

# Kamran Behnia

## List of Publications by Year in descending order

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155  
papers

6,676  
citations

53660

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160  
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160  
docs citations

160  
times ranked

5292  
citing authors

#	ARTICLE	IF	CITATIONS
1	Boundary conductance in macroscopic bismuth crystals. <i>Nature Communications</i> , 2022, 13, 189.	5.8	6
2	On the Origin and the Amplitude of $T^2$ Square Resistivity in Fermi Liquids. <i>Annalen Der Physik</i> , 2022, 534, .	0.9	10
3	What is measured when measuring a thermoelectric coefficient?. <i>Comptes Rendus Physique</i> , 2022, 23, 25-40.	0.3	0
4	On the dynamic distinguishability of nodal quasi-particles in overdoped cuprates. <i>SciPost Physics</i> , 2022, 12, .	1.5	3
5	Magneto-Seebeck effect in bismuth. <i>Physical Review B</i> , 2022, 105, .	1.1	4
6	Thermal conductivity of bulk $\text{In}_2\text{O}_3$ single crystals. <i>Physical Review Materials</i> , 2021, 5, .	0.9	9
7	Universal Bound to the Amplitude of the Vortex Nernst Signal in Superconductors. <i>Physical Review Letters</i> , 2021, 126, 077001.	2.9	11
8	Wide Critical Fluctuations of the Field-Induced Phase Transition in Graphite. <i>Physical Review Letters</i> , 2021, 126, 106801.	2.9	4
9	A Monomaterial Nernst Thermopile with Hermaphroditic Legs. <i>Advanced Materials</i> , 2021, 33, e2100751.	11.1	16
10	Positive Seebeck Coefficient in Highly Doped $\text{La}_2\text{SrCu}_4\text{O}_{10}$ ( $x = 0.33$ ); Its Origin and Implication. <i>Journal of the Physical Society of Japan</i> , 2021, 90, 053702.	0.7	7
11	Quasi-isotropic orbital magnetoresistance in lightly doped $\text{SrTiO}_3$ . <i>Physical Review Materials</i> , 2021, 5, .	0.7	3
12	Non-universal current flow near the metal-insulator transition in an oxide interface. <i>Nature Communications</i> , 2021, 12, 3311.	5.8	9
13	Thermal diffusivity and its lower bound in orthorhombic SnSe. <i>Physical Review B</i> , 2021, 104, .	1.1	4
14	Nanoscale Turing patterns in a bismuth monolayer. <i>Nature Physics</i> , 2021, 17, 1031-1036.	6.5	35
15	Quantum oscillations, magnetic breakdown and thermal Hall effect in $\text{Co}_3\text{Sn}_2\text{S}_2$ . <i>Journal Physics D: Applied Physics</i> , 2021, 54, 454003.	1.3	12
16	Thermal resistivity and hydrodynamics of the degenerate electron fluid in antimony. <i>Nature Communications</i> , 2021, 12, 195.	5.8	26
17	Critical point for Bose-Einstein condensation of excitons in graphite. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2020, 117, 30215-30219.	3.3	9
18	Heavy Nondegenerate Electrons in Doped Strontium Titanate. <i>Physical Review X</i> , 2020, 10, .	2.8	24

