

Jukka P Pekola

List of Publications by Year in descending order

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145
papers

6,876
citations

71102

41
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62596

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145
all docs

145
docs citations

145
times ranked

3306
citing authors

#	ARTICLE	IF	CITATIONS
1	An electron turnstile for frequency-to-power conversion. <i>Nature Nanotechnology</i> , 2022, 17, 239-243.	31.5	6
2	Using materials for quasiparticle engineering. <i>Materials for Quantum Technology</i> , 2022, 2, 013001.	3.1	12
3	Radio-Frequency Coulomb-Blockade Thermometry. <i>Physical Review Applied</i> , 2022, 17, .	3.8	3
4	Ultrasensitive Calorimetric Detection of Single Photons from Qubit Decay. <i>Physical Review X</i> , 2022, 12, .	8.9	4
5	Photonic heat transport in three terminal superconducting circuit. <i>Nature Communications</i> , 2022, 13, 1552.	12.8	12
6	Low Temperature Characteristics of the Metal–Superconductor NIS Tunneling Thermometer. <i>Journal of Low Temperature Physics</i> , 2022, 207, 220-225.	1.4	2
7	A superconductor free of quasiparticles for seconds. <i>Nature Physics</i> , 2022, 18, 145-148.	16.7	19
8	Cooper-Pair Box Coupled to Two Resonators: An Architecture for a Quantum Refrigerator. <i>Physical Review Applied</i> , 2022, 17, .	3.8	13
9	Ultimate Accuracy of Frequency to Power Conversion by Single-Electron Injection. <i>Physical Review Letters</i> , 2022, 129, .	7.8	3
10	Quantum thermodynamics at low temperatures. <i>Europhysics News</i> , 2021, 52, 15-17.	0.3	1
11	Thermodynamics of Gambling Demons. <i>Physical Review Letters</i> , 2021, 126, 080603.	7.8	38
12	Electron-phonon coupling of epigraphene at millikelvin temperatures measured by quantum transport thermometry. <i>Applied Physics Letters</i> , 2021, 118, 103102.	3.3	1
13	Finite-time quantum Stirling heat engine. <i>New Journal of Physics</i> , 2021, 23, 033034.	2.9	22
14	Self-Calibrating Superconducting Pair-Breaking Detector. <i>Physical Review Letters</i> , 2021, 127, 147001.	7.8	4
15	<i>Colloquium</i> : Quantum heat transport in condensed matter systems. <i>Reviews of Modern Physics</i> , 2021, 93, .	45.6	73
16	Downconversion of quantum fluctuations of photonic heat current in a circuit. <i>Physical Review B</i> , 2021, 104, .	3.2	2
17	Quantifying the quantum heat contribution from a driven superconducting circuit. <i>Physical Review E</i> , 2020, 102, 030102.	2.1	10
18	Electric field control of radiative heat transfer in a superconducting circuit. <i>Nature Communications</i> , 2020, 11, 4326.	12.8	25

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19	Thermally pumped on-chip maser. <i>Physical Review B</i> , 2020, 102, .	3.2	5
20	Spatial and energy resolution of electronic states by shot noise. <i>Physical Review B</i> , 2020, 102, .	3.2	10
21	Optimized Proximity Thermometer for Ultrasensitive Detection. <i>Physical Review Applied</i> , 2020, 13, .	3.8	5
22	Active Quasiparticle Suppression in a Non-Equilibrium Superconductor. <i>Nano Letters</i> , 2020, 20, 5065-5071.	9.1	12
23	Modification of electron-phonon coupling by micromachining and suspension. <i>Journal of Applied Physics</i> , 2020, 127, .	2.5	5
24	Heat rectification via a superconducting artificial atom. <i>Communications Physics</i> , 2020, 3, .	5.3	80
25	Reaching the ultimate energy resolution of a quantum detector. <i>Nature Communications</i> , 2020, 11, 367.	12.8	51
26	Quantum Trajectory Analysis of Single Microwave Photon Detection by Nanocalorimetry. <i>Physical Review Letters</i> , 2020, 124, 170601.	7.8	16
27	Speeding up a quantum refrigerator via counterdiabatic driving. <i>Physical Review B</i> , 2019, 100, .	3.2	31
28	Detecting parity effect in a superconducting device in the presence of parity switches. <i>Physical Review B</i> , 2019, 100, .	3.2	8
29	Utilization of the superconducting transition for characterizing low-quality-factor superconducting resonators. <i>Applied Physics Letters</i> , 2019, 115, 022601.	3.3	5
30	Crossover between Electron-Phonon and Boundary-Resistance Limits to Thermal Relaxation in Copper Films. <i>Physical Review Applied</i> , 2019, 12, .	3.8	12
31	Supremacy of incoherent sudden cycles. <i>Physical Review B</i> , 2019, 100, .	3.2	23
32	Photonic heat transport across a Josephson junction. <i>Physical Review B</i> , 2019, 100, .	3.2	13
33	Universal First-Passage-Time Distribution of Non-Gaussian Currents. <i>Physical Review Letters</i> , 2019, 122, 230602.	7.8	17
34	Optimal Probabilistic Work Extraction beyond the Free Energy Difference with a Single-Electron Device. <i>Physical Review Letters</i> , 2019, 122, 150604.	7.8	34
35	Hybrid master equation for calorimetric measurements. <i>Physical Review A</i> , 2019, 99, .	2.5	5
36	Extreme reductions of entropy in an electronic double dot. <i>Physical Review B</i> , 2019, 99, .	3.2	18

