Andrea Morello

List of Publications by Year
in descending order

107 papers	9,327 citations	57758 44 h-index	37204 96 g-index
108 all docs	108 docs citations	108 times ranked	4734 citing authors

#	Article	IF	Citations
1	Deterministic Shallow Dopant Implantation in Silicon with Detection Confidence Upperâ€Bound to 99.85% by Ionâ€"Solid Interactions. Advanced Materials, 2022, 34, e2103235.	21.0	16
2	Deterministic Shallow Dopant Implantation in Silicon with Detection Confidence Upperâ€Bound to 99.85% by Ionâ€"Solid Interactions (Adv. Mater. 3/2022). Advanced Materials, 2022, 34, .	21.0	1
3	Precision tomography of a three-qubit donor quantum processor in silicon. Nature, 2022, 601, 348-353.	27.8	118
4	Development of an Undergraduate Quantum Engineering Degree. IEEE Transactions on Quantum Engineering, 2022, 3, 1-10.	4.9	8
5	Degenerate Parametric Amplification via Three-Wave Mixing Using Kinetic Inductance. Physical Review Applied, 2022, 17, .	3.8	21
6	Exchange Coupling in a Linear Chain of Three Quantum-Dot Spin Qubits in Silicon. Nano Letters, 2021, 21, 1517-1522.	9.1	24
7	Pauli Blockade in Silicon Quantum Dots with Spin-Orbit Control. PRX Quantum, 2021, 2, .	9.2	36
8	Semiconductor qubits in practice. Nature Reviews Physics, 2021, 3, 157-177.	26.6	164
9	Full configuration interaction simulations of exchange-coupled donors in silicon using multi-valley effective mass theory. New Journal of Physics, 2021, 23, 073007.	2.9	10
10	Coherent spin qubit transport in silicon. Nature Communications, 2021, 12, 4114.	12.8	53
11	An ultra-stable 1.5ÂT permanent magnet assembly for qubit experiments at cryogenic temperatures. Review of Scientific Instruments, 2021, 92, 085106.	1.3	9
12	Conditional quantum operation of two exchange-coupled single-donor spin qubits in a MOS-compatible silicon device. Nature Communications, 2021, 12, 181.	12.8	34
13	Fast Coherent Control of a Nitrogen-Vacancy-Center Spin Ensemble Using a <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline" overflow="scroll"><mml:msub><mml:mrow><mml:mi mathvariant="normal">K</mml:mi><mml:mi>Ta</mml:mi><mml:mi mathvariant="normal">O</mml:mi></mml:mrow><mml:mn>3</mml:mn></mml:msub></mml:math> Dielectric Resonator at Cryogenic Temperatures. Physical Review Applied, 2021, 16, .	3.8	7
14	Engineering local strain for single-atom nuclear acoustic resonance in silicon. Applied Physics Letters, 2021, 119, .	3.3	6
15	Quantum-coherent nanoscience. Nature Nanotechnology, 2021, 16, 1318-1329.	31.5	73
16	A silicon quantum-dot-coupled nuclear spin qubit. Nature Nanotechnology, 2020, 15, 13-17.	31.5	60
17	Donor Spins in Silicon for Quantum Technologies. Advanced Quantum Technologies, 2020, 3, 2000005.	3.9	40
18	Coherent electrical control of a single high-spin nucleus in silicon. Nature, 2020, 579, 205-209.	27.8	79

