

# Thilo Bauch

## List of Publications by Year in descending order

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122  
papers

2,516  
citations

201674

27  
h-index

233421

45  
g-index

124  
all docs

124  
docs citations

124  
times ranked

2172  
citing authors

#	ARTICLE	IF	CITATIONS
1	Tuning the field in a microwave resonator faster than the photon lifetime. Applied Physics Letters, 2008, 92, .	3.3	237
2	Macroscopic Quantum Tunneling in d-Wave YBa <sub>2</sub> Cu <sub>3</sub> O <sub>7-<math>\delta</math></sub> Josephson Junctions. Physical Review Letters, 2005, 94, 087003.	7.8	151
3	Observation of bound surface states in grain-boundary junctions of high-temperature superconductors. Physical Review B, 1998, 58, 11197-11200.	3.2	120
4	Quantum Dynamics of a d-Wave Josephson Junction. Science, 2006, 311, 57-60.	12.6	108
5	Andreev bound states in high temperature superconductors. European Physical Journal B, 1998, 5, 423-438.	1.5	78
6	Collapse of Thermal Activation in Moderately Damped Josephson Junctions. Physical Review Letters, 2005, 95, 157002.	7.8	70
7	Influence of topological edge states on the properties of $Al$ Josephson devices. Physical Review B, 2014, 89, .	3.2	81
8	Uniform doping of graphene close to the Dirac point by polymer-assisted assembly of molecular dopants. Nature Communications, 2018, 9, 3956.	12.8	61
9	$YBa_2Cu_3O_{7-x}$ Nanowire Bridges Sustaining the Critical Depairing Current: Evidence of Josephson-like Physical Review Letters, 2014, 192, 057001.	7.8	58
10	Ultra low noise YBa <sub>2</sub> Cu <sub>3</sub> O <sub>7-<math>\delta</math></sub> nano superconducting quantum interference devices implementing nanowires. Applied Physics Letters, 2014, 104, .	3.3	57
11	Anticorrelation between temperature and fluctuations of the switching current in moderately damped Josephson junctions. Physical Review B, 2007, 76, .	3.2	54
12	Fully gapped superconductivity in a nanometre-size YBa <sub>2</sub> Cu <sub>3</sub> O <sub>7-<math>\delta</math></sub> island enhanced by a magnetic field. Nature Nanotechnology, 2013, 8, 25-30.	31.5	53
13	Catalyst-free vapour-phase solid technique for deposition of Bi <sub>2</sub> Te <sub>3</sub> and Bi <sub>2</sub> Se <sub>3</sub> nanowires/nanobelts with topological insulator properties. Nanoscale, 2015, 7, 15935-15944.	5.6	45
14	Magnetic field resilient superconducting fractal resonators for coupling to free spins. Journal of Applied Physics, 2012, 112, .	2.5	44
15	Improved Nanopatterning for YBCO Nanowires Approaching the Depairing Current. IEEE Transactions on Applied Superconductivity, 2013, 23, 1101505-1101505.	1.7	42
16	Are Pinholes the Cause of Excess Current in Superconducting Tunnel Junctions? A Study of Andreev Current in Highly Resistive Junctions. Physical Review Letters, 2011, 106, 097001.	7.8	40
17	Induced unconventional superconductivity on the surface states of Bi <sub>2</sub> Te <sub>3</sub> topological insulator. Nature Communications, 2017, 8, 2019.	12.8	40
18	Transport properties of ultrathin $YBa_2Cu_3O_{7-x}$ nanowires: A route to single-photon detection. Physical Review B, 2017, 96, .	3.7	37