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19	T-square resistivity without Umklapp scattering in dilute metallic Bi <sub>2</sub> O <sub>2</sub> Se. Nature Communications, 2020, 11, 3846.	5.8	26
20	Finite-temperature violation of the anomalous transverse Wiedemann-Franz law. Science Advances, 2020, 6, eaaz3522.	4.7	50
21	Anomalous transverse response of $\text{Co}_2$ and universality of the room-temperature $\hat{\mu}_\pm$ . Physical Review B, 2020, 101, .	1.1	59
22	Phonon Thermal Hall Effect in Strontium Titanate. Physical Review Letters, 2020, 124, 105901.	2.9	82
23	Phonon hydrodynamics and ultrahigh room-temperature thermal conductivity in thin graphite. Science, 2020, 367, 309-312.	6.0	99
24	Giant Seebeck effect across the field-induced metal-insulator transition of InAs. Npj Quantum Materials, 2020, 5, .	1.8	8
25	Planar Hall effect caused by the memory of antiferromagnetic domain walls in Mn <sub>3</sub> Ge. Applied Physics Letters, 2020, 117, .	1.5	7
26	Chiral domain walls of Mn <sub>3</sub> Sn and their memory. Nature Communications, 2019, 10, 3021.	5.8	58
27	Thermalization and possible signatures of quantum chaos in complex crystalline materials. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 19869-19874.	3.3	16
28	Graphite in 90Å: Evidence for Strong-Coupling Excitonic Pairing. Physical Review X, 2019, 9, .	2.8	8
29	A lower bound to the thermal diffusivity of insulators. Journal of Physics Condensed Matter, 2019, 31, 405702.	0.7	23
30	Ferroelectric order versus metallicity in $\text{Sr}_{1-x}\text{Ca}_x\text{TiO}_3$ .		

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37	Evidence of Incoherent Carriers Associated with Resonant Impurity Levels and Their Influence on Superconductivity in the Anomalous Superconductor $\text{Pb}_{1-x}\text{Sn}_x\text{Te}$ . <i>Physical Review Letters</i> , 2018, 121, 207001.	2.9	12
38	Observation of Poiseuille flow of phonons in black phosphorus. <i>Science Advances</i> , 2018, 4, eaat3374.	4.7	51
39	Magnetoconductance and valley degree of freedom in bulk bismuth. <i>Journal of Physics Condensed Matter</i> , 2018, 30, 313001.	0.7	24
40	Nernst effect studies of Cooper pair fluctuations. <i>Physica C: Superconductivity and Its Applications</i> , 2018, 552, 38-41.	0.6	0
41	Magnetoconductance of semimetals: The case of antimony. <i>Physical Review Materials</i> , 2018, 2, .	0.9	26
42	Momentum-space and real-space Berry curvatures in $\text{Mn}_3\text{Sn}$ . , 2018, 5, .		25
43	The fragility of distant Cooper pairs. <i>Science</i> , 2017, 355, 26-27.	6.0	5
44	A ferroelectric quantum phase transition inside the superconducting dome of $\text{Sr}_{1-x}\text{Ca}_x\text{TiO}_3$ . <i>Nature Physics</i> , 2017, 13, 643-648.	6.5	160
45	Emptying Dirac valleys in bismuth using high magnetic fields. <i>Nature Communications</i> , 2017, 8, 15297.	5.8	34
46	Metallicity without quasi-particles in room-temperature strontium titanate. <i>Npj Quantum Materials</i> , 2017, 2, .	1.8	39
47	Anomalous Nernst and Righi-Leduc Effects in $\text{Mn}_3\text{Sn}$ : Berry Curvature and Entropy Flow. <i>Physical Review Letters</i> , 2017, 119, 056601.	2.9	212
48	Picky about orientation. <i>Nature Physics</i> , 2017, 13, 111-112.	6.5	2
49	The Mysterious Source of Current-Induced Entropy in $\text{Ca}_2\text{RuO}_4$ . <i>JPSJ News and Comments</i> , 2017, 14, 10.	0.2	0
50	Superfluid density and carrier concentration across a superconducting dome: The case of strontium titanate. <i>Physical Review B</i> , 2017, 96, .	1.1	31
51	Nonmonotonic anisotropy in charge conduction induced by antiferrodistortive transition in metallic $\text{SrTiO}_3$ . <i>Physical Review Letters</i> , 2016, 116, 087003.	1.1	23
52	Colossal Seebeck Coefficient of Hopping Electrons in $\text{Mn}_3\text{Sn}$ . <i>Physical Review Letters</i> , 2016, 116, 087003.	2.9	13
53	Nernst effect in metals and superconductors: a review of concepts and experiments. <i>Reports on Progress in Physics</i> , 2016, 79, 046502.	8.1	144
54	Finding merit in dividing neighbors. <i>Science</i> , 2016, 351, 124-124.	6.0	18