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37	Electronic structure of a mesoscopic superconducting disk: Quasiparticle tunneling between the giant vortex core and the disk edge. <i>Physical Review B</i> , 2019, 99, .	3.2	1
38	Nonlinear thermovoltage in a single-electron transistor. <i>Physical Review B</i> , 2019, 99, .	3.2	13
39	Fast and accurate Cooper pair pump. <i>Physical Review B</i> , 2019, 100, .	3.2	9
40	Magnetometry with Low-Resistance Proximity Josephson Junction. <i>Journal of Low Temperature Physics</i> , 2018, 191, 344-353.	1.4	3
41	Fast thermometry with a proximity Josephson junction. <i>Applied Physics Letters</i> , 2018, 112, .	3.3	29
42	Thermodynamic fingerprints of non-Markovianity in a system of coupled superconducting qubits. <i>Physical Review A</i> , 2018, 97, .	2.5	24
43	Anomalous electronic heat capacity of copper nanowires at sub-Kelvin temperatures. <i>Physical Review B</i> , 2018, 97, .	3.2	14
44	Noninvasive Thermometer Based on the Zero-Bias Anomaly of a Superconducting Junction for Ultrasensitive Calorimetry. <i>Physical Review Applied</i> , 2018, 10, .	3.8	25
45	Nanoscale quantum calorimetry with electronic temperature fluctuations. <i>Physical Review B</i> , 2018, 98, .	3.2	18
46	Quantum Noise of Electron-Phonon Heat Current. <i>Journal of Low Temperature Physics</i> , 2018, 191, 373-379.	1.4	13
47	Absorption refrigerators based on Coulomb-coupled single-electron systems. <i>Physical Review B</i> , 2018, 98, .	3.2	49
48	Tunable photonic heat transport in a quantum heat valve. <i>Nature Physics</i> , 2018, 14, 991-995.	16.7	158
49	Model for calorimetric measurements in an open quantum system. <i>Physical Review A</i> , 2018, 97, .	2.5	12
50	Determining the parameters of a random telegraph signal by digital low pass filtering. <i>Applied Physics Letters</i> , 2018, 112, .	3.3	4
51	Reversing the Landauer's erasure: Single-electron Maxwell's demon operating at the limit of thermodynamic efficiency. <i>Physica Status Solidi (B): Basic Research</i> , 2017, 254, 1600677.	1.5	7
52	Thermal conductance of Nb thin films at sub-kelvin temperatures. <i>Scientific Reports</i> , 2017, 7, 41728.	3.3	10
53	Noise of a superconducting magnetic flux sensor based on a proximity Josephson junction. <i>Scientific Reports</i> , 2017, 7, 8011.	3.3	11
54	Multiplexing Superconducting Qubit Circuit for Single Microwave Photon Generation. <i>Journal of Low Temperature Physics</i> , 2017, 189, 60-75.	1.4	6