#	ARTICLE	IF	CITATIONS
19	Approaching the theoretical depairing current in $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$ nanowires. <i>Physica C: Superconductivity and Its Applications</i> , 2013, 495, 33-38.	1.2	36
20	Probing the intrinsic Josephson coupling potential in $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_8$ superconductors by thermal activation. <i>Physical Review B</i> , 2005, 72, .	3.2	33
21	Bulk-free topological insulator $\text{Bi}_2\text{Se}_3$ nanoribbons with magnetotransport signatures of Dirac surface states. <i>Nanoscale</i> , 2018, 10, 19595-19602.	5.6	32
22	Classical resonant activation of a Josephson junction embedded in an LC circuit. <i>Physical Review B</i> , 2007, 75, .	3.2	30
23	Properties of inductance and magnetic penetration depth in (103)-oriented $\text{YBa}_2\text{Cu}_3\text{O}_7$ films. <i>Physical Review B</i> , 2009, 79, .	3.2	30
24	High-temperature superconducting nanowires for photon detection. <i>Physica C: Superconductivity and Its Applications</i> , 2015, 509, 16-21.	1.2	30
25	Asymmetric high temperature superconducting Josephson vortex flow transistors with high current gain. <i>Applied Physics Letters</i> , 1995, 67, 1010-1012.	3.3	29
26	Submicron $\text{YBaCuO}$ biepitaxial Josephson junctions: d-wave effects and phase dynamics. <i>Journal of Applied Physics</i> , 2010, 107, .	2.5	29
27	Highly homogeneous YBCO/LSMO nanowires for photoresponse experiments. <i>Superconductor Science and Technology</i> , 2014, 27, 044027.	3.5	29
28	Correlated quantization of supercurrent and conductance in a superconducting quantum point contact. <i>Physical Review B</i> , 2005, 71, .	3.2	27
29	Probing the phase diagram of cuprates with $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$ thin films and nanowires. <i>Physical Review Materials</i> , 2018, 2, .	3.4	27
30	Towards quantum-limited coherent detection of terahertz waves in charge-neutral graphene. <i>Nature Astronomy</i> , 2019, 3, 983-988.	10.1	25
31	Charge Qubit Coupled to an Intense Microwave Electromagnetic Field in a Superconducting Nb Device: Evidence for Photon-Assisted Quasiparticle Tunneling. <i>Physical Review Letters</i> , 2013, 111, 137002.	7.8	24
32	Observation of dark pulses in 10 nm thick YBCO nanostrips presenting hysteretic current voltage characteristics. <i>Superconductor Science and Technology</i> , 2017, 30, 12LT02.	3.5	24
33	Transport and noise properties of YBCO nanowire based nanoSQUIDs. <i>Superconductor Science and Technology</i> , 2019, 32, 073001.	3.5	23
34	Grooved Dayem Nanobridges as Building Blocks of High-Performance $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$ SQUID Magnetometers. <i>Nano Letters</i> , 2019, 19, 1902-1907.	9.1	23
35	A Single Electron Transistor on an Atomic Force Microscope Probe. <i>Nano Letters</i> , 2006, 6, 937-941.	9.1	22
36	Phase transition of bismuth telluride thin films grown by MBE. <i>Applied Physics Express</i> , 2014, 7, 045503.	2.4	22

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37	Josephson dynamics of bicrystal-d-wave $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$ SQUIDs. <i>Physical Review B</i> , 2006, 74, .	3.2	21
38	Topological insulator nanoribbon Josephson junctions: Evidence for size effects in transport properties. <i>Journal of Applied Physics</i> , 2020, 128, 194304.	2.5	21
39	Restored strange metal phase through suppression of charge density waves in underdoped $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$ . <i>Science</i> , 2021, 373, 1506-1510.	12.6	21
40	Physics and performance of high temperature superconducting vortex flow transistors. <i>Applied Superconductivity</i> , 1995, 3, 443-462.	0.5	20
41	Model Evidence of a Superconducting State with a Full Energy Gap in Small Cuprate Islands. <i>Physical Review Letters</i> , 2013, 110, 197001.	7.8	20
42	Properties of grooved Dayem bridge based $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$ superconducting quantum interference devices and magnetometers. <i>Applied Physics Letters</i> , 2020, 116, 132601.	3.3	20
43	Hot spot formation in electron-doped PCCO nanobridges. <i>Physical Review B</i> , 2016, 94, .	3.2	19
44	Tailoring Superconductivity in Large-Area Single-Layer $\text{NbSe}_2$ via Self-Assembled Molecular Adlayers. <i>Nano Letters</i> , 2021, 21, 136-143.	9.1	19
45	Soft Nanostructuring of YBCO Josephson Junctions by Phase Separation. <i>Nano Letters</i> , 2010, 10, 4824-4829.	9.1	18
46	Fabricating Nanogaps in $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$ . <i>Physical Review Applied</i> , 2015, 4, .	3.8	18
47	Toward ultra high magnetic field sensitivity $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$ nanowire based superconducting quantum interference devices. <i>Journal of Applied Physics</i> , 2016, 119, .	2.5	18
48	Quantum properties of d-wave $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$ Josephson junction. <i>Physica C: Superconductivity and Its Applications</i> , 2006, 435, 8-11.	1.2	16
49	Resistive state triggered by vortex entry in $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$ nanostructures. <i>Physica C: Superconductivity and Its Applications</i> , 2014, 506, 165-168.	1.2	16
50	Improved noise performance of ultrathin YBCO Dayem bridge nanoSQUIDs. <i>Superconductor Science and Technology</i> , 2017, 30, 014008.	3.5	16
51	High transparency $\text{Bi}_2\text{Se}_3$ topological insulator nanoribbon Josephson junctions with low resistive noise properties. <i>Applied Physics Letters</i> , 2019, 115, .	3.3	16
52	Stoichiometric $\text{Bi}_2\text{Se}_3$ topological insulator ultra-thin films obtained through a new fabrication process for optoelectronic applications. <i>Nanoscale</i> , 2020, 12, 12405-12415.	5.6	16
53	Space charge limited current mechanism in $\text{Bi}_2\text{S}_3$ nanowires. <i>Journal of Applied Physics</i> , 2016, 119, .	2.5	15
54	Interplay between Static and Dynamic Properties of Semifluxons in $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$ . <i>Physical Review Letters</i> , 2010, 104, 177003.	7.8	14

