Kohei M Itoh

List of Publications by Year
in descending order

118 papers	5,471 citations	109321 35 h-index	82547 72 g-index
118 all docs	118 docs citations	118 times ranked	4285 citing authors

#	Article	IF	Citations
1	A quantum-dot spin qubit with coherence limited by charge noise and fidelity higher than 99.9%. Nature Nanotechnology, 2018, 13, 102-106.	31.5	574
2	Electron spin coherence exceeding seconds in high-purity silicon. Nature Materials, 2012, 11, 143-147.	27.5	561
3	Storing quantum information for 30 seconds in a nanoelectronic device. Nature Nanotechnology, 2014, 9, 986-991.	31.5	513
4	Isotope engineering of silicon and diamond for quantum computing and sensing applications. MRS Communications, 2014, 4, 143-157.	1.8	212
5	Materials challenges and opportunities for quantum computing hardware. Science, 2021, 372, .	12.6	196
6	Violation of a Leggettâ€"Garg inequality with ideal non-invasive measurements. Nature Communications, 2012, 3, 606.	12.8	172
7	Optical and Spin Coherence Properties of Nitrogen-Vacancy Centers Placed in a 100 nm Thick Isotopically Purified Diamond Layer. Nano Letters, 2012, 12, 2083-2087.	9.1	161
8	Storage of Multiple Coherent Microwave Excitations in an Electron Spin Ensemble. Physical Review Letters, 2010, 105, 140503.	7.8	156
9	Entanglement in a solid-state spin ensemble. Nature, 2011, 470, 69-72.	27.8	131
10	Electrically controlling single-spin qubits in a continuous microwave field. Science Advances, 2015, 1, e1500022.	10.3	125
11	High-Sensitivity Magnetometry Based on Quantum Beats in Diamond Nitrogen-Vacancy Centers. Physical Review Letters, 2013, 110, 130802.	7.8	119
12	Precision tomography of a three-qubit donor quantum processor in silicon. Nature, 2022, 601, 348-353.	27.8	118
13	Broadband, large-area microwave antenna for optically detected magnetic resonance of nitrogen-vacancy centers in diamond. Review of Scientific Instruments, 2016, 87, 053904.	1.3	94
14	Experimental Evidence of the Vacancy-Mediated Silicon Self-Diffusion in Single-Crystalline Silicon. Physical Review Letters, 2007, 98, 095901.	7.8	92
15	Donor and acceptor concentration dependence of the electron Hall mobility and the Hall scattering factor in n-type 4Hâ€" and 6Hâ€"SiC. Journal of Applied Physics, 2001, 89, 6228-6234.	2.5	89
16	Electron-spin phase relaxation of phosphorus donors in nuclear-spin-enriched silicon. Physical Review B, 2004, 70, .	3.2	89
17	Coherent electrical control of a single high-spin nucleus in silicon. Nature, 2020, 579, 205-209.	27.8	79
18	Electron spin coherence of phosphorus donors in silicon: Effect of environmental nuclei. Physical Review B, 2010, 82, .	3.2	76