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55	Thermal Conductance of a Single-Electron Transistor. <i>Physical Review Letters</i> , 2017, 119, 077701.	7.8	66
56	Interplay of the Inverse Proximity Effect and Magnetic Field in Out-of-Equilibrium Single-Electron Devices. <i>Physical Review Applied</i> , 2017, 7, .	3.8	6
57	Experimental Determination of Dynamical Lee-Yang Zeros. <i>Physical Review Letters</i> , 2017, 118, 180601.	7.8	77
58	Tunable quasiparticle trapping in Meissner and vortex states of mesoscopic superconductors. <i>Nature Communications</i> , 2016, 7, 10977.	12.8	36
59	Milling a silicon nitride membrane by focused ion beam. <i>Journal of Vacuum Science and Technology B: Nanotechnology and Microelectronics</i> , 2016, 34, .	1.2	6
60	Distribution of current fluctuations in a bistable conductor. <i>Physical Review B</i> , 2016, 94, .	3.2	18
61	InAs Nanowire with Epitaxial Aluminum as a Single-Electron Transistor with Fixed Tunnel Barriers. <i>Physical Review Applied</i> , 2016, 6, .	3.8	14
62	Fluctuation relation for qubit calorimetry. <i>Physical Review E</i> , 2016, 94, 062127.	2.1	6
63	Accurate Coulomb blockade thermometry up to 60 kelvin. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2016, 374, 20150052.	3.4	17
64	Dispersive Thermometry with a Josephson Junction Coupled to a Resonator. <i>Physical Review Applied</i> , 2016, 6, .	3.8	34
65	Energy fluctuations of a finite free-electron Fermi gas. <i>Physical Review E</i> , 2016, 94, 022123.	2.1	6
66	Cascade Electronic Refrigerator Using Superconducting Tunnel Junctions. <i>Physical Review Applied</i> , 2016, 6, .	3.8	15
67	Maxwell's demon based on a single qubit. <i>Physical Review B</i> , 2016, 93, .	3.2	28
68	Otto refrigerator based on a superconducting qubit: Classical and quantum performance. <i>Physical Review B</i> , 2016, 94, .	3.2	115
69	Finite-Size Bath in Qubit Thermodynamics. <i>Journal of Low Temperature Physics</i> , 2016, 184, 1015-1029.	1.4	18
70	Tunnel-Junction Thermometry Down to Millikelvin Temperatures. <i>Physical Review Applied</i> , 2015, 4, .	3.8	42
71	Statistics of heat exchange between two resistors. <i>Physical Review B</i> , 2015, 92, .	3.2	11
72	Dephasing and dissipation in qubit thermodynamics. <i>Physical Review E</i> , 2015, 91, 062109.	2.1	10

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73	On-Chip Maxwell's Demon as an Information-Powered Refrigerator. <i>Physical Review Letters</i> , 2015, 115, 260602.	7.8	229
74	Entropy production in a non-Markovian environment. <i>Physical Review E</i> , 2015, 92, 012107.	2.1	26
75	Charge-vortex interplay in a superconducting Coulomb-blockaded island. <i>Physical Review B</i> , 2015, 92, .	3.2	2
76	Fast Electron Thermometry for Ultrasensitive Calorimetric Detection. <i>Physical Review Applied</i> , 2015, 3, .	3.8	105
77	Fluctuation relations for driven coupled classical two-level systems with incomplete measurements. <i>Physical Review E</i> , 2015, 91, 012145.	2.1	14
78	Towards quantum thermodynamics in electronic circuits. <i>Nature Physics</i> , 2015, 11, 118-123.	16.7	281
79	Work and heat for two-level systems in dissipative environments: Strong driving and non-Markovian dynamics. <i>Physical Review B</i> , 2015, 91, .	3.2	43
80	Nonequilibrium fluctuations in quantum heat engines: theory, example, and possible solid state experiments. <i>New Journal of Physics</i> , 2015, 17, 035012.	2.9	168
81	Incomplete measurement of work in a dissipative two level system. <i>New Journal of Physics</i> , 2015, 17, 055014.	2.9	33
82	Multifractality of random eigenfunctions and generalization of Jarzynski equality. <i>Nature Communications</i> , 2015, 6, 7010.	12.8	10
83	Experimental realization of a Coulomb blockade refrigerator. <i>Physical Review B</i> , 2014, 90, .	3.2	27
84	Moments of work in the two-point measurement protocol for a driven open quantum system. <i>Physical Review B</i> , 2014, 90, .	3.2	28
85	Distribution of entropy production in a single-electron box. <i>Nature Physics</i> , 2013, 9, 644-648.	16.7	97
86	Excitation of Single Quasiparticles in a Small Superconducting Al Island Connected to Normal-Metal Leads by Tunnel Junctions. <i>Physical Review Letters</i> , 2013, 111, 147001.	7.8	40
87	Single-electron current sources: Toward a refined definition of the ampere. <i>Reviews of Modern Physics</i> , 2013, 85, 1421-1472.	45.6	285
88	Work and its fluctuations in a driven quantum system. <i>Physical Review B</i> , 2013, 87, .	3.2	52
89	Quantum Jump Approach for Work and Dissipation in a Two-Level System. <i>Physical Review Letters</i> , 2013, 111, 093602.	7.8	127
90	Trapping hot quasi-particles in a high-power superconducting electronic cooler. <i>New Journal of Physics</i> , 2013, 15, 085013.	2.9	36