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55	Properties of nanoscale $YBa_2Cu_3O_{7-\delta}$ nanorings to probe fluxoid quantization in High Critical Temperature Superconductors. Physica C: Superconductivity and Its Applications, 2014, 506, 184-187.	3.2	13
56	Retention of Electronic Conductivity in $YBa_2Cu_3O_{7-\delta}$ nanorings to probe fluxoid quantization in High Critical Temperature Superconductors. Physica C: Superconductivity and Its Applications, 2014, 506, 184-187.	1.2	13
57	Using a $LaAlO_3/SrCuO_2$ interface probed by nanoscale transport. Physical Review Applied, 2016, 6, .	3.8	13
58	SQUID Magnetometer Based on Grooved Dayem Nanobridges and a Flux Transformer. IEEE Transactions on Applied Superconductivity, 2020, 30, 1-4.	1.7	13
59	High-temperature superconducting Josephson Vortex Flow Transistors: numerical simulations and experimental results. IEEE Transactions on Applied Superconductivity, 1997, 7, 3605-3608.	1.7	12
60	Homogeneous superconductivity at the $LaAlO_3/SrTiO_3$ interface probed by nanoscale transport. Physical Review B, 2017, 96, .	1.7	11
61	Transport Properties of YBCO Nanowires. IEEE Transactions on Applied Superconductivity, 2011, 21, 164-167.	1.7	11
62	Toward notation $YBa_2Cu_3O_{7-\delta}$ Nanoscale Structures for Hybrid Devices. IEEE Transactions on Applied Superconductivity, 2015, 25, 1-4.	1.7	11
63	Theory of two-dimensional macroscopic quantum tunneling in $YBa_2Cu_3O_{7-\delta}$ junctions coupled to an LC circuit. Physical Review B, 2009, 80, .	3.2	10
64	Microwave losses in MgO, LaAlO <sub>3</sub> , and (La <sub>0.3</sub> Sr <sub>0.7</sub> )(Al <sub>0.65</sub> Ta <sub>0.35</sub> )O <sub>3</sub> dielectrics at low power and in the millikelvin temperature range. Applied Physics Letters, 2014, 104, .	3.3	10
65	The Aharonov-Bohm effect in graphene rings with metal mirrors. Carbon, 2012, 50, 5562-5568.	10.3	9
66	Effect of heating on critical current of YBCO nanowires. Physica C: Superconductivity and Its Applications, 2014, 506, 174-177.	1.2	9
67	High-Transparency Al/Bi <sub>2</sub> Te <sub>3</sub> Double-Barrier Heterostructures. IEEE Transactions on Applied Superconductivity, 2017, 27, 1-4.	1.7	9
68	Improved coupling of nanowire-based high- $T_c$ SQUID magnetometers—simulations and experiments. Superconductor Science and Technology, 2017, 30, 115014.	3.5	9
69	Surface structure promoted high-yield growth and magnetotransport properties of Bi <sub>2</sub> Se <sub>3</sub> nanoribbons. Scientific Reports, 2019, 9, 11328.	3.3	9
70	Untwinned $YBa_2Cu_3O_{7-\delta}$ thin films on MgO substrates: A platform to study strain effects on the local orders in cuprates. Physical Review Materials, 2019, 3, .	1.7	9
71	Sub-Micron $YBa_2Cu_3O_{7-x}$ Biepitaxial Junctions. IEEE Transactions on Applied Superconductivity, 2009, 19, 174-177.	1.7	8
72	Fabrication and electrical transport characterization of high quality underdoped $YBa_2Cu_3O_{7-\delta}$ nanowires. Superconductor Science and Technology, 2020, 33, 064002.	3.5	8

