Alexander J Melville

List of Publications by Year
in descending order

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46 papers	4,088 citations	218381 26 h-index	243296 44 g-index
47 all docs	47 docs citations	47 times ranked	5165 citing authors

#	Article	IF	Citations
1	A Strain-Driven Morphotropic Phase Boundary in BiFeO ₃. Science, 2009, 326, 977-980.	6.0	1,065
2	Photovoltaic effects in BiFeO3. Applied Physics Letters, 2009, 95, .	1.5	460
3	Spontaneous Vortex Nanodomain Arrays at Ferroelectric Heterointerfaces. Nano Letters, 2011, 11, 828-834.	4.5	419
4	Domain Dynamics During Ferroelectric Switching. Science, 2011, 334, 968-971.	6.0	320
5	Optical properties of quasi-tetragonal BiFeO3 thin films. Applied Physics Letters, 2010, 96, .	1.5	153
6	Waveguide quantum electrodynamics with superconducting artificial giant atoms. Nature, 2020, 583, 775-779.	13.7	147
7	3D integrated superconducting qubits. Npj Quantum Information, 2017, 3, .	2.8	146
8	Impact of ionizing radiation on superconducting qubit coherence. Nature, 2020, 584, 551-556.	13.7	118
9	Realization of High-Fidelity CZ and <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>Z</mml:mi><mml:mi>Z</mml:mi></mml:math> -Free iSWAP Gates with a Tunable Coupler. Physical Review X, 2021, 11, .	2.8	103
10	Analysis and mitigation of interface losses in trenched superconducting coplanar waveguide resonators. Applied Physics Letters, 2018, 112, .	1.5	86
11	Giant Resistive Switching via Control of Ferroelectric Charged Domain Walls. Advanced Materials, 2016, 28, 6574-6580.	11.1	83
12	Determining Interface Dielectric Losses in Superconducting Coplanar-Waveguide Resonators. Physical Review Applied, 2019, 12, .	1.5	80
13	Coherent Coupled Qubits for Quantum Annealing. Physical Review Applied, 2017, 8, .	1.5	68
14	Solid-state qubits integrated with superconducting through-silicon vias. Npj Quantum Information, 2020, 6, .	2.8	64
15	Atomic Scale Structure Changes Induced by Charged Domain Walls in Ferroelectric Materials. Nano Letters, 2013, 13, 5218-5223.	4.5	59
16	<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mi>BiFeO</mml:mi><mml:mn>3</mml:mn></mml:msub></mml:math>Domain Wall Energies and Structures: A Combined Experimental and Density Functional<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mtext mathvariant="normal">Theory</mml:mtext><mml:mo mathvariant="bold">+</mml:mo><mml:mi mathvariant="bold">U</mml:mi></mml:math>Study. Physical Review Letters, 2013, 110, 267601.	2.9	59
17	Ultrafast optical tuning of ferromagnetism via the carrier density. Nature Communications, 2015, 6, 6724.	5.8	56
18	Is There an Intrinsic Limit to the Charge-Carrier-Induced Increase of the Curie Temperature of EuO?. Physical Review Letters, 2010, 105, 257206.	2.9	52

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19	High-quality EuO thin films the easy way via topotactic transformation. Nature Communications, 2015, 6, 7716.	5.8	43
20	Characterizing and Optimizing Qubit Coherence Based on SQUID Geometry. Physical Review Applied, 2020, 13, .	1.5	43
21	Probing mixed tetragonal/rhombohedral-like monoclinic phases in strained bismuth ferrite films by optical second harmonic generation. Applied Physics Letters, 2010, 97, 112903.	1.5	41
22	Comparison of dielectric loss in titanium nitride and aluminum superconducting resonators. Applied Physics Letters, 2020, 117, .	1.5	38
23	Hexagonal boron nitride as a low-loss dielectric for superconducting quantum circuits and qubits. Nature Materials, 2022, 21, 398-403.	13.3	34
24	Microwave Package Design for Superconducting Quantum Processors. PRX Quantum, 2021, 2, .	3.5	32
25	Lutetium-doped EuO films grown by molecular-beam epitaxy. Applied Physics Letters, 2012, 100, .	1.5	29
26	Influence of chemical doping on the magnetic properties of EuO. Physical Review B, 2013, 87, .	1.1	28
27	Hetero-epitaxial EuO interfaces studied by analytic electron microscopy. Applied Physics Letters, 2014, 104, .	1.5	26
28	Generating spatially entangled itinerant photons with waveguide quantum electrodynamics. Science Advances, 2020, 6, .	4.7	26
29	Low thermal conductivity of CsBiNb2O7 epitaxial layers. Applied Physics Letters, 2010, 96, .	1.5	25
30	Effect of film thickness and biaxial strain on the curie temperature of EuO. Applied Physics Letters, 2013, 102, .	1.5	23
31	Making EuO multiferroic by epitaxial strain engineering. Communications Materials, 2020, 1, .	2.9	21
32	Influence of the substrate temperature on the Curie temperature and charge carrier density of epitaxial Gd-doped EuO films. Applied Physics Letters, 2011, 98, .	1.5	18
33	Surface, bulk, and interface electronic states of epitaxial BiFeO3 films. Journal of Vacuum Science & Technology B, 2009, 27, 2012-2014.	1.3	17
34	Multi-level quantum noise spectroscopy. Nature Communications, 2021, 12, 967.	5.8	16
35	Temperature Dependence of the Electronic Structure and Fermi-Surface Reconstruction of <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mi>Eu</mml:mi><mml:mrow><mml:mn>1</mml:mn><mml:mo>â^’</mml:mo><mml:mi>x</mml:mi></mml:mrow></mml:msub><mml:mi mathvariant="bold">O</mml:mi></mml:math> through the Ferromagnetic Metal-Insulator Transition. Physical Review Letters, 2012, 108, 267003.	2.9	15
36	Universal Nonadiabatic Control of Small-Gap Superconducting Qubits. Physical Review X, 2020, 10, .	2.8	14

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37	Deep-Neural-Network Discrimination of Multiplexed Superconducting-Qubit States. Physical Review Applied, 2022, 17, .	1.5	14
38	Improving qubit coherence using closed-loop feedback. Nature Communications, 2022, 13, 1932.	5.8	11
39	Exploring the intrinsic limit of the charge-carrier-induced increase of the Curie temperature of Lu- and La-doped EuO thin films. Physical Review Materials, 2020, 4, .	0.9	9
40	Epitaxial growth of europium monoxide on diamond. Applied Physics Letters, 2013, 103, 222402.	1.5	7
41	Direct observation of polarization-induced two-dimensional electron/hole gases at ferroelectric-insulator interface. Npj Quantum Materials, 2021, 6, .	1.8	6
42	Silicon Hard-Stop Spacers for 3D Integration of Superconducting Qubits. , 2019, , .		4
43	Quantum Emulation of Coherent Backscattering in a System of Superconducting Qubits. Physical Review Applied, 2020, 14, .	1.5	4
44	Demonstration of Density Matrix Exponentiation Using a Superconducting Quantum Processor. Physical Review X, 2022, 12, .	2.8	4
45	Size Effect on Spontaneous Flux-closure Domains in BiFeO 3 Thin Films. Microscopy and Microanalysis, 2016, 22, 1596-1597.	0.2	2
46	Mechanical and Electrical Control of Charged Domain Walls in Ferroelectric Materials. Microscopy and Microanalysis, 2014, 20, 1546-1547.	0.2	0