

# S R Nagel

## List of Publications by Year in descending order

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102  
papers

4,049  
citations

126907

33  
h-index

118850

62  
g-index

105  
all docs

105  
docs citations

105  
times ranked

2414  
citing authors

#	ARTICLE	IF	CITATIONS
1	Bright spatially coherent synchrotron X-rays from a table-top source. <i>Nature Physics</i> , 2010, 6, 980-983.	16.7	392
2	Near-GeV Acceleration of Electrons by a Nonlinear Plasma Wave Driven by a Self-Guided Laser Pulse. <i>Physical Review Letters</i> , 2009, 103, 035002.	7.8	239
3	Fusion Energy Output Greater than the Kinetic Energy of an Imploding Shell at the National Ignition Facility. <i>Physical Review Letters</i> , 2018, 120, 245003.	7.8	205
4	Bright Multi-keV Harmonic Generation from Relativistically Oscillating Plasma Surfaces. <i>Physical Review Letters</i> , 2007, 99, 085001.	7.8	201
5	Observation of Synchrotron Radiation from Electrons Accelerated in a Petawatt-Laser-Generated Plasma Cavity. <i>Physical Review Letters</i> , 2008, 100, 105006.	7.8	179
6	Inertially confined fusion plasmas dominated by alpha-particle self-heating. <i>Nature Physics</i> , 2016, 12, 800-806.	16.7	144
7	Rayleigh-Taylor Instability of an Ultrathin Foil Accelerated by the Radiation Pressure of an Intense Laser. <i>Physical Review Letters</i> , 2012, 108, 225002.	7.8	128
8	Symmetry control of an indirectly driven high-density-carbon implosion at high convergence and high velocity. <i>Physics of Plasmas</i> , 2017, 24, .	1.9	106
9	Characterization of High-Intensity Laser Propagation in the Relativistic Transparent Regime through Measurements of Energetic Proton Beams. <i>Physical Review Letters</i> , 2009, 102, 125002.	7.8	97
10	The high velocity, high adiabat, "Bigfoot" campaign and tests of indirect-drive implosion scaling. <i>Physics of Plasmas</i> , 2018, 25, .	1.9	90
11	Dilation x-ray imager a new/faster gated x-ray imager for the NIF. <i>Review of Scientific Instruments</i> , 2012, 83, 10E116.	1.3	86
12	High-Performance Indirect-Drive Cryogenic Implosions at High Adiabatic on the National Ignition Facility. <i>Physical Review Letters</i> , 2018, 121, 135001.	7.8	86
13	Effect of the mounting membrane on shape in inertial confinement fusion implosions. <i>Physics of Plasmas</i> , 2015, 22, .	1.9	85
14	of Plasmas, 2015, 22, 056315.	1.9	82
15	Dynamic symmetry of indirectly driven inertial confinement fusion capsules on the National Ignition Facility. <i>Physics of Plasmas</i> , 2014, 21, .	1.9	81
16	Dynamic Control of Laser-Produced Proton Beams. <i>Physical Review Letters</i> , 2008, 100, 105004.	7.8	80
17	Exploring the limits of case-to-capsule ratio, pulse length, and picket energy for symmetric hohlraum drive on the National Ignition Facility Laser. <i>Physics of Plasmas</i> , 2018, 25, .	1.9	79
18	Investigating high speed phenomena in laser plasma interactions using dilation x-ray imager (invited). <i>Review of Scientific Instruments</i> , 2014, 85, 11E504.	1.3	62