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73	Gate-tunable pairing channels in superconducting non-centrosymmetric oxides nanowires. Npj Quantum Materials, 2022, 7, .	5.2	8
74	Small-number arrays of intrinsic Josephson junctions. Physica C: Superconductivity and Its Applications, 2008, 468, 674-678.	1.2	7
75	Josephson effect in Al/Bi2Se3/Al coplanar hybrid devices. Physica C: Superconductivity and Its Applications, 2014, 503, 162-165.	1.2	7
76	Study of in-plane electrical transport anisotropy of $a$ -axis oriented $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$ nanodevices. Physical Review B, 2017, 95, .	3.2	7
77	TWO-DIMENSIONAL MACROSCOPIC QUANTUM DYNAMICS IN YBCO JOSEPHSON JUNCTIONS. International Journal of Modern Physics B, 2009, 23, 4329-4337.	2.0	6
78	Incipient Berezinskii-Kosterlitz-Thouless transition in two-dimensional coplanar Josephson junctions. Physical Review B, 2016, 94, .	3.2	6
79	Nanopatterning of Weak Links in Superconducting Oxide Interfaces. Nanomaterials, 2021, 11, 398.	4.1	6
80	Highly efficient UV detection in a metal-semiconductor-metal detector with epigraphene. Applied Physics Letters, 2022, 120, .	3.3	6
81	Comparison of Josephson vortex flow transistors with different gate line configurations. Applied Physics Letters, 2001, 78, 1095-1097.	3.3	5
82	Flavours of intrinsic d-wave induced effects in $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$ grain boundary Josephson junctions. Superconductor Science and Technology, 2004, 17, S202-S207.	3.5	5
83	Dynamics of a LC Shunted $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$ Josephson Junction. IEEE Transactions on Applied Superconductivity, 2007, 17, 653-658.	1.7	5
84	YBCO SQUIDS with unconventional current phase relation. Physica C: Superconductivity and Its Applications, 2007, 463-465, 979-984.	1.2	5
85	Underlying physical aspects of fluctuations in $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$ grain boundary Josephson junctions. Physica C: Superconductivity and Its Applications, 2008, 468, 310-315.	1.2	5
86	Josephson Coupling in Junctions Made of Monolayer Graphene Grown on SiC. Journal of Superconductivity and Novel Magnetism, 2016, 29, 1145-1150.	1.8	5
87	Noise Properties of YBCO Nanostructures. IEEE Transactions on Applied Superconductivity, 2017, 27, 1-4.	1.7	5
88	On the angular dependence of InP high electron mobility transistors for cryogenic low noise amplifiers in a magnetic field. AIP Advances, 2019, 9, .	1.3	5
89	The performance limits of epigraphene Hall sensors doped across the Dirac point. Applied Physics Letters, 2020, 116, .	3.3	5
90	High-Mobility Ambipolar Magnetotransport in Topological Insulator $\text{Bi}_2\text{Se}_3$ Nanoribbons. Physical Review Applied, 2021, 16, .	3.8	5