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19	Controllable freezing of the nuclear spin bath in a single-atom spin qubit. Science Advances, 2020, 6, .	10.3	19
20	Coherent spin control of s-, p-, d- and f-electrons in a silicon quantum dot. Nature Communications, 2020, 11, 797.	12.8	51
21	Operation of a silicon quantum processor unit cell above one kelvin. Nature, 2020, 580, 350-354.	27.8	214
22	Spin thermometry and spin relaxation of optically detected <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msup><mml:mrow><mml:mi>Cr</mml:mi></mml:mrow><mml:mrow><mr ions in ruby <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msub><mml:mi>Al</mml:mi><mml:mn>2</mml:mn></mml:n mathvariant="normal">O</mml:mi><mml:mn>3</mml:mn></mml:msub></mml:mrow></mml:math>. Physical Review B, 2020, 102, .	3.2	7
23	Electron spin relaxation of single phosphorus donors in metal-oxide-semiconductor nanoscale devices. Physical Review B, 2019, 99, .	3.2	22
24	Controlling Spin-Orbit Interactions in Silicon Quantum Dots Using Magnetic Field Direction. Physical Review X, 2019, 9, .	8.9	42
25	Fidelity benchmarks for two-qubit gates in silicon. Nature, 2019, 569, 532-536.	27.8	271
26	Silicon qubit fidelities approaching incoherent noise limits via pulse engineering. Nature Electronics, 2019, 2, 151-158.	26.0	135
27	Gate-based single-shot readout of spins in silicon. Nature Nanotechnology, 2019, 14, 437-441.	31.5	109
28	Single-spin qubits in isotopically enriched silicon at low magnetic field. Nature Communications, 2019, 10, 5500.	12.8	48
29	Strain-Induced Spin-Resonance Shifts in Silicon Devices. Physical Review Applied, 2018, 9, .	3.8	34
30	Quantum search on a single-atom qudit. Nature Nanotechnology, 2018, 13, 9-10.	31.5	6
31	Scalable quantum computing with ion-implanted dopant atoms in silicon. , 2018, , .		5
32	What would you do with 1000 qubits?. Quantum Science and Technology, 2018, 3, 030201.	5.8	7
33	Coherent control via weak measurements in P31 single-atom electron and nuclear spin qubits. Physical Review B, 2018, 98, .	3.2	15
34	Assessment of a Silicon Quantum Dot Spin Qubit Environment via Noise Spectroscopy. Physical Review Applied, 2018, 10, .	3.8	85
35	Exploring quantum chaos with a single nuclear spin. Physical Review E, 2018, 98, .	2.1	17
36	Integrated silicon qubit platform with single-spin addressability, exchange control and single-shot singlet-triplet readout. Nature Communications, 2018, 9, 4370.	12.8	66

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37	Robust electric dipole transition at microwave frequencies for nuclear spin qubits in silicon. Physical Review B, 2018, 98, .	3.2	13
38	Logical Qubit in a Linear Array of Semiconductor Quantum Dots. Physical Review X, 2018, 8, .	8.9	39
39	Interface-induced spin-orbit interaction in silicon quantum dots and prospects for scalability. Physical Review B, 2018, 97, .	3.2	42
40	Interfacing spin qubits in quantum dots and donorsâ€"hot, dense, and coherent. Npj Quantum Information, 2017, 3, .	6.7	357
41	Silicon quantum processor with robust long-distance qubit couplings. Nature Communications, 2017, 8, 450.	12.8	123
42	A single-atom quantum memory in silicon. Quantum Science and Technology, 2017, 2, 015009.	5.8	30
43	Electrical control of nuclear spins. Nature Nanotechnology, 2017, 12, 937-938.	31.5	3
44	Impact of <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi>g</mml:mi></mml:math> -factors and valleys on spin qubits in a silicon double quantum dot. Physical Review B, 2017, 96, .	3.2	21
45	A dressed spin qubit in silicon. Nature Nanotechnology, 2017, 12, 61-66.	31.5	62
46	Deterministic Atom Placement by Ion Implantation: Few and Single Atom Devices for Quantum Computer Technology. , 2016, , .		4
47	Vibration-induced electrical noise in a cryogen-free dilution refrigerator: Characterization, mitigation, and impact on qubit coherence. Review of Scientific Instruments, 2016, 87, 073905.	1.3	33
48	Transport of spin qubits with donor chains under realistic experimental conditions. Physical Review B, 2016, 94, .	3.2	19
49	Breaking the rotating wave approximation for a strongly driven dressed single-electron spin. Physical Review B, 2016, 94, .	3.2	31
50	Optimization of a solid-state electron spin qubit using gate set tomography. New Journal of Physics, 2016, 18, 103018.	2.9	54
51	Bell's inequality violation with spins in silicon. Nature Nanotechnology, 2016, 11, 242-246.	31.5	56
52	Spin-orbit coupling and operation of multivalley spin qubits. Physical Review B, 2015, 92, .	3.2	69
53	Single atom devices by ion implantation. Journal of Physics Condensed Matter, 2015, 27, 154204.	1.8	61
54	Electrically controlling single-spin qubits in a continuous microwave field. Science Advances, 2015, 1, e1500022.	10.3	125

