Petr L Volegov

List of Publications by Year
in descending order

139	4,173	94433	128289
papers	citations	37 h-index	60 g-index

146	146	146	2026
all docs	docs citations	times ranked	citing authors

#	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	Bootstrap estimation of the effect of instrument response function uncertainty on the reconstruction of fusion neutron sources. Review of Scientific Instruments, 2022, 93, 043508.	1.3	0
4	First graded metal pushered single shell capsule implosions on the National Ignition Facility. Physics of Plasmas, 2022, 29, .	1.9	4
5	Hydroscaling indirect-drive implosions on the National Ignition Facility. Physics of Plasmas, 2022, 29, .	1.9	4
6	Bound on hot-spot mix in high-velocity, high-adiabat direct-drive cryogenic implosions based on comparison of absolute x-ray and neutron yields. Physical Review E, 2022, 106, .	2.1	2
7	Three-dimensional reconstruction of neutron, gamma-ray, and x-ray sources using a cylindrical-harmonics expansion. Review of Scientific Instruments, 2021, 92, 033508.	1.3	11
8	Toward 3D data visualization using virtual reality tools. Review of Scientific Instruments, 2021, 92, 033528.	1.3	5
9	Fuel convergence sensitivity in indirect drive implosions. Physics of Plasmas, 2021, 28, 042705.	1.9	11
10	Three dimensional low-mode areal-density non-uniformities in indirect-drive implosions at the National Ignition Facility. Physics of Plasmas, 2021, 28, .	1.9	12
11	Three-dimensional diagnostics and measurements of inertial confinement fusion plasmas. Review of Scientific Instruments, 2021, 92, 053526.	1.3	5
12	Achieving record hot spot energies with large HDC implosions on NIF in HYBRID-E. Physics of Plasmas, 2021, 28, .	1.9	55
13	Spectral characterization of flash and high flux x-ray radiographic sources with a magnetic Compton spectrometer. Review of Scientific Instruments, 2021, 92, 083102.	1.3	2
14	Observation of Hydrodynamic Flows in Imploding Fusion Plasmas on the National Ignition Facility. Physical Review Letters, 2021, 127, 125001.	7.8	20
15	Time-Resolved Fuel Density Profiles of the Stagnation Phase of Indirect-Drive Inertial Confinement Implosions. Physical Review Letters, 2020, 125, 155003.	7.8	27
16	Integrated performance of large HDC-capsule implosions on the National Ignition Facility. Physics of Plasmas, 2020, 27, .	1.9	22
17	Hot-spot mix in large-scale HDC implosions at NIF. Physics of Plasmas, 2020, 27, .	1.9	46
18	Principal factors in performance of indirect-drive laser fusion experiments. Physics of Plasmas, 2020, 27, .	1.9	7

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19	Fill tube dynamics in inertial confinement fusion implosions with high density carbon ablators. Physics of Plasmas, 2020, 27, .	1.9	11
20	Deficiencies in compression and yield in x-ray-driven implosions. Physics of Plasmas, 2020, 27, .	1.9	12
21	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
22	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
23	Demonstration of transmission high energy electron microscopy. AIP Conference Proceedings, 2020, , .	0.4	0
24	Hotspot conditions achieved in inertial confinement fusion experiments on the National Ignition Facility. Physics of Plasmas, 2020, 27, .	1.9	50
25	Plasma stopping-power measurements reveal transition from non-degenerate to degenerate plasmas. Nature Physics, 2020, 16, 432-437.	16.7	28
26	Density determination of the thermonuclear fuel region in inertial confinement fusion implosions. Journal of Applied Physics, 2020, 127, .	2.5	15
27	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
28	Impact of Localized Radiative Loss on Inertial Confinement Fusion Implosions. Physical Review Letters, 2020, 124, 145001.	7.8	58
29	Experiments to explore the influence of pulse shaping at the National Ignition Facility. Physics of Plasmas, 2020, 27, 112708.	1.9	11
30	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
31	Implosion performance of subscale beryllium capsules on the NIF. Physics of Plasmas, 2019, 26, 052707.	1.9	26
32	Approaching a burning plasma on the NIF. Physics of Plasmas, 2019, 26, .	1.9	83
33	Progress of indirect drive inertial confinement fusion in the United States. Nuclear Fusion, 2019, 59, 112018.	3.5	38
34	Electric and Magnetic Fields of the Brain. , 2019, , 111-143.		0
35	Electric and Magnetic Fields of the Brain. , 2019, , 1-33.		0
36	Three-dimensional characterization of the third line-of-site neutron imaging pinhole at NIF. , 2019, , .		3