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91	Mapping the Phase Diagram of a $YBa_2Cu_3O_{7-\delta}$ Nanowire Through Electromigration. <i>Physical Review Applied</i> , 2022, 17, .	1.8	5
92	Fabrication and properties of sub-micrometric YBCO biepitaxial junctions. <i>Journal of Physics: Conference Series</i> , 2009, 150, 052246.	0.4	4
93	Josephson effect through $YBa_2Cu_3O_{7-\delta}/Au$ -encapsulated nanogaps. <i>Physical Review B</i> , 2017, 95, .	3.2	4
94	Fabrication of ramp-type junctions using a two angle ion beam etching process. <i>Superconductor Science and Technology</i> , 1999, 12, 1016-1019.	3.5	3
95	Dynamics of d-wave $YBa_2Cu_3O_{7-\delta}$ SQUIDs. <i>Superconductor Science and Technology</i> , 2007, 20, S98-S104.	3.5	3
96	Fast tuning of superconducting microwave cavities. , 2008, , .		3
97	High critical temperature superconductor Josephson junctions for quantum circuit applications. <i>Physica Scripta</i> , 2009, T137, 014006.	2.5	3
98	Microwave Losses in YBCO Coplanar Waveguide Resonators at Low Power and Millikelvin Range. <i>IEEE Transactions on Applied Superconductivity</i> , 2015, 25, 1-4.	1.7	3
99	Vortex matter in $YBa_2Cu_3O_{7-\delta}$ grain boundary Josephson junctions: intrinsic and extrinsic d-wave effects for $\mathbb{Z}$ -circuitry. <i>Physica C: Superconductivity and Its Applications</i> , 2004, 404, 367-374.	1.2	2
100	Advances in $YBa_2Cu_3O_{7-\delta}$ Grain Boundary Biepitaxial Josephson Junctions: Transport Properties and Mesoscopic Effects. <i>IEEE Transactions on Applied Superconductivity</i> , 2007, 17, 225-228.	1.7	2
101	Energy level quantization in a $YBa_2Cu_3O_{7-\delta}$ Josephson junction. <i>Physica C: Superconductivity and Its Applications</i> , 2007, 460-462, 335-338.	1.2	2
102	Improvement of chip design to reduce resonances in subgap regime of Josephson junctions. <i>Journal of Physics: Conference Series</i> , 2009, 150, 052063.	0.4	2
103	Low capacitance HTS junctions for single electron transistors. <i>Physica C: Superconductivity and Its Applications</i> , 2010, 470, S188-S190.	1.2	2
104	Quantum phase dynamics in an LC shunted Josephson junction. <i>Journal of Applied Physics</i> , 2011, 109, 093915.	2.5	2
105	Electromigration tuning of the voltage modulation depth in $YBa_2Cu_3O_{7-\delta}$ nanowire-based SQUIDs. <i>Superconductor Science and Technology</i> , 2021, 34, 104001.	3.5	2
106	Magnetotransport Studies of Encapsulated Topological Insulator $Bi_2Se_3$ Nanoribbons. <i>Nanomaterials</i> , 2022, 12, 768.	4.1	2
107	Macroscopic Quantum Phenomena in High Critical Temperature Superconducting Josephson Junctions. <i>Journal of Superconductivity and Novel Magnetism</i> , 2007, 19, 341-347.	1.8	1
108	Theory of two-dimensional macroscopic quantum tunneling in a Josephson junction coupled with an LC circuit. <i>Journal of Physics: Conference Series</i> , 2009, 150, 052105.	0.4	1



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109	Biepitaxial YBa <sub>2</sub> Cu <sub>3</sub> O <sub>7</sub> Josephson junctions. Superconductor Science and Technology, 2010, 23, 034027.	3.5	1
110	Investigation of dark counts in innovative materials for superconducting nanowire single-photon detector applications. , 2017, , .		1
111	10. Josephson and charging effect in mesoscopic superconducting devices. , 2017, , 309-338.		1
112	Josephson Effect in Graphene and 3D Topological Insulators. Springer Series in Materials Science, 2019, , 529-553.	0.6	1
113	Title is missing!. Journal of Low Temperature Physics, 2000, 118, 679-687.	1.4	0
114	Quantum behaviors in high-TC systems: Macroscopic and vortex quantum tunneling. Physica C: Superconductivity and Its Applications, 2006, 437-438, 303-308.	1.2	0
115	Transport measurements on ultra-thin CaBaCuO films. Physica C: Superconductivity and Its Applications, 2007, 460-462, 845-846.	1.2	0
116	Eck-Like Resonances in High- $T_c$ Long Faceted Josephson Junctions. IEEE Transactions on Applied Superconductivity, 2009, 19, 911-915.	1.7	0
117	d-Wave YBCO dc superconductive quantum interference devices (dc SQUIDs). , 2011, , 370-389.		0
118	Y-Ba-Cu-O nanostripes for optical photon detection. , 2015, , .		0
119	Resonant phase dynamics in $\sqrt{3} \times \sqrt{3}$ Gordon facets. Continuum Mechanics and Thermodynamics, 2015, 27, 639-658.	2.2	0
120	SQUID magnetometer based on Grooved Dayem nanobridges and a flux transformer. , 2019, , .		0
121	MBE Growth of Bi <sub>2</sub> Te <sub>3</sub> for Thermoelectrics. , 2013, , .		0
122	High Frequency Properties of Josephson Junctions. Springer Series in Materials Science, 2019, , 513-528.	0.6	0