## Abbas Nikroo

List of Publications by Year in descending order

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38742 62596 7,455 146 50 80 citations h-index g-index papers 146 146 146 1897 docs citations times ranked citing authors all docs

#	Article	IF	CITATIONS
1	Design of inertial fusion implosions reaching the burning plasma regime. Nature Physics, 2022, 18, 251-258.	16.7	87
2	Burning plasma achieved in inertial fusion. Nature, 2022, 601, 542-548.	27.8	233
3	The Magnetized Indirect Drive Project on the National Ignition Facility. Journal of Fusion Energy, 2022, 41, 1.	1.2	14
4	Hohlraum x-ray preheat asymmetry measurement at the ICF capsule via Mo ball fluorescence imaging. Review of Scientific Instruments, 2021, 92, 023517.	1.3	1
5	Comparison of ablators for the polar direct drive exploding pusher platform. High Energy Density Physics, 2021, 38, 100928.	1.5	2
6	The effects of multispecies <i>Hohlraum</i> walls on stimulated Brillouin scattering, <i>Hohlraum</i> dynamics, and beam propagation. Physics of Plasmas, 2021, 28, .	1.9	6
7	Achieving record hot spot energies with large HDC implosions on NIF in HYBRID-E. Physics of Plasmas, 2021, 28, .	1.9	55
8	Reaching 30% energy coupling efficiency for a high-density-carbon capsule in a gold rugby hohlraum on NIF. Nuclear Fusion, 2021, 61, 086028.	3.5	4
9	Evidence of Three-Dimensional Asymmetries Seeded by High-Density Carbon-Ablator Nonuniformity in Experiments at the National Ignition Facility. Physical Review Letters, 2021, 126, 025002.	7.8	40
10	Record Energetics for an Inertial Fusion Implosion at NIF. Physical Review Letters, 2021, 126, 025001.	7.8	76
11	Review of hydrodynamic instability experiments in inertially confined fusion implosions on National Ignition Facility. Plasma Physics and Controlled Fusion, 2020, 62, 014007.	2.1	31
12	Time-Resolved Fuel Density Profiles of the Stagnation Phase of Indirect-Drive Inertial Confinement Implosions. Physical Review Letters, 2020, 125, 155003.	7.8	27
13	Symmetry tuning and high energy coupling for an Al capsule in a Au rugby hohlraum on NIF. Physics of Plasmas, 2020, 27, .	1.9	5
14	Integrated performance of large HDC-capsule implosions on the National Ignition Facility. Physics of Plasmas, 2020, 27, .	1.9	22
15	Hot-spot mix in large-scale HDC implosions at NIF. Physics of Plasmas, 2020, 27, .	1.9	46
16	Principal factors in performance of indirect-drive laser fusion experiments. Physics of Plasmas, 2020, 27, .	1.9	7
17	Deficiencies in compression and yield in x-ray-driven implosions. Physics of Plasmas, 2020, 27, .	1.9	12
18	Measurements of enhanced performance in an indirect drive inertial confinement fusion experiment when reducing the contact area of the capsule support. Physics of Plasmas, 2020, 27, .	1.9	7