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55	$\text{wave superconductivity in optimally doped SrTiO}_3 \text{ unveiled}$	1.1	24
56	Origin of the Large Anisotropic Factor of Holes in Bismuth. Physical Review Letters, 2015, 115, 216401.	2.9	34
57	Electrons Travel Between Loosely Bound Layers. Physics Magazine, 2015, 8, .	0.1	1
58	On mobility of electrons in a shallow Fermi sea over a rough seafloor. Journal of Physics Condensed Matter, 2015, 27, 375501.	0.7	23
59	Electron "Hole Pairing in Presence of a Strong Magnetic Field in Graphite. JPSJ News and Comments, 2015, 12, 05.	0.2	3
60	Angle Dependence of the Orbital Magnetoresistance in Bismuth. Physical Review X, 2015, 5, .	2.8	50
61	Quantum Oscillations, Thermoelectric Coefficients, and the Fermi Surface of Semimetallic $\text{WTe}_2$ . Physical Review Letters, 2015, 114, 176601.	2.9	198
62	Scalable $T^2$ resistivity in a small single-component Fermi surface. Science, 2015, 349, 945-948.	6.0	106
63	The Semiclassical Picture. , 2015, , 18-32.		0
64	Experimental Survey III: Correlated Metals. , 2015, , 121-172.		0
65	Magnetothermoelectricity. , 2015, , 44-56.		0
66	Experimental Survey II: Narrow-Gap Semiconductors. , 2015, , 105-120.		0
67	New Frontiers. , 2015, , 193-212.		0
68	Superconductivity and Thermoelectric Phenomena. , 2015, , 173-192.		0
69	Non-Diffusive Thermoelectricity. , 2015, , 33-43.		0
70	The Thermal Wave-Length and Fermi-Liquid Thermoelectricity. , 2015, , 57-72.		0
71	Experimental Survey I: The Periodic Table. , 2015, , 73-104.		0
72	Thermodynamic evidence for valley-dependent density of states in bulk bismuth. Nature Materials, 2014, 13, 461-465.	13.3	44

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73	Critical Doping for the Onset of a Two-Band Superconducting Ground State in $\text{SrTiO}_3$ . Physical Review B, 2014, 90, .	2.9	132
74	Multiple Nodeless Superconducting Gaps in Optimally Doped $\text{SrTiO}_3$ . Physical Review B, 2014, 90, .	1.1	30
75	Fermi Surface of the Most Dilute Superconductor. Physical Review X, 2013, 3, .	2.8	91
76	Two Phase Transitions Induced by a Magnetic Field in Graphite. Physical Review Letters, 2013, 110, 266601.	2.9	51
77	Magnetothermoelectric properties of $\text{Bi}_2\text{Se}_3$ . Physical Review B, 2013, 87, .	1.1	49
78	Characterization of the Mysterious High Field Ordered Phase around $\text{H} \approx 111$ and Finding of a New Phase Boundary in $\text{PrFe}_4\text{P}_{12}$ . Journal of the Physical Society of Japan, 2012, 81, 084703.	0.7	2
79	Landau spectrum and twin boundaries of bismuth in the extreme quantum limit. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 14813-14818.	3.3	31
80	Polarized light boosts valleytronics. Nature Nanotechnology, 2012, 7, 488-489.	15.6	121
81	Field-induced polarization of Dirac valleys in bismuth. Nature Physics, 2012, 8, 89-94.	6.5	240
82	Strong correlation and low carrier density in $\text{FeTe}_{1-y}\text{Se}_y$ . Physical Review B, 2011, 83, .	1.1	42
83	Nernst Response of the Landau Tubes in Graphite across the Quantum Limit. Physical Review Letters, 2011, 106, 246405.	2.9	13
84	Angle-resolved Landau spectrum of electrons and holes in bismuth. Physical Review B, 2011, 84, .	1.1	69
85	Thermoelectric evidence for high-field anomalies in the hidden order phase of $\text{URu}_2\text{Si}_2$ . Physical Review B, 2011, 83, .	1.1	19
86	Nernst quantum oscillations in bulk semi-metals. Journal of Physics Condensed Matter, 2011, 23, 094204.	0.7	6
87	Nernst effect and dimensionality in the quantum limit. Nature Physics, 2010, 6, 26-29.	6.5	68
88	Comment on "Signatures of Surface States in Bismuth at High Magnetic Fields". Physical Review Letters, 2010, 104, 059705; author reply 059706.	2.9	6
89	Phase diagram of bismuth in the extreme quantum limit. Nature Communications, 2010, 1, 47.	5.8	32
90	Hall plateaus at magic angles in bismuth beyond the quantum limit. Physical Review B, 2009, 79, .	1.1	19