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91	Calorimetric measurement of work in a quantum system. <i>New Journal of Physics</i> , 2013, 15, 115006.	2.9	88
92	Heat transport through a Josephson junction. <i>Physical Review B</i> , 2013, 87, .	3.2	42
93	Dissipated work and fluctuation relations for non-equilibrium single-electron transitions. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2013, 2013, P02033.	2.3	10
94	Probing quasiparticle excitations in a hybrid single electron transistor. <i>Applied Physics Letters</i> , 2012, 100, .	3.3	37
95	Test of the Jarzynski and Crooks Fluctuation Relations in an Electronic System. <i>Physical Review Letters</i> , 2012, 109, 180601.	7.8	171
96	Work, Free Energy and Dissipation in Voltage Driven Single-Electron Transitions. <i>Journal of Low Temperature Physics</i> , 2012, 169, 70-76.	1.4	10
97	Micrometre-scale refrigerators. <i>Reports on Progress in Physics</i> , 2012, 75, 046501.	20.1	152
98	Vanishing quasiparticle density in a hybrid Al/Cu/Al single-electron transistor. <i>Physical Review B</i> , 2012, 85, .	3.2	83
99	Real-Time Observation of Discrete Andreev Tunneling Events. <i>Physical Review Letters</i> , 2011, 106, 217003.	7.8	50
100	Statistics of the dissipated energy in driven single-electron transitions. <i>Europhysics Letters</i> , 2011, 96, 67004.	2.0	41
101	Magnetic-field-induced stabilization of nonequilibrium superconductivity in a normal-metal/insulator/superconductor junction. <i>Physical Review B</i> , 2011, 84, .	3.2	30
102	Substrate-dependent quasiparticle recombination time in superconducting resonators. <i>Applied Physics Letters</i> , 2011, 99, 062509.	3.3	21
103	Environment-Assisted Tunneling as an Origin of the Dynes Density of States. <i>Physical Review Letters</i> , 2010, 105, 026803.	7.8	153
104	Thermal Conductance by the Inverse Proximity Effect in a Superconductor. <i>Physical Review Letters</i> , 2010, 105, 097004.	7.8	27
105	Violation of the Fluctuation-Dissipation Theorem in Time-Dependent Mesoscopic Heat Transport. <i>Physical Review Letters</i> , 2010, 104, 220601.	7.8	48
106	Periodicity in Al/Ti superconducting single electron transistors. <i>Applied Physics Letters</i> , 2009, 95, 052503.	3.3	8
107	Electronic Refrigeration at the Quantum Limit. <i>Physical Review Letters</i> , 2009, 102, 200801.	7.8	82
108	Recombination-Limited Energy Relaxation in a Bardeen-Cooper-Schrieffer Superconductor. <i>Physical Review Letters</i> , 2009, 102, 017003.	7.8	85