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19	Experimental demonstration of the reduced expansion of a laser-heated surface using a low density foam layer, pertaining to advanced hohlraum designs with less wall-motion. Physics of Plasmas, 2020, 27, .	1.9	12
20	Foam-lined hohlraum, inertial confinement fusion experiments on the National Ignition Facility. Physical Review E, 2020, 102, 051201.	2.1	2
21	Symmetric fielding of the largest diamond capsule implosions on the NIF. Physics of Plasmas, 2020, 27, .	1.9	28
22	Direct observation of density gradients in ICF capsule implosions via streaked Refraction Enhanced Radiography (RER). High Energy Density Physics, 2020, 36, 100795.	1.5	6
23	Recent and planned hydrodynamic instability experiments on indirect-drive implosions on the National Ignition Facility. High Energy Density Physics, 2020, 36, 100820.	1.5	8
24	Mixing in ICF implosions on the National Ignition Facility caused by the fill-tube. Physics of Plasmas, 2020, 27, .	1.9	41
25	First study of Hohlraum x-ray preheat asymmetry inside an ICF capsule. Physics of Plasmas, 2020, 27, 122703.	1.9	9
26	Experiments to explore the influence of pulse shaping at the National Ignition Facility. Physics of Plasmas, 2020, 27, 112708.	1.9	11
27	Toward a burning plasma state using diamond ablator inertially confined fusion (ICF) implosions on the National Ignition Facility (NIF). Plasma Physics and Controlled Fusion, 2019, 61, 014023.	2.1	53
28	Pushered single shell implosions for mix and radiation trapping studies using high-Z layers on National Ignition Facility. Physics of Plasmas, 2019, 26, .	1.9	12
29	Progress of indirect drive inertial confinement fusion in the United States. Nuclear Fusion, 2019, 59, 112018.	3.5	38
30	The National Direct-Drive Inertial Confinement Fusion Program. Nuclear Fusion, 2019, 59, 032007.	3.5	10
31	Enhanced energy coupling for indirectly driven inertial confinement fusion. Nature Physics, 2019, 15, 138-141.	16.7	32
32	Fabrication of Low-Density Foam Liners in Hohlraums for NIF Targets. Fusion Science and Technology, 2018, 73, 194-209.	1.1	12
33	D <sub>2</sub> and D-T Liquid-Layer Target Shots at the National Ignition Facility. Fusion Science and Technology, 2018, 73, 305-314.	1.1	5
34	Visualizing deceleration-phase instabilities in inertial confinement fusion implosions using an "enhanced self-emission―technique at the National Ignition Facility. Physics of Plasmas, 2018, 25, 054502.	1.9	22
35	The high velocity, high adiabat, "Bigfoot―campaign and tests of indirect-drive implosion scaling. Physics of Plasmas, 2018, 25, .	1.9	90
36	Variable convergence liquid layer implosions on the National Ignition Facility. Physics of Plasmas, 2018, 25, .	1.9	15

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37	Optimization of a high-yield, low-areal-density fusion product source at the National Ignition Facility with applications in nucleosynthesis experiments. Physics of Plasmas, 2018, 25, .	1.9	10
38	Process Developments in the Fabrication of Depleted Uranium Hohlraums. Fusion Science and Technology, 2018, 73, 370-379.	1.1	4
39	Zinc Oxide–Coated Poly(HIPE) Annular Liners to Advance Laser Indirect Drive Inertial Confinement Fusion. Fusion Science and Technology, 2018, 73, 210-218.	1.1	6
40	X-ray streaked refraction enhanced radiography for inferring inflight density gradients in ICF capsule implosions. Review of Scientific Instruments, 2018, 89, 10G108.	1.3	23
41	First demonstration of improved capsule implosions by reducing radiation preheat in uranium vs gold hohlraums. Physics of Plasmas, 2018, 25, .	1.9	17
42	Simultaneous visualization of wall motion, beam propagation, and implosion symmetry on the National Ignition Facility (invited). Review of Scientific Instruments, 2018, 89, 10K111.	1.3	15
43	Beryllium capsule implosions at a case-to-capsule ratio of 3.7 on the National Ignition Facility. Physics of Plasmas, 2018, 25, .	1.9	20
44	Mitigating laser-imprint effects in direct-drive inertial confinement fusion implosions with an above-critical-density foam layer. Physics of Plasmas, 2018, 25, .	1.9	16
45	A "polar contact―tent for reduced perturbation and improved performance of NIF ignition capsules. Physics of Plasmas, 2018, 25, 082714.	1.9	17
46	Developing an Experimental Basis for Understanding Transport in NIF Hohlraum Plasmas. Physical Review Letters, 2018, 121, 095002.	7.8	28
47	Mitigation of X-ray shadow seeding of hydrodynamic instabilities on inertial confinement fusion capsules using a reduced diameter fuel fill-tube. Physics of Plasmas, 2018, 25, .	1.9	30
48	Implosion shape control of high-velocity, large case-to-capsule ratio beryllium ablators at the National Ignition Facility. Physics of Plasmas, 2018, 25, 072708.	1.9	16
49	Review of hydro-instability experiments with alternate capsule supports in indirect-drive implosions on the National Ignition Facility. Physics of Plasmas, 2018, 25, 072705.	1.9	20
50	Hydrodynamic instabilities seeded by the X-ray shadow of ICF capsule fill-tubes. Physics of Plasmas, 2018, 25, .	1.9	25
51	Increasing stagnation pressure and thermonuclear performance of inertial confinement fusion capsules by the introduction of a high-Z dopant. Physics of Plasmas, 2018, 25, .	1.9	42
52	Development of new platforms for hydrodynamic instability and asymmetry measurements in deceleration phase of indirectly driven implosions on NIF. Physics of Plasmas, 2018, 25, 082705.	1.9	15
53	Fusion Energy Output Greater than the Kinetic Energy of an Imploding Shell at the National Ignition Facility. Physical Review Letters, 2018, 120, 245003.	7.8	205
54	Improving ICF implosion performance with alternative capsule supports. Physics of Plasmas, 2017, 24, .	1.9	54