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91	Anisotropic inelastic scattering and its interplay with superconductivity in $URu_2Si_2$ . Physical Review B, 2009, 80, .	1.1	24
92	Electronic instability in bismuth far beyond the quantum limit. New Journal of Physics, 2009, 11, 113012.	1.2	39
93	On the destruction of the hidden order in $URu_2Si_2$ by a strong magnetic field. Europhysics Letters, 2009, 85, 27003.	0.7	22
94	The Nernst effect and the boundaries of the Fermi liquid picture. Journal of Physics Condensed Matter, 2009, 21, 113101.	0.7	150
95	Vortex lattice melting in the heavy-fermion superconductor $URu_2Si_2$ . Physica C: Superconductivity and Its Applications, 2008, 468, 1258-1261.	0.6	1
96	Non-Fermi liquid behavior in the magnetotransport of quasi two-dimensional heavy Fermion compounds $CeMn_5$ . Journal of Physics and Chemistry of Solids, 2008, 69, 3261-3264.	1.9	0
97	Exotic superconducting state embedded in the hidden order of. Journal of Physics and Chemistry of Solids, 2008, 69, 3187-3190.	1.9	1
98	Pressure effect on the magnetic field-temperature phase diagram of. Physica B: Condensed Matter, 2008, 403, 749-751.	1.3	4
99	Transport anomalies across the quantum limit in semimetallic $Bi_2$ . Physical Review B, 2008, 78, .	1.1	37
100	Nernst effect in the phase-fluctuating superconductor $InO_x$ . Europhysics Letters, 2008, 83, 57005.	0.7	27
101	Elemental Complexity. Science, 2008, 321, 497-498.	6.0	4
102	Exotic Superconducting Properties in the Electron-Hole-Compensated Heavy-Fermion $URu_2Si_2$ . Physical Review Letters, 2007, 99, 116402.	2.9	183
103	Field-Induced Fermi Surface Reconstruction and Adiabatic Continuity between Antiferromagnetism and the Hidden-Order State in $URu_2Si_2$ . Physical Review Letters, 2007, 98, 166404.	2.9	66
104	Signatures of Electron Fractionalization in Ultraquantum Bismuth. Science, 2007, 317, 1729-1731.	6.0	144
105	Thermoelectric Response Near a Quantum Critical Point: The Case of $CeCoIn_5$ . Physical Review Letters, 2007, 99, 147005.	2.9	52
106	Oscillating Nernst-Ettingshausen Effect in Bismuth across the Quantum Limit. Physical Review Letters, 2007, 98, 166602.	2.9	85
107	Nernst Effect in Semimetals: The Effective Mass and the Figure of Merit. Physical Review Letters, 2007, 98, 076603.	2.9	73
108	Anomalous quasiparticle transport and superclean superconducting state of. Journal of Magnetism and Magnetic Materials, 2007, 310, 569-571.	1.0	1