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37	Demonstration of transmission high energy electron microscopy. Applied Physics Letters, 2018, 112, .	3.3	13
38	The high velocity, high adiabat, â€œBigfootâ€•campaign and tests of indirect-drive implosion scaling. Physics of Plasmas, 2018, 25, .	1.9	90
39	Variable convergence liquid layer implosions on the National Ignition Facility. Physics of Plasmas, 2018, 25, .	1.9	15
40	Aperture design for the third neutron and first gamma-ray imaging systems for the National Ignition Facility. Review of Scientific Instruments, 2018, 89, 10I127.	1.3	9
41	Optimizing neutron imaging line of sight locations for maximizing sampling of the cold fuel density in inertial confinement fusion implosions at the National Ignition Facility. Review of Scientific Instruments, 2018, 89, 10I147.	1.3	6
42	High-Performance Indirect-Drive Cryogenic Implosions at High Adiabat on the National Ignition Facility. Physical Review Letters, 2018, 121, 135001.	7.8	86
43	A liquid VI scintillator cell for fast-gated neutron imaging. Review of Scientific Instruments, 2018, 89, 10I142.	1.3	12
44	First D+D neutron image at the National Ignition Facility. Physics of Plasmas, 2018, 25, .	1.9	9
45	Calibration of two compact permanent magnet spectrometers for high current electron linear induction accelerators. Review of Scientific Instruments, 2018, 89, 073303.	1.3	2
46	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
47	Lens design challenges for scintillator-based neutron imaging. , 2018, , .		1
48	Evolution of the neutron imaging aperture. , 2018, , .		1
49	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
50	Symmetry control of an indirectly driven high-density-carbon implosion at high convergence and high velocity. Physics of Plasmas, 2017, 24, .	1.9	106
51	Mix and hydrodynamic instabilities on NIF. Journal of Instrumentation, 2017, 12, C06001-C06001.	1.2	21
52	Three-dimensional reconstruction of neutron, gamma-ray, and x-ray sources using spherical harmonic decomposition. Journal of Applied Physics, 2017, 122, .	2.5	27
53	Scintillator Characterization Measurements for Neutron Imaging in Inertial Confinement Fusion. , 2017, , .		0
54	System design of the NIF Neutron Imaging System North Pole. , 2017, , .		3

#	ARTICLE	IF	CITATIONS
55	Results from neutron imaging of ICF experiments at NIF. Journal of Physics: Conference Series, 2016, 688, 012064.	0.4	7
56	Nuclear Diagnostics at the National Ignition Facility, 2013-2015. Journal of Physics: Conference Series, 2016, 717, 012117.	0.4	3
57	A wide-acceptance Compton spectrometer for spectral characterization of a medical x-ray source. Proceedings of SPIE, 2016, , .	0.8	3
58	Design of the polar neutron-imaging aperture for use at the National Ignition Facility. Review of Scientific Instruments, 2016, 87, 11D821.	1.3	13
59	Neutron imaging with the short-pulse laser driven neutron source at the Trident laser facility. Journal of Applied Physics, 2016, 120, .	2.5	32
60	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
61	SQUIDs in biomagnetism: a roadmap towards improved healthcare. Superconductor Science and Technology, 2016, 29, 113001.	3.5	67
62	Solid polystyrene and deuterated polystyrene light output response to fast neutrons. Review of Scientific Instruments, 2016, 87, 043513.	1.3	2
63	Inertially confined fusion plasmas dominated by alpha-particle self-heating. Nature Physics, 2016, 12, 800-806.	16.7	144
64	Combined neutron and x-ray imaging at the National Ignition Facility (invited). Review of Scientific Instruments, 2016, 87, 11D703.	1.3	15
65	Fluence-compensated down-scattered neutron imaging using the neutron imaging system at the National Ignition Facility. Review of Scientific Instruments, 2016, 87, 11E715.	1.3	24
66	Design of the aperture array for neutron imaging from the north pole of the National Ignition Facility. Proceedings of SPIE, 2016, , .	0.8	3
67	Multi-Channel SQUID-Based Ultra-Low Field Magnetic Resonance Imaging in Unshielded Environment. , 2015, , .		0
68	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
69	Demonstration of a time-integrated short line of sight neutron imaging system for inertial confinement fusion. Review of Scientific Instruments, 2015, 86, 125112.	1.3	10
70	On three-dimensional reconstruction of a neutron/x-ray source from very few two-dimensional projections. Journal of Applied Physics, 2015, 118, .	2.5	20
71	Overview of Performance and Progress with Inertially Confined Fusion Implosions on the National Ignition Facility. , 2015, , .		0
72	2015, 22, 056314.	1.9	49