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55	Development of an inertial confinement fusion platform to study charged-particle-producing nuclear reactions relevant to nuclear astrophysics. Physics of Plasmas, 2017, 24, .	1.9	20
56	Hydrodynamic instability growth of three-dimensional modulations in radiation-driven implosions with "low-foot―and "high-foot―drives at the National Ignition Facility. Physics of Plasmas, 2017, 24, .	1.9	30
57	The role of hot spot mix in the low-foot and high-foot implosions on the NIF. Physics of Plasmas, 2017, 24, .	1.9	49
58	Symmetry control of an indirectly driven high-density-carbon implosion at high convergence and high velocity. Physics of Plasmas, 2017, 24, .	1.9	106
59	Mix and hydrodynamic instabilities on NIF. Journal of Instrumentation, 2017, 12, C06001-C06001.	1.2	21
60	Hydro-instability growth of perturbation seeds from alternate capsule-support strategies in indirect-drive implosions on National Ignition Facility. Physics of Plasmas, 2017, 24, 102707.	1.9	27
61	X-ray shadow imprint of hydrodynamic instabilities on the surface of inertial confinement fusion capsules by the fuel fill tube. Physical Review E, 2017, 95, 031204.	2.1	46
62	Performance of beryllium targets with full-scale capsules in low-fill 6.72-mm hohlraums on the National Ignition Facility. Physics of Plasmas, $2017$ , $24$ , .	1.9	14
63	Indirect drive ignition at the National Ignition Facility. Plasma Physics and Controlled Fusion, 2017, 59, 014021.	2.1	64
64	Wetted foam liquid fuel ICF target experiments. Journal of Physics: Conference Series, 2016, 717, 012042.	0.4	12
65	Observation of hohlraum-wall motion with spectrally selective x-ray imaging at the National Ignition Facility. Review of Scientific Instruments, 2016, 87, 11E321.	1.3	11
66	First beryllium capsule implosions on the National Ignition Facility. Physics of Plasmas, 2016, 23, 056310.	1.9	37
67	The near vacuum hohlraum campaign at the NIF: A new approach. Physics of Plasmas, 2016, 23, .	1.9	51
68	Performance of indirectly driven capsule implosions on the National Ignition Facility using adiabat-shaping. Physics of Plasmas, 2016, 23, 056303.	1.9	38
69	Experimental results of radiation-driven, layered deuterium-tritium implosions with adiabat-shaped drives at the National Ignition Facility. Physics of Plasmas, 2016, 23, .	1.9	27
70	Effects of fuel-capsule shimming and drive asymmetry on inertial-confinement-fusion symmetry and yield. Physics of Plasmas, 2016, 23, .	1.9	17
71	First Liquid Layer Inertial Confinement Fusion Implosions at the National Ignition Facility. Physical Review Letters, 2016, 117, 245001.	7.8	53
72	A direct-drive exploding-pusher implosion as the first step in development of a monoenergetic charged-particle backlighting platform at the National Ignition Facility. High Energy Density Physics, 2016, 18, 38-44.	1.5	9