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109	Giant Nernst effect in heavy-electron metals. Journal of Magnetism and Magnetic Materials, 2007, 310, 446-448.	1.0	5
110	Hall effect in the quasi two-dimensional strongly correlated metal (M=Co, Rh). Journal of Magnetism and Magnetic Materials, 2007, 310, 334-336.	1.0	0
111	Religious authorities overrule scientists in Iran. Nature, 2006, 444, 422-422.	13.7	0
112	Observation of the Nernst signal generated by fluctuating Cooper pairs. Nature Physics, 2006, 2, 683-686.	6.5	109
113	Drastic Change in Transport of Entropy with Quadrupolar Ordering in PrFe <sub>4</sub> P <sub>12</sub> . Physical Review Letters, 2006, 96, 176402.	2.9	36
114	Comment on "Nernst Effect in Poor Conductors and in the Cuprate Superconductors". Physical Review Letters, 2005, 95, 259703; author reply 259704.	2.9	6
115	Line Nodes in the Superconducting Gap Function of Noncentrosymmetric CePt <sub>3</sub> Si. Physical Review Letters, 2005, 94, 197002.	2.9	165
116	Thermal Transport in the Hidden-Order State of URu <sub>2</sub> Si <sub>2</sub> . Physical Review Letters, 2005, 94, 156405.	2.9	89
117	Heat transport in Bi <sub>2-x</sub> Sr <sub>2x</sub> CuO <sub>6-δ</sub> : Departure from the Wiedemann-Franz law in the vicinity of the metal-insulator transition. Physical Review B, 2005, 72, .	1.1	37
118	On the thermoelectricity of correlated electrons in the zero-temperature limit. Journal of Physics Condensed Matter, 2004, 16, 5187-5198.	0.7	260
119	Test of the Wiedemann-Franz Law in an Optimally Doped Cuprate. Physical Review Letters, 2004, 92, 177003.	2.9	22
120	Thermoelectricity of URu <sub>2</sub> Si <sub>2</sub> : Giant Nernst effect in the hidden-order state. Physical Review B, 2004, 70, .	1.1	73
121	Measuring thermal conductivity in extreme conditions: Sub-Kelvin temperatures and high (27 K) magnetic fields. Review of Scientific Instruments, 2004, 75, 273-275.	0.6	7
122	Giant Nernst Effect in CeCoIn <sub>5</sub> . Physical Review Letters, 2004, 92, 217002.	2.9	102
123	Ambipolar Nernst Effect in NbSe <sub>2</sub> . Physical Review Letters, 2003, 91, 066602.	2.9	92
124	Low- and zero-energy quasiparticle heat transport in high-T <sub>c</sub> superconductors. Journal of Physics and Chemistry of Solids, 2002, 63, 1065-1068.	1.9	1
125	Charged with smuggling heat. Nature, 2001, 414, 696-697.	13.7	3
126	Pairing and vortex states in Sr <sub>2</sub> RuO <sub>4</sub> studied by Hall probe magnetometry. Physica B: Condensed Matter, 2000, 284-288, 543-544.	1.3	4



