Physical Review Letters, 1997, 79, 1491-1494.	7.8	65
61	Calibration and operation of a neutron time-of-flight scintillator array on Nova. Fusion Engineering and Design, 1997, 34-35, 577-580.	1.9	2
62	Modeling of drive-symmetry experiments in gas-filled hohlraums at Nova. AIP Conference Proceedings, 1996, , .	0.4	0
63	Symmetry experiments in gas filled Hohlraums at Nova. AIP Conference Proceedings, 1996, , .	0.4	1
64	High convergence, indirect drive inertial confinement fusion experiments at Nova. AIP Conference Proceedings, 1996, , .	0.4	0
65	Three-dimensional simulations of Nova high growth factor capsule implosion experiments. Physics of Plasmas, 1996, 3, 2070-2076.	1.9	143
66	Symmetry experiments in gas-filled hohlraums at NOVA. Physics of Plasmas, 1996, 3, 2022-2028.	1.9	54
67	Effects of variable x-ray preheat shielding in indirectly driven implosions. Physics of Plasmas, 1996, 3, 2094-2097.	1.9	20
68	Novel symmetry tuning in Nova hohlraums using axial gold disks. Physics of Plasmas, 1996, 3, 4166-4171.	1.9	12
69	Inertial Confinement Fusion at Los Alamos—"The Pursuit of Ignition and Science-Based Stockpile Stewardship. Fusion Science and Technology, 1996, 30, 497-503.	0.6	0
70	Indirectly driven, high growth Rayleigh-Taylor implosions on Nova. Journal of Quantitative Spectroscopy and Radiative Transfer, 1995, 54, 245-255.	2.3	19
71	A proton-recoil neutron spectrometer for time-dependent ion temperatures on the National Ignition Facility. , 1995, , .		0
72	Ion temperature measurement of indirectly driven implosions using a geometry-compensated neutron time-of-flight detector. Review of Scientific Instruments, 1995, 66, 930-932.	1.3	31

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73	Measurements of positron-annihilation rates on molecules. Physical Review A, 1995, 51, 473-487.	2.5	117
74	Indirectly Driven, High Convergence Inertial Confinement Fusion Implosions. Physical Review Letters, 1994, 73, 2316-2319.	7.8	76
75	Neutron detectors for fusion reaction-rate measurements. AIP Conference Proceedings, 1994, , .	0.4	0
76	Recent experimental results on Nova. , 1993, , .		0
77	Plasma temperatures from firstâ€hit neutron timeâ€ofâ€flight spectra. Review of Scientific Instruments, 1992, 63, 4877-4879.	1.3	8
78	Geometry compensation for improving speed and efficiency of scintillatorâ€based neutron timeâ€ofâ€flight detectors. Review of Scientific Instruments, 1992, 63, 4880-4882.	1.3	10
79	Development of a geometryâ€compensated neutron timeâ€ofâ€flight detector for ICF applications with approximately 200 ps time response. Review of Scientific Instruments, 1992, 63, 4883-4885.	1.3	10
80	Positron trapping in an electrostatic well by inelastic collisions with nitrogen molecules. Physical Review A, 1992, 46, 5696-5705.	2.5	187
81	Recent Nova Experimental Results. Fusion Science and Technology, 1992, 21, 1340-1343.	0.6	0
82	Annihilation of positrons on organic molecules. Physical Review Letters, 1991, 67, 2954-2957.	7.8	72
83	Annihilation of positrons in xenon gas. Journal of Physics B: Atomic, Molecular and Optical Physics, 1990, 23, L727-L732.	1.5	23
84	Modeâ€particle resonances during nearâ€tangential neutral beam injection in the Tokamak Fusion Test Reactor. Physics of Fluids B, 1990, 2, 1584-1588.	1.7	26
85	Use of the positron as a plasma particle. Physics of Fluids B, 1990, 2, 1372-1375.	1.7	209
86	Measurements of neutral beam species, impurities, spatial divergence, energy dispersion, pressure, and reionization using the TFTR U.S. Common Long Pulse Ion Source. Review of Scientific Instruments, 1989, 60, 37-52.	1.3	23
87	Calculation of fusion product angular correlation coefficients for fusion plasmas. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 1988, 267, 520-536.	1.6	1
88	Calibration of the TFTR neutron activation system. Review of Scientific Instruments, 1988, 59, 1715-1717.	1.3	15
89	TFTR epithermal neutron detector system: Recalibration and effect of nonisotropic neutron emission. Review of Scientific Instruments, 1988, 59, 1682-1684.	1.3	18
90	Positron deposition in plasmas by positronium beam ionization and transport of positrons in Tokamak plasmas. Plasma Physics and Controlled Fusion, 1987, 29, 549-563.	2.1	18

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91	Application of coincidence techniques to fusion product measurements. Review of Scientific Instruments, 1986, 57, 1766-1768.	1.3	1
92	Use of positrons to study transport in tokamak plasmas (invited). Review of Scientific Instruments, 1986, 57, 1862-1867.	1.3	148
93	Spatially resolved measurement of alpha particle emission from PLT plasmas heated by ICRH. Nuclear Fusion, 1985, 25, 383-386.	3.5	28