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73	First High-Convergence Cryogenic Implosion in a Near-Vacuum Hohlraum. Physical Review Letters, 2015, 114, 175001.	7.8	117
74	Multi-axis neutron imaging at the National Ignition Facility. Proceedings of SPIE, 2015, , .	0.8	2
75	Progress Toward a Deployable SQUID-Based Ultra-Low Field MRI System for Anatomical Imaging. IEEE Transactions on Applied Superconductivity, 2015, 25, 1-5.	1.7	26
76	Thin Shell, High Velocity Inertial Confinement Fusion Implosions on the National Ignition Facility. Physical Review Letters, 2015, 114, 145004.	7.8	56
77	Simultaneous neutron and x-ray imaging of inertial confinement fusion experiments along a single line of sight at Omega. Review of Scientific Instruments, 2015, 86, 043503.	1.3	8
78	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
79	Measuring x-ray spectra of flash radiographic sources. Proceedings of SPIE, 2015, , .	0.8	3
80	CHAPTER 7. Detection Using SQUIDs and Atomic Magnetometers. New Developments in NMR, 2015, , 183-224.	0.1	0
81	A concept to collect neutron and x-ray images on the same line of sight at NIF. Review of Scientific Instruments, 2014, 85, 11E614.	1.3	6
82	Self characterization of a coded aperture array for neutron source imaging. Review of Scientific Instruments, 2014, 85, 123506.	1.3	14
83	Simulations of indirectly driven gas-filled capsules at the National Ignition Facility. Physics of Plasmas, 2014, 21, .	1.9	12
84	Neutron source reconstruction from pinhole imaging at National Ignition Facility. Review of Scientific Instruments, 2014, 85, 023508.	1.3	78
85	Toward early cancer detection using superparamagnetic relaxometry in a SQUID-based ULF-MRI system. Superconductor Science and Technology, 2014, 27, 044031.	3.5	7
86	Determining x-ray spectra of radiographic sources with a Compton spectrometer. Proceedings of SPIE, 2014, , .	0.8	3
87	On a ghost artefact in ultra low field magnetic resonance relaxation imaging. Journal of Magnetic Resonance, 2014, 243, 98-106.	2.1	0
88	Polarization enhancement technique for nuclear quadrupole resonance detection. Solid State Nuclear Magnetic Resonance, 2014, 61-62, 35-38.	2.3	5
89	MagViz: A Bottled Liquids Scanner Using Ultra-Low Field NMR Relaxometry. NATO Science for Peace and Security Series B: Physics and Biophysics, 2014, , 99-110.	0.3	0
90	Electric and Magnetic Fields of the Brain. , 2014, , 73-105.		0

