

# Alexander B Zorin

## List of Publications by Year in descending order

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122  
papers

3,024  
citations

218381

26  
h-index

174990

52  
g-index

127  
all docs

127  
docs citations

127  
times ranked

1605  
citing authors

#	ARTICLE	IF	CITATIONS
1	Theory of the Bloch-wave oscillations in small Josephson junctions. Journal of Low Temperature Physics, 1985, 59, 347-382.	0.6	518
2	Implementation of superconductor/ferromagnet/ superconductor $\delta$ -shifters in superconducting digital and quantum circuits. Nature Physics, 2010, 6, 593-597.	6.5	205
3	Background charge noise in metallic single-electron tunneling devices. Physical Review B, 1996, 53, 13682-13687.	1.1	197
4	The thermocoax cable as the microwave frequency filter for single electron circuits. Review of Scientific Instruments, 1995, 66, 4296-4300.	0.6	151
5	European roadmap on superconductive electronics – status and perspectives. Physica C: Superconductivity and Its Applications, 2010, 470, 2079-2126.	0.6	131
6	Operation of a three-junction single-electron pump with on-chip resistors. Applied Physics Letters, 2001, 78, 946-948.	1.5	88
7	Quantum-Limited Electrometer Based on Single Cooper Pair Tunneling. Physical Review Letters, 1996, 76, 4408-4411.	2.9	76
8	Noise in Al single electron transistors of stacked design. Journal of Applied Physics, 1998, 84, 3212-3215.	1.1	69
9	Single-Charge Transistor Based on the Charge-Phase Duality of a Superconducting Nanowire Circuit. Physical Review Letters, 2012, 108, 097001.	2.9	68
10	Coulomb blockade and cotunneling in single electron circuits with on-chip resistors: Towards the implementation of the R pump. Journal of Applied Physics, 2000, 88, 2665-2670.	1.1	64
11	Reversal Mechanism of an Individual Ni Nanotube Simultaneously Studied by Torque and SQUID Magnetometry. Physical Review Letters, 2013, 111, 067202.	2.9	59
12	SCENET roadmap for superconductor digital electronics. Physica C: Superconductivity and Its Applications, 2006, 439, 1-41.	0.6	58
13	Superconducting quantum interference devices with submicron Nb/HfTi/Nb junctions for investigation of small magnetic particles. Applied Physics Letters, 2011, 99, .	1.5	56
14	A single flux quantum circuit with a ferromagnet-based Josephson $\delta$ -junction. Superconductor Science and Technology, 2010, 23, 045032.	1.8	54
15	Cooper-pair qubit and Cooper-pair electrometer in one device. Physica C: Superconductivity and Its Applications, 2002, 368, 284-288.	0.6	53
16	NbSi nanowire quantum phase-slip circuits: dc supercurrent blockade, microwave measurements, and thermal analysis. Physical Review B, 2013, 87, .	1.1	48
17	Nb nano superconducting quantum interference devices with high spin sensitivity for operation in magnetic fields up to 0.5 T. Applied Physics Letters, 2013, 102, .	1.5	47
18	Radio-frequency based monitoring of small supercurrents. Review of Scientific Instruments, 2001, 72, 1882.	0.6	45