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127	Effect of controlled disorder on thermal conductivity of Bi2212. Physica C: Superconductivity and Its Applications, 2000, 341-348, 1809-1812.	0.6	1
128	Internal avalanches in a pile of superconducting vortices. Physical Review B, 2000, 61, R3815-R3818.	1.1	33
129	Absence of Residual Quasiparticle Conductivity in the Underdoped Cuprate YBa <sub>2</sub> Cu <sub>4</sub> O <sub>8</sub> . Physical Review Letters, 2000, 85, 4140-4143.	2.9	31
130	Evidence for Field-Induced Excitations in Low-Temperature Thermal Conductivity of Bi <sub>2</sub> Sr <sub>2</sub> CaCu <sub>2</sub> O <sub>8</sub> . Physical Review Letters, 1999, 82, 624-627.	2.9	77
131	Symmetry of the superconducting order parameter in Bechgaard salts. Synthetic Metals, 1999, 103, 2030-2033.	2.1	2
132	Heat conduction in $\kappa$ -(BEDT-TTF) <sub>2</sub> X superconductors. Synthetic Metals, 1999, 103, 2046-2047.	2.1	6
133	Heat Conduction in $\kappa$ -(BEDT-TTF) <sub>2</sub> Cu(NCS) <sub>2</sub> . Physical Review Letters, 1998, 81, 4728-4731.	2.9	99
134	Balicaset al.Reply:. Physical Review Letters, 1997, 78, 984-984.	2.9	7
135	Thermal Conductivity of Superconducting (TMTSF) <sub>2</sub> ClO <sub>4</sub> : Evidence for a Nodeless Gap. Physical Review Letters, 1997, 79, 2125-2128.	2.9	120
136	Angular Position of Nodes in the Superconducting Gap of YBCO. Physical Review Letters, 1997, 78, 2624-2627.	2.9	119
137	Universal Heat Conduction in YBa <sub>2</sub> Cu <sub>3</sub> O <sub>6.9</sub> . Physical Review Letters, 1997, 79, 483-486.	2.9	200
138	Quasi-particle vortex scattering in UPt <sub>3</sub> . Physics Letters, Section A: General, Atomic and Solid State Physics, 1997, 234, 64-68.	0.9	15
139	Confinement in Bechgaard Salts: Anomalous Magnetoresistance and Nuclear Relaxation. Physical Review Letters, 1995, 74, 5272-5275.	2.9	52
140	Fermi-Surface Instabilities in the Organic Conductor (TMTSF) <sub>2</sub> NO <sub>3</sub> : High-Pressure Studies. Europhysics Letters, 1995, 29, 635-640.	0.7	12
141	Anisotropic Magnetoresistance of Metallic (TMTTF) <sub>2</sub> Br. Europhysics Letters, 1995, 32, 73-77.	0.7	0
142	(TM) <sub>2</sub> X organic superconductors: interplay between 1-D charge localization and higher dimensionality cross-over. Synthetic Metals, 1995, 70, 719-725.	2.1	20
143	Commensurability effects in the magnetoresistance of (TMTSF) <sub>2</sub> PF <sub>6</sub> . Synthetic Metals, 1995, 70, 743-746.	2.1	0
144	Fermi surface and physical properties of (TMTSF) <sub>2</sub> NO <sub>3</sub> . Synthetic Metals, 1995, 70, 755-756.	2.1	2

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145	Low-temperature in-plane thermal conductivity of untwinned YBa <sub>2</sub> Cu <sub>3</sub> O <sub>6.9</sub> crystals. Synthetic Metals, 1995, 71, 1611-1612.	2.1	8
146	Lebed Resonance Effects in the Metallic and Spin-Density-Wave Phases of (TMTSF) <sub>2</sub> PF <sub>6</sub> . Europhysics Letters, 1994, 25, 285-290.	0.7	15
147	(TMTTF) <sub>2</sub> Br: The First Organic Superconductor in the (TMTTF) <sub>2</sub> X family. Advanced Materials, 1994, 6, 762-765.	11.1	20
148	Thermal conductivity of heavy-fermion superconductor URu <sub>2</sub> Si <sub>2</sub> . Physica C: Superconductivity and Its Applications, 1992, 196, 57-62.	0.6	10
149	Pressure induced heavy fermion superconductivity of CeCu <sub>2</sub> Ge <sub>2</sub> . Physics Letters, Section A: General, Atomic and Solid State Physics, 1992, 163, 475-480.	0.9	322
150	Thermal conductivity of superconducting UPt <sub>3</sub> versus magnetic field: probing the gap structure. Journal of Magnetism and Magnetic Materials, 1992, 108, 133-134.	1.0	10
151	Thermal conductivity of superconducting UPt <sub>3</sub> . Journal of Low Temperature Physics, 1991, 84, 261-278.	0.6	44
152	Low-field diamagnetic response of the superconducting phases in UPt <sub>3</sub> . Journal of Physics Condensed Matter, 1991, 3, 3517-3525.	0.7	23
153	Superconducting phase diagram of UPt <sub>3</sub> studied by thermal expansion and specific heat. Journal of Low Temperature Physics, 1990, 81, 299-315.	0.6	50
154	The superconducting phases of UPt <sub>3</sub> under pressure. Journal of Applied Physics, 1990, 67, 5200-5202.	1.1	18
155	Thermal properties: Thermal conductivity. , 0, , .		0