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91	Optimization and Configuration of SQUID Sensor Arrays for a MEG-MRI System. IEEE Transactions on Applied Superconductivity, 2013, 23, 1601304-1601304.	1.7	9
92	Toward High Resolution Images With SQUID-Based Ultra-Low Field Magnetic Resonance Imaging. IEEE Transactions on Applied Superconductivity, 2013, 23, 1603107-1603107.	1.7	7
93	SQUID-detected ultra-low field MRI. Journal of Magnetic Resonance, 2013, 229, 127-141.	2.1	47
94	Nuclear imaging of the fuel assembly in ignition experiments. Physics of Plasmas, 2013, 20, 056320.	1.9	65
95	Summary of the first neutron image data collected at the National Ignition Facility. EPJ Web of Conferences, 2013, 59, 13017.	0.3	6
96	The neutron imaging system fielded at the National Ignition Facility. EPJ Web of Conferences, 2013, 59, 13016.	0.3	1
97	First downscattered neutron images from Inertial Confinement Fusion experiments at the National Ignition Facility. EPJ Web of Conferences, 2013, 59, 13018.	0.3	7
98	A new aperture for neutron and x-ray imaging of inertial confinement fusion experiments. Review of Scientific Instruments, 2012, 83, 10E522.	1.3	5
99	The neutron imaging diagnostic at NIF (invited). Review of Scientific Instruments, 2012, 83, 10D317.	1.3	116
100	Simultaneous usage of pinhole and penumbral apertures for imaging small scale neutron sources from inertial confinement fusion experiments. Review of Scientific Instruments, 2012, 83, 10D316.	1.3	16
101	Radiation damping for speedingâ€up NMR applications. Concepts in Magnetic Resonance Part A: Bridging Education and Research, 2012, 40A, 179-185.	0.5	1
102	SQUID-based systems for co-registration of ultra-low field nuclear magnetic resonance images and magnetoencephalography. Physica C: Superconductivity and Its Applications, 2012, 482, 19-26.	1.2	22
103	Performance characteristics of the neutron imaging diagnostic at NIF. , 2011, , .		0
104	Co-Registration of Interleaved MEG and ULF MRI Using a 7 Channel Low-$T_{m c}$ SQUID System. IEEE Transactions on Applied Superconductivity, 2011, 21, 456-460.	1.7	55
105	SQUIDs vs. Induction Coils for Ultra-Low Field Nuclear Magnetic Resonance: Experimental and Simulation Comparison. IEEE Transactions on Applied Superconductivity, 2011, 21, 465-468.	1.7	25
106	Noise Modeling From Conductive Shields Using Kirchhoff Equations. IEEE Transactions on Applied Superconductivity, 2011, 21, 489-492.	1.7	8
107	Non-cryogenic anatomical imaging in ultra-low field regime: Hand MRI demonstration. Journal of Magnetic Resonance, 2011, 211, 101-108.	2.1	22
108	Progress on Detection of Liquid Explosives Using Ultra-Low Field MRI. IEEE Transactions on Applied Superconductivity, 2011, 21, 530-533.	1.7	16