#	ARTICLE	IF	CITATIONS
19	Development of Improved Radiation Drive Environment for High Foot Implosions at the National Ignition Facility. <i>Physical Review Letters</i> , 2016, 117, 225002.	7.8	61
20	Improved Performance of High Areal Density Indirect Drive Implosions at the National Ignition Facility using a Four-Shock Adiabatic Shaped Drive. <i>Physical Review Letters</i> , 2015, 115, 105001.	7.8	58
21	Thin Shell, High Velocity Inertial Confinement Fusion Implosions on the National Ignition Facility. <i>Physical Review Letters</i> , 2015, 114, 145004.	7.8	56
22	A platform for studying the Rayleigh-Taylor and Richtmyer-Meshkov instabilities in a planar geometry at high energy density at the National Ignition Facility. <i>Physics of Plasmas</i> , 2017, 24, .	1.9	54
23	Toward a burning plasma state using diamond ablator inertially confined fusion (ICF) implosions on the National Ignition Facility (NIF). <i>Plasma Physics and Controlled Fusion</i> , 2019, 61, 014023.	2.1	53
24		1.9	52
25	Complete Temporal Characterization of Asymmetric Pulse Compression in a Laser Wakefield. <i>Physical Review Letters</i> , 2010, 105, 235003.	7.8	51
26	The near vacuum hohlraum campaign at the NIF: A new approach. <i>Physics of Plasmas</i> , 2016, 23, .	1.9	51
27	2015, 22, 056314.	1.9	49
28	The role of hot spot mix in the low-foot and high-foot implosions on the NIF. <i>Physics of Plasmas</i> , 2017, 24, .	1.9	49
29	High-energy (>70 keV) x-ray conversion efficiency measurement on the ARC laser at the National Ignition Facility. <i>Physics of Plasmas</i> , 2017, 24, .	1.9	45
30	Short pulse, high resolution, backlighters for point projection high-energy radiography at the National Ignition Facility. <i>Physics of Plasmas</i> , 2017, 24, .	1.9	42
31	Laser-wakefield acceleration of electron beams in a low density plasma channel. <i>Physical Review Special Topics: Accelerators and Beams</i> , 2010, 13, .	1.8	38
32	Resolving hot spot microstructure using x-ray penumbral imaging (invited). <i>Review of Scientific Instruments</i> , 2016, 87, 11E201.	1.3	38
33	The scaling of electron and positron generation in intense laser-solid interactions. <i>Physics of Plasmas</i> , 2015, 22, .	1.9	37
34	Comparison of implosion core metrics: A 10 ps dilation X-ray imager vs a 100 ps gated microchannel plate. <i>Review of Scientific Instruments</i> , 2016, 87, 11E311.	1.3	34
35	Assessment and mitigation of diagnostic-generated electromagnetic interference at the National Ignition Facility. <i>Review of Scientific Instruments</i> , 2012, 83, 10D729.	1.3	33
36	Symmetry tuning of a near one-dimensional 2-shock platform for code validation at the National Ignition Facility. <i>Physics of Plasmas</i> , 2016, 23, .	1.9	33

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37	Sub-nanosecond single line-of-sight (SLOS) x-ray imagers (invited). Review of Scientific Instruments, 2018, 89, 10G123.	1.3	32
38	Examining the radiation drive asymmetries present in the high foot series of implosion experiments at the National Ignition Facility. Physics of Plasmas, 2017, 24, .	1.9	31
39	Thermal Temperature Measurements of Inertial Fusion Implosions. Physical Review Letters, 2018, 121, 085001.	7.8	31
40	Buffered high charge spectrally-peaked proton beams in the relativistic-transparency regime. New Journal of Physics, 2016, 18, 013038.	2.9	30
41	Relativistic plasma surfaces as an efficient second harmonic generator. New Journal of Physics, 2011, 13, 023041.	2.9	27
42	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
43	Nuclear activation as a high dynamic range diagnostic of laser-plasma interactions. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2008, 585, 117-120.	1.6	26
44	The single-line-of-sight, time-resolved x-ray imager diagnostic on OMEGA. Review of Scientific Instruments, 2018, 89, 10G117.	1.3	26
45	Late-Time Mixing Sensitivity to Initial Broadband Surface Roughness in High-Energy-Density Shear Layers. Physical Review Letters, 2016, 117, 225001.	7.8	25
46	Hotspot parameter scaling with velocity and yield for high-adiabat layered implosions at the National Ignition Facility. Physical Review E, 2020, 102, 023210.	2.1	25
47	In-flight observations of low-mode $\langle i \rangle$ asymmetries in NIF implosions. Physics of Plasmas, 2015, 22, .	1.9	24
48	Simulation and flow physics of a shocked and reshocked high-energy-density mixing layer. Journal of Fluid Mechanics, 2021, 915, .	3.4	23
49	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
50	Late-time mixing and turbulent behavior in high-energy-density shear experiments at high Atwood numbers. Physics of Plasmas, 2018, 25, .	1.9	22
51	Hotspot electron temperature from x-ray continuum measurements on the NIF. Review of Scientific Instruments, 2016, 87, 11E534.	1.3	21
52	The effect of shock dynamics on compressibility of ignition-scale National Ignition Facility implosions. Physics of Plasmas, 2014, 21, .	1.9	20
53	Achieving 280 Gbar hot spot pressure in DT-layered CH capsule implosions at the National Ignition Facility. Physics of Plasmas, 2020, 27, .	1.9	20
54	Observation of Hydrodynamic Flows in Imploding Fusion Plasmas on the National Ignition Facility. Physical Review Letters, 2021, 127, 125001.	7.8	20