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73	Inertially confined fusion plasmas dominated by alpha-particle self-heating. Nature Physics, 2016, 12, 800-806.	16.7	144
74	First Measurements of Fuel-Ablator Interface Instability Growth in Inertial Confinement Fusion Implosions on the National Ignition Facility. Physical Review Letters, 2016, 117, 075002.	7.8	33
75	Update 2015 on Target Fabrication Requirements for NIF Layered Implosions, with Emphasis on Capsule Support and Oxygen Modulations in GDP. Fusion Science and Technology, 2016, 70, 121-126.	1.1	16
76	Experimental evidence of a bubble-merger regime for the Rayleigh-Taylor Instability at the ablation front. Journal of Physics: Conference Series, 2016, 717, 012010.	0.4	5
77	Hydrodynamic instability experiments with three-dimensional modulations at the National Ignition Facility. High Power Laser Science and Engineering, 2015, 3, .	4.6	17
78	Improved Performance of High Areal Density Indirect Drive Implosions at the National Ignition Facility using a Four-Shock Adiabat Shaped Drive. Physical Review Letters, 2015, 115, 105001.	7.8	58
79	Laser irradiance scaling in polar direct drive implosions on the National Ignition Facility. Physics of Plasmas, 2015, 22, .	1.9	11
80	Probing the deep nonlinear stage of the ablative Rayleigh-Taylor instability in indirect drive experiments on the National Ignition Facility. Physics of Plasmas, 2015, 22, .	1.9	30
81	2015, 22, 056314.	1.9	49
82	First High-Convergence Cryogenic Implosion in a Near-Vacuum Hohlraum. Physical Review Letters, 2015, 114, 175001.	7.8	117
83	Performance and Mix Measurements of Indirect Drive Cu-Doped Be Implosions. Physical Review Letters, 2015, 114, 205002.	7.8	18
84	Assessment of ion kinetic effects in shock-driven inertial confinement fusion implosions using fusion burn imaging. Physics of Plasmas, 2015, 22, .	1.9	27
85	Cryogenic tritium-hydrogen-deuterium and deuterium-tritium layer implosions with high density carbon ablators in near-vacuum hohlraums. Physics of Plasmas, 2015, 22, 062703.	1.9	62
86	Ion Thermal Decoupling and Species Separation in Shock-Driven Implosions. Physical Review Letters, 2015, 114, 025001.	7.8	67
87	Thin Shell, High Velocity Inertial Confinement Fusion Implosions on the National Ignition Facility. Physical Review Letters, 2015, 114, 145004.	7.8	56
88		1.9	52
89	Adiabat-shaping in indirect drive inertial confinement fusion. Physics of Plasmas, 2015, 22, 052702.	1.9	31
90	In-flight observations of low-mode <i>i× i&gt;R asymmetries in NIF implosions. Physics of Plasmas, 2015, 22,</i>	1.9	24