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19	Single-electron transistor with metallic microstrips instead of tunnel junctions. Journal of Applied Physics, 2001, 90, 2411-2415.	1.1	45
20	Aluminium Single Electron Transistors with Islands Isolated from the Substrate. Journal of Low Temperature Physics, 2000, 118, 287-296.	0.6	42
21	Quantum statistical theory of microwave detection using superconducting tunnel junctions. Journal of Applied Physics, 1986, 60, 1808-1828.	1.1	34
22	Radio-Frequency Bloch-Transistor Electrometer. Physical Review Letters, 2001, 86, 3388-3391.	2.9	34
23	Single-charge devices with ultrasmall Nb <sup>x</sup> AlO <sup>x</sup> Nb trilayer Josephson junctions. Journal of Applied Physics, 2005, 97, 054501.	1.1	34
24	Flux-Driven Josephson Traveling-Wave Parametric Amplifier. Physical Review Applied, 2019, 12, .	1.5	34
25	Quasiparticle Interference Effects in a Ballistic Superconductor-Semiconductor-Superconductor Josephson Junction. Physical Review Letters, 1998, 81, 1686-1689.	2.9	31
26	Investigation of the offset charge noise in single electron tunneling devices. IEEE Transactions on Instrumentation and Measurement, 1997, 46, 303-306.	2.4	27
27	Storage capabilities of a four-junction single-electron trap with an on-chip resistor. Applied Physics Letters, 1999, 75, 2665-2667.	1.5	25
28	Single electron transistors with high-quality superconducting niobium islands. Applied Physics Letters, 2002, 80, 2776-2778.	1.5	25
29	Cooper Pair Cotunneling in Single Charge Transistors with Dissipative Electromagnetic Environment. Physical Review Letters, 2003, 91, 197002.	2.9	24
30	Pumping properties of the hybrid single-electron transistor in dissipative environment. Applied Physics Letters, 2009, 95, 112507.	1.5	24
31	Quantum Dynamics in a Camelback Potential of a dc SQUID. Physical Review Letters, 2009, 102, 097004.	2.9	24
32	Nanoscale multifunctional sensor formed by a Ni nanotube and a scanning Nb nanoSQUID. Physical Review B, 2013, 88, .	1.1	23
33	Multilayer technique for fabricating Nb junction circuits exhibiting charging effects. Journal of Vacuum Science & Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena, 1999, 17, 230.	1.6	22
34	Progress in measurements of a single-electron pump by means of a ccc. IEEE Transactions on Instrumentation and Measurement, 2003, 52, 599-603.	2.4	22
35	Characterization and metrological investigation of an R-pump with driving frequencies up to 100%MHz. Metrologia, 2008, 45, 482-491.	0.6	22
36	Magnetization reversal of an individual exchange-biased permalloy nanotube. Physical Review B, 2015, 92, .	1.1	21

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37	Passive Phase Shifter for Superconducting Josephson Circuits. IEEE Transactions on Applied Superconductivity, 2007, 17, 142-145.	1.1	20
38	Simultaneous Bloch and Josephson Oscillations, and Resistance Quantizations in Small Superconducting Double Junctions. Japanese Journal of Applied Physics, 1987, 26, 1407.	0.8	18
39	Single electron transistors with Nb/AlO <sub>x</sub> /Nb junctions. Journal of Vacuum Science & Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena, 2003, 21, 775.	1.6	18
40	Bloch Inductance in Small-Capacitance Josephson Junctions. Physical Review Letters, 2006, 96, 167001.	2.9	18
41	Long hold times in a two-junction electron trap. Applied Physics Letters, 2011, 99, .	1.5	18
42	Control of single-electron tunneling by surface acoustic waves. Physical Review B, 1994, 50, 11255-11258.	1.1	15
43	Highly Sensitive Electrometers Based on Single Cooper Pair Tunneling. Journal of Superconductivity and Novel Magnetism, 1999, 12, 747-755.	0.5	15
44	Josephson charge-phase qubit with radio frequency readout: Coupling and decoherence. Journal of Experimental and Theoretical Physics, 2004, 98, 1250-1261.	0.2	15
45	Charging and heating effects in a system of coupled single-electron tunneling devices. Physical Review B, 1999, 59, 10778-10784.	1.1	14
46	Characterization of all-chromium tunnel junctions and single-electron tunneling devices fabricated by direct-writing multilayer technique. Journal of Applied Physics, 1999, 86, 6956-6964.	1.1	14
47	Low hysteretic behavior of Al <sup>*</sup> AlO <sub>x</sub> <sup>*</sup> Al Josephson junctions. Applied Physics Letters, 2006, 89, 132115.	1.5	14
48	Single-charge escape processes through a hybrid turnstile in a dissipative environment. New Journal of Physics, 2011, 13, 013040.	1.2	14
49	Traveling-Wave Parametric Amplifier Based on Three-Wave Mixing in a Josephson Metamaterial. , 2017, , .		14
50	Josephson junctions with nonlinear damping for rapid single-flux-quantum - qubit circuits. Applied Physics Letters, 2005, 86, 032501.	1.5	13
51	Superconducting phase qubit based on the Josephson oscillator with strong anharmonicity. Physical Review B, 2009, 80, .	1.1	13
52	Dynamics of Josephson junctions and single-flux-quantum networks with superconductor <sup>*</sup> insulator <sup>*</sup> normal-metal junction shunts. Physical Review B, 2006, 74, .	1.1	12
53	Period-doubling bifurcation readout for a Josephson qubit. Physical Review B, 2011, 83, .	1.1	12
54	Towards the observation of phase-locked Bloch oscillations in arrays of small Josephson junctions. Physical Review B, 2011, 84, .	1.1	12