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55	Target material dependence of positron generation from high intensity laser-matter interactions. <i>Physics of Plasmas</i> , 2016, 23, .	1.9	18
56	Comparative study of betatron radiation from laser-wakefield and direct-laser accelerated bunches of relativistic electrons. <i>Proceedings of SPIE</i> , 2009, , .	0.8	17
57	The dilation aided singleâ€‘lineâ€‘ofâ€‘sight xâ€‘ray camera for the National Ignition Facility: Characterization and fielding. <i>Review of Scientific Instruments</i> , 2018, 89, 10G125.	1.3	17
58	Investigation of the role of plasma channels as waveguides for laser-wakefield accelerators. <i>New Journal of Physics</i> , 2010, 12, 045008.	2.9	15
59	Development of new platforms for hydrodynamic instability and asymmetry measurements in deceleration phase of indirectly driven implosions on NIF. <i>Physics of Plasmas</i> , 2018, 25, 082705.	1.9	15
60	A high-resolution imaging x-ray crystal spectrometer for high energy density plasmas. <i>Review of Scientific Instruments</i> , 2014, 85, 11E606.	1.3	14
61	Maintaining low-mode symmetry control with extended pulse shapes for lower-adiabat Bigfoot implosions on the National Ignition Facility. <i>Physics of Plasmas</i> , 2019, 26, .	1.9	14
62	Micron-scale fast electron filaments and recirculation determined from rear-side optical emission in high-intensity laserâ€‘solid interactions. <i>New Journal of Physics</i> , 2010, 12, 073016.	2.9	13
63	Methods for characterizing x-ray detectors for use at the National Ignition Facility. <i>Review of Scientific Instruments</i> , 2012, 83, 10E118.	1.3	13
64	Reconstruction of 2D x-ray radiographs at the National Ignition Facility using pinhole tomography (invited). <i>Review of Scientific Instruments</i> , 2014, 85, 11E503.	1.3	13
65	Two-dimensional time-resolved ultra-high speed imaging of K-alpha emission from short-pulse-laser interactions to observe electron recirculation. <i>Applied Physics Letters</i> , 2017, 110, 144102.	3.3	13
66	X-ray imaging of Rayleighâ€‘Taylor instabilities using Fresnel zone plate at the National Ignition Facility. <i>Review of Scientific Instruments</i> , 2021, 92, 053511.	1.3	13
67	Study of near-GeV acceleration of electrons in a non-linear plasma wave driven by a self-guided laser pulse. <i>Plasma Physics and Controlled Fusion</i> , 2011, 53, 014008.	2.1	12
68	Influence of realistic parameters on state-of-the-art laser wakefield accelerator experiments. <i>Plasma Physics and Controlled Fusion</i> , 2012, 54, 055010.	2.1	12
69	Deficiencies in compression and yield in x-ray-driven implosions. <i>Physics of Plasmas</i> , 2020, 27, .	1.9	12
70	High harmonics from relativistically oscillating plasma surfacesâ€‘a high brightness attosecond source at keV photon energies. <i>Plasma Physics and Controlled Fusion</i> , 2007, 49, B149-B162.	2.1	11
71	Experiments to explore the influence of pulse shaping at the National Ignition Facility. <i>Physics of Plasmas</i> , 2020, 27, 112708.	1.9	11
72	Simplified model of pinhole imaging for quantifying systematic errors in image shape. <i>Applied Optics</i> , 2017, 56, 8719.	1.8	10