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91	Demonstration of High Performance in Layered Deuterium-Tritium Capsule Implosions in Uranium Hohlraums at the National Ignition Facility. Physical Review Letters, 2015, 115, 055001.	7.8	101
92	First results of radiation-driven, layered deuterium-tritium implosions with a 3-shock adiabat-shaped drive at the National Ignition Facility. Physics of Plasmas, 2015, 22, .	1.9	29
93	Hydrodynamic instability growth of three-dimensional, "native-roughness―modulations in x-ray driven, spherical implosions at the National Ignition Facility. Physics of Plasmas, 2015, 22, .	1.9	46
94	Investigation of ion kinetic effects in direct-drive exploding-pusher implosions at the NIF. Physics of Plasmas, 2014, 21, 122712.	1.9	33
95	The effect of shock dynamics on compressibility of ignition-scale National Ignition Facility implosions. Physics of Plasmas, 2014, 21, .	1.9	20
96	A compact proton spectrometer for measurement of the absolute DD proton spectrum from which yield and $\langle i \rangle \ddot{R} \langle i \rangle$ are determined in thin-shell inertial-confinement-fusion implosions. Review of Scientific Instruments, 2014, 85, 103504.	1.3	15
97	The NIF x-ray spectrometer calibration campaign at Omega. Review of Scientific Instruments, 2014, 85, 11D613.	1.3	30
98	Progress in hohlraum physics for the National Ignition Facility. Physics of Plasmas, 2014, 21, .	1.9	62
99	Exploration of the Transition from the Hydrodynamiclike to the Strongly Kinetic Regime in Shock-Driven Implosions. Physical Review Letters, 2014, 112, 185001.	7.8	77
100	Development of the CD Symcap platform to study gas-shell mix in implosions at the National Ignition Facility. Physics of Plasmas, 2014, 21, .	1.9	42
101	First Observations of Nonhydrodynamic Mix at the Fuel-Shell Interface in Shock-Driven Inertial Confinement Implosions. Physical Review Letters, 2014, 112, 135001.	7.8	58
102	Shock timing measurements and analysis in deuterium-tritium-ice layered capsule implosions on NIF. Physics of Plasmas, 2014, 21, 022703.	1.9	27
103	Hydrodynamic instability growth and mix experiments at the National Ignition Facility. Physics of Plasmas, 2014, 21, .	1.9	60
104	First Measurements of Hydrodynamic Instability Growth in Indirectly Driven Implosions at Ignition-Relevant Conditions on the National Ignition Facility. Physical Review Letters, 2014, 112, 185003.	7.8	90
105	High-density carbon ablator experiments on the National Ignition Facility. Physics of Plasmas, 2014, 21, .	1.9	116
106	An in-flight radiography platform to measure hydrodynamic instability growth in inertial confinement fusion capsules at the National Ignition Facility. Physics of Plasmas, 2014, 21, .	1.9	98
107	Reduced instability growth with high-adiabat high-foot implosions at the National Ignition Facility. Physical Review E, 2014, 90, 011102.	2.1	77
108	Early time implosion symmetry from two-axis shock-timing measurements on indirect drive NIF experiments. Physics of Plasmas, 2014, 21, .	1.9	24

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109	Progress towards ignition on the National Ignition Facility. Physics of Plasmas, 2013, 20, .	1.9	259
110	Hot-Spot Mix in Ignition-Scale Inertial Confinement Fusion Targets. Physical Review Letters, 2013, 111, 045001.	7.8	135
111	Hohlraum energetics scaling to 520 TW on the National Ignition Facility. Physics of Plasmas, 2013, 20, .	1.9	59
112	Early-Time Symmetry Tuning in the Presence of Cross-Beam Energy Transfer in ICF Experiments on the National Ignition Facility. Physical Review Letters, 2013, 111, 235001.	7.8	44
113	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
114	X-ray driven implosions at ignition relevant velocities on the National Ignition Facility. Physics of Plasmas, 2013, 20, .	1.9	54
115	Nuclear imaging of the fuel assembly in ignition experiments. Physics of Plasmas, 2013, 20, 056320.	1.9	65
116	Cryogenic thermonuclear fuel implosions on the National Ignition Facility. Physics of Plasmas, 2012, $19$ , .	1.9	95
117	Diagnosing implosions at the national ignition facility with X-ray spectroscopy. AIP Conference Proceedings, 2012, , .	0.4	3
118	Charged-particle spectroscopy for diagnosing shock $\bar{l}R$ and strength in NIF implosions. Review of Scientific Instruments, 2012, 83, 10D901.	1.3	38
119	Assembly of High-Areal-Density Deuterium-Tritium Fuel from Indirectly Driven Cryogenic Implosions. Physical Review Letters, 2012, 108, 215005.	7.8	57
120	Implosion dynamics measurements at the National Ignition Facility. Physics of Plasmas, 2012, 19, .	1.9	125
121	Neutron spectrometry—An essential tool for diagnosing implosions at the National Ignition Facility (invited). Review of Scientific Instruments, 2012, 83, 10D308.	1.3	117
122	Shock timing experiments on the National Ignition Facility: Initial results and comparison with simulation. Physics of Plasmas, 2012, $19$ , .	1.9	115
123	A high-resolution integrated model of the National Ignition Campaign cryogenic layered experiments. Physics of Plasmas, 2012, 19, .	1.9	108
124	Progress in the indirect-drive National Ignition Campaign. Plasma Physics and Controlled Fusion, 2012, 54, 124026.	2.1	38
125	Precision Shock Tuning on the National Ignition Facility. Physical Review Letters, 2012, 108, 215004.	7.8	83
126	Hot-spot mix in ignition-scale implosions on the NIF. Physics of Plasmas, 2012, 19, .	1.9	107