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109	Ultra-low-field MRI for the detection of liquid explosives. Superconductor Science and Technology, 2010, 23, 034023.	3.5	53
110	Magnetic Resonance Relaxometry at Low and Ultra Low Fields. IFMBE Proceedings, 2010, 28, 82-87.	0.3	8
111	Ultra-Low Field NMR of ${m UF}_{6}$ for $^{235}{m U}$ Detection and Characterization. IEEE Transactions on Applied Superconductivity, 2009, 19, 816-818.	1.7	8
112	Applications of Ultra-Low Field Magnetic Resonance for Imaging and Materials Studies. IEEE Transactions on Applied Superconductivity, 2009, 19, 835-838.	1.7	23
113	SQUID-Based Microtesla MRI for In Vivo Relaxometry of the Human Brain. IEEE Transactions on Applied Superconductivity, 2009, 19, 823-826.	1.7	50
114	MRI with an atomic magnetometer suitable for practical imaging applications. Journal of Magnetic Resonance, 2009, 199, 188-191.	2.1	89
115	SQUIDs for Magnetic Resonance Imaging at Ultra-low Magnetic Field. Progress in Electromagnetics Research Symposium: [proceedings] Progress in Electromagnetics Research Symposium, 2009, 5, 466-470.	0.4	7
116	Parallel MRI at microtesla fields. Journal of Magnetic Resonance, 2008, 192, 197-208.	2.1	65
117	Detection of 3He spins with ultra-low field nuclear magnetic resonance employing SQUIDs for application to a neutron electric dipole moment experiment. Journal of Magnetic Resonance, 2008, 195, 129-133.	2.1	5
118	Microtesla MRI of the human brain combined with MEG. Journal of Magnetic Resonance, 2008, 194, 115-120.	2.1	159
119	Toward direct neural current imaging by resonant mechanisms at ultra-low field. NeuroImage, 2008, 39, 310-317.	4.2	76
120	SQUID-based instrumentation for ultralow-field MRI. Superconductor Science and Technology, 2007, 20, S367-S373.	3.5	85
121	Probabilistic forward model for electroencephalography source analysis. Physics in Medicine and Biology, 2007, 52, 5309-5327.	3.0	23
122	Toward SQUID-Based Direct Measurement of Neural Currents by Nuclear Magnetic Resonance. IEEE Transactions on Applied Superconductivity, 2007, 17, 854-857.	1.7	9
123	Multi-Channel SQUID System for MEG and Ultra-Low-Field MRI. IEEE Transactions on Applied Superconductivity, 2007, 17, 839-842.	1.7	45
124	First-Order Planar Superconducting Quantum Interference Device Gradiometers With Long Baseline. IEEE Transactions on Applied Superconductivity, 2007, 17, 672-675.	1.7	10
125	Using ultra-low field nuclear magnetic resonance for direct neural current measurements. International Congress Series, 2007, 1300, 582-585.	0.2	2
126	Multi-sensor system for simultaneous ultra-low-field MRI and MEG. International Congress Series, 2007, 1300, 631-634.	0.2	2

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127	Ultra-low field NMR measurements of liquids and gases with short relaxation times. Journal of Magnetic Resonance, 2006, 183, 134-141.	2.1	20
128	On concomitant gradients in low-field MRI. Journal of Magnetic Resonance, 2005, 175, 103-113.	2.1	46
129	SQUID-Based Simultaneous Detection of NMR and Biomagnetic Signals at Ultra-Low Magnetic Fields. IEEE Transactions on Applied Superconductivity, 2005, 15, 635-639.	1.7	33
130	Spatio-temporal mapping of rat whisker barrels with fast scattered light signals. NeuroImage, 2005, 26, 619-627.	4.2	85
131	Instrumentation for Simultaneous Detection of Low Field NMR and Biomagnetic Signals. IEEE Transactions on Applied Superconductivity, 2005, 15, 676-679.	1.7	24
132	Noise-free magnetoencephalography recordings of brain function. Physics in Medicine and Biology, 2004, 49, 2117-2128.	3.0	22
133	Forward model theoretical basis for a superconducting imaging surface magnetoencephalography system. Physics in Medicine and Biology, 2004, 49, 523-532.	3.0	0
134	Simultaneous magnetoencephalography and SQUID detected nuclear MR in microtesla magnetic fields. Magnetic Resonance in Medicine, 2004, 52, 467-470.	3.0	68
135	SQUID detected NMR in microtesla magnetic fields. Journal of Magnetic Resonance, 2004, 170, 1-7.	2.1	87
136	Experimental investigation of high temperature superconducting imaging surface magnetometry. Review of Scientific Instruments, 2002, 73, 2360-2363.	1.3	0
137	Performance of a novel SQUID-based superconducting imaging-surface magnetoencephalography system. Physica C: Superconductivity and Its Applications, 2002, 368, 18-23.	1.2	18
138	IMAGING MAGNETIC SOURCES IN THE PRESENCE OF SUPERCONDUCTING SURFACES: MODEL & EXPERIMENT. Biomedizinische Technik, 2001, 46, 159-161.	0.8	1
139	Source Localization Precision of the Superconducting Imaging-Surface MEG System. Biomedizinische Technik, 2001, 46, 38-40.	0.8	5