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55	A very low-noise single-electron electrometer of stacked-junction geometry. <i>Physica B: Condensed Matter</i> , 2000, 284-288, 1800-1801.	1.3	11
56	Rapid single-flux quantum control of the energy potential in a double SQUID qubit circuit. <i>Superconductor Science and Technology</i> , 2007, 20, 500-505.	1.8	11
57	Quasi-phasematching in a poled Josephson traveling-wave parametric amplifier with three-wave mixing. <i>Applied Physics Letters</i> , 2021, 118, .	1.5	11
58	Implementation of superconductive passive phase shifters in high-speed integrated RSFQ digital circuits. <i>Superconductor Science and Technology</i> , 2008, 21, 045007.	1.8	10
59	Two ways toward experimental observation of the Bloch oscillations in ultrasmall Josephson junctions. <i>Physica B: Condensed Matter</i> , 1990, 165-166, 933-934.	1.3	9
60	Ultimate sensitivity of the single Cooper pair tunneling electrometer. <i>IEEE Transactions on Instrumentation and Measurement</i> , 1997, 46, 299-302.	2.4	9
61	Novel method for fabricating deep submicron Nb/AlO <sub>x</sub> /Nb tunnel junctions based on spin-on glass planarization. <i>IEEE Transactions on Applied Superconductivity</i> , 1999, 9, 3251-3254.	1.1	9
62	Steps Toward a Capacitance Standard Based on Single-Electron Counting at PTB. <i>IEEE Transactions on Instrumentation and Measurement</i> , 2005, 54, 666-669.	2.4	9
63	Quantum dynamics of superconducting nano-circuits: phase qubit, charge qubit and rhombi chains. <i>Quantum Information Processing</i> , 2009, 8, 155-182.	1.0	9
64	Voltage fluctuations in Josephson tunnel junctions. <i>Physica B: Physics of Condensed Matter &amp; C: Atomic, Molecular and Plasma Physics, Optics</i> , 1981, 108, 1293-1294.	0.9	8
65	Superconductor electronics: new prospects. <i>IEEE Transactions on Magnetics</i> , 1989, 25, 1290-1293.	1.2	8
66	The effect of thermal annealing on the properties of Al <sub>x</sub> O <sub>y</sub> /Al single electron tunneling transistors. <i>Journal of Applied Physics</i> , 2001, 90, 2528-2532.	1.1	8
67	Ground-state characterization of Nb charge-phase Josephson qubits. <i>Physical Review B</i> , 2006, 73, .	1.1	8
68	A hybrid superconductor-normal metal electron trap as a photon detector. <i>Applied Physics Letters</i> , 2012, 100, 242601.	1.5	8
69	New Possibilities for Superconductor Devices. , 1990, , 1-49.		7
70	Charge state instabilities in the single-electron trap. <i>European Physical Journal D</i> , 1996, 46, 2283-2284.	0.4	7
71	Measurement of small supercurrents in niobium SQUID circuits. <i>Physica C: Superconductivity and Its Applications</i> , 2001, 352, 141-143.	0.6	7
72	Transport and Noise Properties of sub-100-nm Planar $\text{Nb}$ Josephson Junctions with Metallic $\text{Hf}$ - $\text{Ti}$	1.5	7