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55	A two-qubit logic gate in silicon. Nature, 2015, 526, 410-414.	27.8	700
56	Quantifying the quantum gate fidelity of single-atom spin qubits in silicon by randomized benchmarking. Journal of Physics Condensed Matter, 2015, 27, 154205.	1.8	107
57	Silicon quantum dots: fine-tuning to maturity. Nanotechnology, 2015, 26, 502501.	2.6	7
58	Single spins in silicon carbide. Nature Materials, 2015, 14, 135-136.	27.5	16
59	Single-atom spin qubits in silicon. , 2014, , .		0
60	High-fidelity adiabatic inversion of a ³¹P electron spin qubit in natural silicon. Applied Physics Letters, 2014, 104, 092115.	3.3	24
61	An addressable quantum dot qubit with fault-tolerant control-fidelity. Nature Nanotechnology, 2014, 9, 981-985.	31.5	703
62	Circuit-quantum electrodynamics with direct magnetic coupling to single-atom spin qubits in isotopically enriched 28Si. AIP Advances, 2014, 4, .	1.3	28
63	Coherent Control of a Single<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mmultiscripts><mml:mrow><mml:mi>Si</mml:mi></mml:mrow><mml:mprescripts /><mml:none /><mml:mrow><mml:mn>29</mml:mn></mml:mrow></mml:mmultiscripts></mml:mrow></mml:math>Nuclear Spin Qubit. Physical Review Letters, 2014, 113, 246801.	7.8	47
64	Robust Two-Qubit Gates for Donors in Silicon Controlled by Hyperfine Interactions. Physical Review X, 2014, 4, .	8.9	42
65	Storing quantum information for 30 seconds in a nanoelectronic device. Nature Nanotechnology, 2014, 9, 986-991.	31.5	513
66	Observation of Zero-Point Quantum Fluctuations of a Single-Molecule Magnet through the Relaxation of its Nuclear Spin Bath. Physical Review Letters, 2014, 112, 117202.	7.8	1
67	Single-Shot Readout and Relaxation of Singlet and Triplet States in Exchange-Coupled<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mmultiscripts><mml:mrow><mml:mi mathvariant="normal">P</mml:mi></mml:mrow><mml:mprescripts /><mml:none /><mml:mrow><mml:mn>31</mml:mn></mml:mrow></mml:mmultiscripts></mml:mrow></mml:math>Electron Spins in Silicon. Physical Review Letters, 2014, 112, 236801.	7.8	59
68	Designing a large scale quantum computer with atomistic simulations. , 2014, , .		2
69	Silicon quantum electronics. Reviews of Modern Physics, 2013, 85, 961-1019.	45.6	892
70	Nanoscale broadband transmission lines for spin qubit control. Nanotechnology, 2013, 24, 015202.	2.6	55
71	Atoms and circuits unite in silicon. Nature Nanotechnology, 2013, 8, 233-234.	31.5	6
72	High-fidelity readout and control of a nuclear spin qubit in silicon. Nature, 2013, 496, 334-338.	27.8	431

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73	Noninvasive Spatial Metrology of Single-Atom Devices. Nano Letters, 2013, 13, 1903-1909.	9.1	29
74	Spin readout and addressability of phosphorus-donor clusters in silicon. Nature Communications, 2013, 4, 2017.	12.8	100
75	Spin-valley lifetimes in a silicon quantum dot with tunable valley splitting. Nature Communications, 2013, 4, 2069.	12.8	231
76	Quantum Information in Silicon Devices Based on Individual Dopants. , 2013, , .		1
77	A single-atom electron spin qubit in silicon. Nature, 2012, 489, 541-545.	27.8	666
78	Orbital and valley state spectra of a few-electron silicon quantum dot. Physical Review B, 2012, 86, .	3.2	40
79	Pauli Spin Blockade in a Highly Tunable Silicon Double Quantum Dot. Scientific Reports, 2011, 1, 110.	3.3	86
80	Independent Control of Dot Occupancy and Reservoir Electron Density in a One-electron Quantum Dot. AIP Conference Proceedings, 2011, , .	0.4	0
81	Single-shot readout of an electron spin in silicon. Nature, 2010, 467, 687-691.	27.8	623
82	Probe and control of the reservoir density of states in single-electron devices. Physical Review B, 2010, 81, .	3.2	21
83	Electron tunnel rates in a donor-silicon single electron transistor hybrid. Physical Review B, 2010, 81, .	3.2	18
84	Electron Spin Decoherence in Isotope-Enriched Silicon. Physical Review Letters, 2010, 105, 187602.	7.8	120
85	Radio frequency readout of electrically detected magnetic resonance in phosphorus-doped silicon MOSFETs. , 2010, , .		0
86	Transport Spectroscopy of Single Phosphorus Donors in a Silicon Nanoscale Transistor. Nano Letters, 2010, 10, 11-15.	9.1	120
87	Resonant tunnelling features in quantum dots. Nanotechnology, 2010, 21, 274018.	2.6	47
88	Observation of the single-electron regime in a highly tunable silicon quantum dot. Applied Physics Letters, 2009, 95, .	3.3	77
89	Architecture for high-sensitivity single-shot readout and control of the electron spin of individual donors in silicon. Physical Review B, 2009, 80, .	3.2	80
90	Quantum Nanomagnets and Nuclear Spins: An Overview. NATO Science for Peace and Security Series B: Physics and Biophysics, 2008, , 125-138.	0.3	0