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109	Violation of the Wiedemann-Franz Law in a Single-Electron Transistor. Physical Review Letters, 2008, 100, 066801.	7.8	174
110	Nonadiabatic Charge Pumping in a Hybrid Single-Electron Transistor. Physical Review Letters, 2008, 101, 066801.	7.8	67
111	Parity effect in Al and Nb single electron transistors in a tunable environment. Applied Physics Letters, 2007, 91, 063512.	3.3	10
112	Heat Transistor: Demonstration of Gate-Controlled Electronic Refrigeration. Physical Review Letters, 2007, 99, 027203.	7.8	135
113	Opportunities for mesoscopies in thermometry and refrigeration: Physics and applications. Reviews of Modern Physics, 2006, 78, 217-274.	45.6	890
114	Thermal budget of superconducting digital circuits at subkelvin temperatures. Journal of Applied Physics, 2006, 99, 084501.	2.5	43
115	Single-mode heat conduction by photons. Nature, 2006, 444, 187-190.	27.8	236
116	Electron Thermalization in Metallic Islands Probed by Coulomb Blockade Thermometry. Journal of Low Temperature Physics, 2004, 134, 1119-1143.	1.4	34
117	Fabrication of mesoscopic superconducting Nb wires using conventional electron-beam lithographic techniques. Journal of Vacuum Science & Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena, 2002, 20, 386.	1.6	25
118	Integrated SINIS refrigerators for efficient cooling of cryogenic detectors. , 2002, , .		7
119	Coulomb Blockade Thermometry in the Milli-Kelvin Temperature Range in High Magnetic Fields. Journal of Low Temperature Physics, 2002, 128, 263-269.	1.4	10
120	Noise in Refrigerating Tunnel Junctions and in Microbolometers. Journal of Low Temperature Physics, 2001, 123, 197-218.	1.4	22
121	Performance of cryogenic microbolometers and calorimeters with on-chip coolers. Applied Physics Letters, 2001, 78, 556-558.	3.3	13
122	Silicon Single Electron Transistors with Single and Multi Dot Characteristics. Materials Research Society Symposia Proceedings, 2000, 638, 1.	0.1	0
123	On-Chip Refrigeration by Evaporation of Hot Electrons at Sub-Kelvin Temperatures. Journal of Low Temperature Physics, 2000, 120, 281-290.	1.4	32
124	Heat capacity of mesoscopic superconducting disks. Europhysics Letters, 2000, 50, 649-655.	2.0	10
125	Trapping of quasiparticles of a nonequilibrium superconductor. Applied Physics Letters, 2000, 76, 2782-2784.	3.3	64
126	Wide-range thermometer based on the temperature-dependent conductance of planar tunnel junctions. Applied Physics Letters, 2000, 77, 2915-2917.	3.3	16

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127	One- and two-dimensional tunnel junction arrays in weak Coulomb blockade regime: Absolute accuracy in thermometry. Applied Physics Letters, 2000, 76, 3747-3749.	3.3	11
128	Influence of magnetic field on cooling by normal-insulator-superconductor junctions. Journal of Applied Physics, 2000, 88, 326-330.	2.5	4
129	Cooling of a superconductor by quasiparticle tunneling. Applied Physics Letters, 1999, 74, 3020-3022.	3.3	29
130	Coulomb blockade-based nanothermometry in strong magnetic fields. Journal of Applied Physics, 1998, 83, 5582-5584.	2.5	18
131	Fabrication and characterization of small tunnel junctions through a thin dielectric membrane. Applied Physics Letters, 1998, 73, 2369-2371.	3.3	2
132	Thermal characteristics of silicon nitride membranes at sub-Kelvin temperatures. Applied Physics Letters, 1998, 72, 1305-1307.	3.3	85
133	Refrigeration of a dielectric membrane by superconductor/insulator/normal-metal/insulator/superconductor tunneling. Applied Physics Letters, 1997, 70, 1885-1887.	3.3	42
134	One dimensional arrays and solitary tunnel junctions in the weak coulomb blockade regime: CBT thermometry. Journal of Low Temperature Physics, 1997, 108, 191-215.	1.4	57
135	Efficient Peltier refrigeration by a pair of normal metal/insulator/superconductor junctions. Applied Physics Letters, 1996, 68, 1996-1998.	3.3	236
136	Coulomb blockade thermometry. European Physical Journal D, 1996, 46, 3345-3352.	0.4	6
137	Microrefrigeration by NIS tunnel junctions. European Physical Journal D, 1996, 46, 2763-2764.	0.4	2
138	Background charge fluctuations in SET-transistors. European Physical Journal D, 1996, 46, 2293-2294.	0.4	7
139	Hot electron effects in metallic single electron components. European Physical Journal D, 1996, 46, 2295-2296.	0.4	0
140	IV-Curves of tunnel junction arrays at lowered temperature by numerical simulation. European Physical Journal D, 1996, 46, 591-592.	0.4	0
141	Numerical investigation of one-dimensional tunnel junction arrays at temperatures above the Coulomb blockade regime. Journal of Applied Physics, 1996, 80, 256-263.	2.5	23
142	Electron-phonon heat transport in arrays of Al islands with submicrometer-sized tunnel junctions. Physical Review B, 1996, 54, R8353-R8356.	3.2	25
143	Arrays of normal metal tunnel junctions in weak Coulomb blockade regime. Applied Physics Letters, 1995, 67, 2096-2098.	3.3	63
144	Thermometry by Arrays of Tunnel Junctions. Physical Review Letters, 1994, 73, 2903-2906.	7.8	205

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145	Influence of device non-uniformities on the accuracy of Coulomb blockade thermometry. Metrologia, 0, , .	1.2	1