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73	Radio-frequency-induced transport of Cooper pairs in superconducting single electron transistors in a dissipative environment. Journal of Applied Physics, 2004, 95, 6325-6331.	1.1	6
74	Quasiparticle transitions in charge-phase qubits probed by rf oscillations. Physical Review B, 2007, 76, .	1.1	6
75	Cooper Pair Transport in a Resistor-Biased Josephson Junction Array. IEEE Transactions on Instrumentation and Measurement, 2007, 56, 491-494.	2.4	6
76	An optimal tunable Josephson element for quantum computing. Applied Physics Letters, 2008, 93, .	1.5	6
77	Detection of On-Chip Generated Weak Microwave Radiation Using Superconducting Normal-Metal SET. Applied Sciences (Switzerland), 2016, 6, 35.	1.3	6
78	Elektronik mit einzelnen Elektronen. Physik in Unserer Zeit, 1992, 23, 159-165.	0.0	5
79	Superconducting electrometer based on the resistively shunted Bloch transistor. IEEE Transactions on Applied Superconductivity, 1999, 9, 3664-3667.	1.1	5
80	Harmonic current-phase relation in Nb/Al-based superconductor/insulator/normal conductor/insulator/superconductor-type Josephson junctions between 4.2 K and the critical temperature. Applied Physics Letters, 2000, 77, 1354-1356.	1.5	5
81	Supercurrent-phase relation of an Nb/AlO <sub>x</sub> /Al/AlO <sub>x</sub> /Nb-based Josephson junction at the superconducting transition of the Al Interlayer. Physical Review B, 2000, 62, R14645-R14648.	1.1	5
82	The peculiarities of single-electron transport in granular Cr films. Microelectronic Engineering, 2005, 81, 217-221.	1.1	5
83	Development of the sinus turnstile for the quantum metrological triangle. , 2010, , .		5
84	Subgap conductivity in SIN-junctions of high barrier transparency. Physica C: Superconductivity and Its Applications, 2006, 449, 81-86.	0.6	4
85	Simulation of single-electron transport processes in thin granulated chromium films. JETP Letters, 2010, 91, 402-406.	0.4	4
86	Counting electrons one by one~overview of a joint european research project. IEEE Transactions on Instrumentation and Measurement, 2003, 52, 584-589.	2.4	3
87	Superconductive passive phase shifter for integrated RSFQ digital circuits. Superconductor Science and Technology, 2007, 20, S332-S335.	1.8	3
88	Shunt-protected single-electron tunneling circuits fabricated on a quartz wafer. , 2009, , .		3
89	Detection of the single electron tunneling noise using coulomb blockade electrometer. European Physical Journal D, 1996, 46, 2281-2282.	0.4	2
90	Cooper Pair Tunneling in Circuits with Substantial Dissipation: The Three-Junction R-Pump for Single Cooper Pairs. , 2001, , 147-154.		2