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91	Dynamics and thermalization of the nuclear spin bath in the single-molecule magnet<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mi mathvariant="normal">Mn</mml:mi><mml:mn>12</mml:mn></mml:msub><mml:mtext>â^'</mml:mtext><mml:mi>ac</mml:mi></m Test for the theory of spin tunneling. Physical Review B, 2007, 76, .	3.2	14
92	Local Magnetic Properties of a Monolayer of Mn12 Single Molecule Magnets. Nano Letters, 2007, 7, 1551-1555.	9.1	68
93	Pairwise Decoherence in Coupled Spin Qubit Networks. Physical Review Letters, 2006, 97, 207206.	7.8	94
94	Magnetic dipolar ordering and relaxation in the high-spin molecular cluster compoundMn6. Physical Review B, 2006, 73, .	3.2	23
95	Automated and versatile SQUID magnetometer for the measurement of materials properties at millikelvin temperatures. Review of Scientific Instruments, 2005, 76, 023902.	1.3	12
96	Nuclear Spin Dynamics in the Quantum Regime of a Single-Molecule Magnet. Physical Review Letters, 2004, 93, 197202.	7.8	42
97	Low-temperature NMR study of quantum tunneling of magnetization in the molecular magnet Mn12-ac. Journal of Magnetism and Magnetic Materials, 2004, 272-276, 1015-1016.	2.3	3
98	Approach of single-molecule magnets to thermal equilibrium. Journal of Physics and Chemistry of Solids, 2004, 65, 763-771.	4.0	10
99	Quantum tunnelling of magnetization in Mn 12 - ac studied by 55 Mn NMR. Polyhedron, 2003, 22, 1745-1749.	2.2	29
100	Long-Range Ferromagnetic Dipolar Ordering of High-Spin Molecular Clusters. Physical Review Letters, 2003, 90, 017206.	7.8	55
101	VORTEX GLASS TRANSITION VERSUS IRREVERSIBILITY LINE IN SUPERCONDUCTING BKBO. International Journal of Modern Physics B, 2002, 16, 3221-3221.	2.0	1
102	3D-melting features of the irreversibility line in overdoped Bi2Sr2CuO6 at ultra-low temperature and high magnetic field. Physica C: Superconductivity and Its Applications, 2000, 341-348, 1321-1322.	1.2	0
103	ab-plane resistivity and possible charge stripe ordering in strongly underdoped La2â^'xSrxCuO4 single crystals. Physica C: Superconductivity and Its Applications, 2000, 341-348, 1779-1780.	1.2	3
104	Resistivity and electron-phonon coupling in YNi2B2C single crystals. Physica C: Superconductivity and Its Applications, 2000, 341-348, 1957-1958.	1.2	6
105	ELECTRON-PHONON COUPLING ORIGIN OF THE RESISTIVITY IN YNi2B2C SINGLE CRYSTALS. International Journal of Modern Physics B, 2000, 14, 2840-2845.	2.0	7
106	POSSIBLE EVIDENCE OF CHARGE-STRIPE ORDERING IN THE ab-PLANE RESISTIVITY OF STRONGLY UNDERDOPED La2-xSrxCuO4 SINGLE CRYSTALS. International Journal of Modern Physics B, 2000, 14, 2779-2784.	2.0	2
107	Irreversibility line of overdopedBi2+xSr2â^'(x+y)Cu1+yO6Â±Î´at ultralow temperatures and high magnetic fields. Physical Review B, 2000, 61, 9113-9117.	3.2	12