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127	The velocity campaign for ignition on NIF. Physics of Plasmas, 2012, 19, .	1.9	76
128	Multistep redirection by cross-beam power transfer of ultrahigh-power lasers in a plasma. Nature Physics, 2012, 8, 344-349.	16.7	104
129	First implosion experiments with cryogenic thermonuclear fuel on the National Ignition Facility. Plasma Physics and Controlled Fusion, 2012, 54, 045013.	2.1	41
130	Capsule implosion optimization during the indirect-drive National Ignition Campaign. Physics of Plasmas, $2011,18,.$	1.9	131
131	Point design targets, specifications, and requirements for the 2010 ignition campaign on the National Ignition Facility. Physics of Plasmas, $2011, 18, .$	1.9	534
132	The experimental plan for cryogenic layered target implosions on the National Ignition Facilityâ€"The inertial confinement approach to fusion. Physics of Plasmas, 2011, 18, .	1.9	148
133	Charged-Particle Probing of X-ray–Driven Inertial-Fusion Implosions. Science, 2010, 327, 1231-1235.	12.6	86
134	Symmetric Inertial Confinement Fusion Implosions at Ultra-High Laser Energies. Science, 2010, 327, 1228-1231.	12.6	321
135	Capsule performance optimization in the National Ignition Campaign. Physics of Plasmas, 2010, 17, .	1.9	51
136	Observations of Electromagnetic Fields and Plasma Flow in Hohlraums with Proton Radiography. Physical Review Letters, 2009, 102, 205001.	7.8	69
137	Robust Capsule and Fill Tube Assemblies for the National Ignition Campaign. Fusion Science and Technology, 2009, 55, 331-336.	1.1	23
138	Fill-Tube-Induced Mass Perturbations on X-Ray-Driven, Ignition-Scale, Inertial-Confinement-Fusion Capsule Shells and the Implications for Ignition Experiments. Physical Review Letters, 2007, 99, 205003.	7.8	25
139	Beryllium Capsule Coating Development for NIF Targets. Fusion Science and Technology, 2007, 51, 547-552.	1.1	37
140	Fabrication and Attachment of Polyimide Fill Tubes to Plastic NIF Capsules. Fusion Science and Technology, 2007, 51, 638-642.	1.1	19
141	Developing depleted uranium and gold cocktail hohlraums for the National Ignition Facility. Physics of Plasmas, 2007, 14, 056310.	1.9	36
142	Proof of principle experiments that demonstrate utility of cocktail hohlraums for indirect drive ignition. Physics of Plasmas, 2007, 14, 056311.	1.9	50
143	Fabrication of Pressurized 2 mm Beryllium Targets for ICF Experiments. Fusion Science and Technology, 2007, 51, 576-580.	1.1	11
144	Progress toward fabrication of graded doped beryllium and CH capsules for the National Ignition Facility. Physics of Plasmas, 2006, 13, 056302.	1.9	33

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145	Status of the development of ignition capsules in the U.S. effort to achieve thermonuclear ignition on the national ignition facility. Laser and Particle Beams, 2006, 24, 567-578.	1.0	27
146	Mechanical Properties of Thin GDP Shells Used as Cryogenic Direct Drive Targets at OMEGA. Fusion Science and Technology, 2004, 45, 229-232.	1.1	12