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91	LTS junction technology for RSFQ and qubit circuit applications. Physica C: Superconductivity and Its Applications, 2006, 445-448, 930-936.	0.6	2
92	Single flux quantum circuits with damping based on dissipative transmission lines. Superconductor Science and Technology, 2008, 21, 125010.	1.8	2
93	Photon-activated electron hopping in a single-electron trap enhanced by Josephson radiation. Applied Physics Letters, 2016, 108, 172603.	1.5	2
94	Frequency-Locked Current of Cooper Pairs in Superconducting Single Electron Transistor with Ohmic Resistor. , 2002, , 105-114.		2
95	The sign of the interference current component in superconducting tunnel junctions. World Scientific Series in 20th Century Physics, 2002, , 96-105.	0.0	2
96	Pumping of single electrons with a traveling wave. Physica B: Condensed Matter, 1995, 210, 461-467.	1.3	1
97	A strongly asymmetric single-electron transistor operating as a zero-biased electrometer. JETP Letters, 2005, 82, 77-80.	0.4	1
98	A quantum current standard based on phase slip. , 2008, , .		1
99	Double-shielded sample stage for single-electron devices. , 2012, , .		1
100	Two-junction superconductor-normal metal single-electron trap in a combined on-chip RC environment. Journal of Physics: Conference Series, 2012, 400, 042040.	0.3	1
101	Cooper Pair Transport In Systems Of Ultrasmall Josephson Junctions. , 1991, , 229-237.		1
102	Controlled transfer of single Cooper pairs in the small-capacitance tunnel junction transistor. Superconductor Science and Technology, 1991, 4, 662-663.	1.8	0
103	The Bloch oscillations in the superconducting tunnel junction biased through 1-D array of normal junctions. Superconductor Science and Technology, 1991, 4, 623-625.	1.8	0
104	Coulomb blockade electrometer based on single Cooper pair tunneling. Applied Superconductivity, 1998, 6, 453-458.	0.5	0
105	Fewer-junction single-electron trap with an ohmic resistor. Physica B: Condensed Matter, 2000, 280, 403-404.	1.3	0
106	All-chromium single-electron tunneling devices fabricated by direct-writing multilayer technique. Physica B: Condensed Matter, 2000, 284-288, 1806-1807.	1.3	0
107	Microfabrication and characterization of superconducting radio-frequency oscillators. Review of Scientific Instruments, 2001, 72, 4302-4304.	0.6	0
108	Current-phase relation in Nb-Al based SINIS-type Josephson junctions. IEEE Transactions on Applied Superconductivity, 2001, 11, 1142-1145.	1.1	0

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109	Progress in measurements of electron pump by means of a CCC. , 0, , .		0
110	Ultimate Speed of Dissipative Pumping of Cooper Pairs. , 2004, , .		0
111	Steps Towards a Capacitance Standard Based on Single-Electron Counting at PTB. , 2004, , .		0
112	Photon-Assisted Tunneling in a Resistive Electron Pump. AIP Conference Proceedings, 2006, , .	0.3	0
113	Low-noise RSFQ circuits for a Josephson Qubit control. Journal of Physics: Conference Series, 2008, 97, 012041.	0.3	0
114	Ultimate error detection circuit for the hybrid electron turnstiles. , 2010, , .		0
115	Hybrid single-electron turnstile - Towards a quantum standard of electric current. , 2010, , .		0
116	Radio-frequency transport of single electrons in superconductor-normal-metal tunnel junctions and the quantum metrological triangle. , 2011, , .		0
117	Measurement and control of single-photon microwave radiation on chip. , 2014, , .		0
118	Towards measurement and control of single-photon microwave radiation on chip. , 2015, , .		0
119	Setup for Experiments on the Supercurrent-Phase Relation in Bloch Transistors " Status and Possible Applications. , 2002, , 115-122.		0
120	Single Cooper Pair Electrometer Based on a Radio-Frequency-Squid Scheme. , 2002, , 87-96.		0
121	APPLICABILITY OF THE THEORY OF THE JOSEPHSON EFFECT IN TUNNEL JUNCTIONS TO WEAK LINKS. Journal De Physique Colloque, 1978, 39, C6-573-C6-574.	0.2	0
122	Superconducting microwave resonators with non-centrosymmetric nonlinearity. Superconductor Science and Technology, 2022, 35, 065020.	1.8	0