#	ARTICLE	IF	CITATIONS
73	On the design of the NIF Continuum Spectrometer. , 2017, , .		9
74	Spatially resolved X-ray emission measurements of the residual velocity during the stagnation phase of inertial confinement fusion implosion experiments. Physics of Plasmas, 2016, 23, 072701.	1.9	8
75	Principal factors in performance of indirect-drive laser fusion experiments. Physics of Plasmas, 2020, 27, .	1.9	7
76	Picosecond imaging of inertial confinement fusion plasmas using electron pulse-dilation. , 2017, , .		6
77	Using a 2-shock 1D platform at NIF to measure the effect of convergence on mix and symmetry. Physics of Plasmas, 2018, 25, 102702.	1.9	6
78	Simulations of symcap and layered NIF experiments with top/bottom laser asymmetry to impose P1 drive on capsules. Journal of Physics: Conference Series, 2016, 717, 012014.	0.4	5
79	Publisher's Note: Near-GeV Acceleration of Electrons by a Nonlinear Plasma Wave Driven by a Self-Guided Laser Pulse [Phys. Rev. Lett.103, 035002 (2009)]. Physical Review Letters, 2009, 103, .	7.8	4
80	X-ray bang-time measurements at the National Ignition Facility using a diamond detector. Review of Scientific Instruments, 2012, 83, 10E105.	1.3	4
81	Progress Towards a Laser Produced Relativistic Electron-Positron Pair Plasma. Journal of Physics: Conference Series, 2016, 688, 012010.	0.4	4
82	Structured photocathodes for improved high-energy x-ray efficiency in streak cameras. Review of Scientific Instruments, 2016, 87, 11E331.	1.3	4
83	Design of a high energy density experiment to measure the suppression of hydrodynamic instability in an applied magnetic field. Physics of Plasmas, 2022, 29, 012306.	1.9	4
84	Experiments on the single-mode Richtmyer-Meshkov instability with reshock at high energy densities. Physics of Plasmas, 2022, 29, .	1.9	4
85	Self-modulated wakefield acceleration in a centimetre self-guiding channel. Journal of Plasma Physics, 2012, 78, 433-440.	2.1	3
86	High quantum efficiency photocathode simulation for the investigation of novel structured designs. Review of Scientific Instruments, 2014, 85, 11D625.	1.3	3
87	Characterization of laser-driven proton beams from near-critical density targets using copper activation. Journal of Plasma Physics, 2015, 81, .	2.1	3
88	Three-dimensional signatures of self-similarity in a high-energy-density plasma shear-driven mixing layer. Physics of Plasmas, 2020, 27, 032701.	1.9	3
89	Long duration x-ray source development for x-ray diffraction at the National Ignition Facility. Review of Scientific Instruments, 2021, 92, 053904.	1.3	3
90	A study of space charge induced non-linearity in the Single Line Of Sight camera. Review of Scientific Instruments, 2022, 93, 023505.	1.3	3

#	ARTICLE	IF	CITATIONS
91	Design and implementation of Dilation X-ray Imager for NIF "DIXI". Proceedings of SPIE, 2013, , .	0.8	2
92	Control of Be capsule low mode implosions symmetry at the National Ignition Facility. Journal of Physics: Conference Series, 2016, 717, 012033.	0.4	2
93	A new symmetry model for hohlraum-driven capsule implosion experiments on the NIF. Journal of Physics: Conference Series, 2016, 688, 012042.	0.4	2
94	Using multiple x-ray emission images of inertially confined implosions to identify spatial variations and estimate confinement volumes (invited). Review of Scientific Instruments, 2018, 89, 10G105.	1.3	2
95	Turbulence generation by shock interaction with a highly nonuniform medium. Physical Review E, 2022, 105, .	2.1	2
96	Synchrotron Radiation from a Laser Plasma Accelerator in the Bubble Regime. , 2010, , .		1
97	Precision fabrication of large area silicon-based geometrically enhanced x-ray photocathodes using plasma etching. Proceedings of SPIE, 2015, , .	0.8	1
98	Laser driven MeV proton beam focussing by auto-charged electrostatic lens configuration. AIP Conference Proceedings, 2008, , .	0.4	0
99	High brightness keV harmonics from relativistically oscillating plasma surfaces. European Physical Journal: Special Topics, 2009, 175, 57-60.	2.6	0
100	Simultaneous high-resolution two-dimensional spatial and one-dimensional picosecond streaked x-ray pinhole imaging. Review of Scientific Instruments, 2012, 83, 10E504.	1.3	0
101	Overview of Performance and Progress with Inertially Confined Fusion Implosions on the National Ignition Facility. , 2015, , .		0
102	Long-Duration X-Ray Source Development for X-Ray Diffraction at The National Ignition Facility. , 2021, , .		0