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19	High Purity Isotopically Enriched29Si and30Si Single Crystals: Isotope Separation, Purification, and Growth. Japanese Journal of Applied Physics, 2003, 42, 6248-6251.	1.5	72
20	Self-diffusion of Si in thermally grown SiO2 under equilibrium conditions. Journal of Applied Physics, 2003, 93, 3674-3676.	2.5	68
21	Modeling of Si self-diffusion in SiO2: Effect of the Si/SiO2 interface including time-dependent diffusivity. Applied Physics Letters, 2004, 84, 876-878.	3.3	67
22	Growth and Characterization of the Isotopically Enriched 28Si Bulk Single Crystal. Japanese Journal of Applied Physics, 1999, 38, L1493-L1495.	1.5	63
23	High density nitrogen-vacancy sensing surface created via He+ ion implantation of 12C diamond. Applied Physics Letters, 2016, 108, .	3.3	63
24	A dressed spin qubit in silicon. Nature Nanotechnology, 2017, 12, 61-66.	31.5	62
25	A silicon quantum-dot-coupled nuclear spin qubit. Nature Nanotechnology, 2020, 15, 13-17.	31.5	60
26	Charge states of vacancies in germanium investigated by simultaneous observation of germanium self-diffusion and arsenic diffusion. Applied Physics Letters, 2008, 93, .	3.3	56
27	Bell's inequality violation with spins in silicon. Nature Nanotechnology, 2016, 11, 242-246.	31.5	56
28	Interstitial oxygen in germanium and silicon. Physical Review B, 1997, 56, 3820-3833.	3.2	55
29	Effect of the Si/SiO2 interface on self-diffusion of Si in semiconductor-grade SiO2. Applied Physics Letters, 2003, 83, 3897-3899.	3.3	55
30	Theory of the anisotropy of the electron Hall mobility in n-type 4Hâ€“ and 6Hâ€“SiC. Journal of Applied Physics, 2000, 88, 1956-1961.	2.5	47
31	An all-silicon linear chain NMR quantum computer. Solid State Communications, 2005, 133, 747-752.	1.9	47
32	Geometric phase gates with adiabatic control in electron spin resonance. Physical Review A, 2013, 87, .	2.5	43
33	Electrical properties of isotopically enriched neutron-transmutation-doped70Ge:Ganear the metal-insulator transition. Physical Review B, 1998, 58, 9851-9857.	3.2	42
34	Interaction of Strain and Nuclear Spins in Silicon: Quadrupolar Effects on Ionized Donors. Physical Review Letters, 2015, 115, 057601.	7.8	36
35	Pauli Blockade in Silicon Quantum Dots with Spin-Orbit Control. PRX Quantum, 2021, 2, .	9.2	36
36	Self-Assembly of Parallel Atomic Wires and Periodic Clusters of Silicon on a Vicinal Si(111) Surface. Physical Review Letters, 2005, 95, 106101.	7.8	35

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37	Optical pumping ofSi29nuclear spins in bulk silicon at high magnetic field and liquid helium temperature. Physical Review B, 2005, 71, .	3.2	34
38	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
39	Nuclear magnetic resonance linewidth and spin diffusion in<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mmultiscripts><mml:mtext>S</mml:mtext><mml:mprescripts /><mml:none /><mml:mrow><mml:mn>29</mml:mn></mml:mrow></mml:mmultiscripts><mml:mtext>i</mml:mtext></mml:mrow></mml:math>isot controlled silicon. Physical Review B, 2008, 78, .	3.2	32
40	Atom probe microscopy of three-dimensional distribution of silicon isotopes in Si28â^•Si30 isotope superlattices with sub-nanometer spatial resolution. Journal of Applied Physics, 2009, 106, .	2.5	32
41	Suppression of surface segregation of the phosphorous Î´-doping layer by insertion of an ultra-thin silicon layer for ultra-shallow Ohmic contacts on n-type germanium. Applied Physics Letters, 2015, 107, .	3.3	31
42	Breaking the rotating wave approximation for a strongly driven dressed single-electron spin. Physical Review B, 2016, 94, .	3.2	31
43	A single-atom quantum memory in silicon. Quantum Science and Technology, 2017, 2, 015009.	5.8	30
44	Thermal Stability and Surface Passivation of Ge Nanowires Coated by Epitaxial SiGe Shells. Nano Letters, 2012, 12, 1385-1391.	9.1	29
45	Double and single peaks in nuclear magnetic resonance spectra of natural and29Siâ^'enrichedsingle-crystal silicon. Physical Review B, 2003, 68, .	3.2	28
46	Dynamic nuclear polarization of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mmultiscripts><mml:mtext>S</mml:mtext><mml:mprescripts /><mml:none /><mml:mrow><mml:mn>29</mml:mn></mml:mrow></mml:mmultiscripts><mml:mtext>i</mml:mtext></mml:mrow></mml:math>nuc in isotopically controlled phosphorus doped silicon. Physical Review B, 2009, 80, .	3.2	28
47	Host isotope effect on the localized vibrational modes of oxygen in isotopically enriched28Si,29Si,and30Sisingle crystals. Physical Review B, 2003, 68, .	3.2	25
48	Exchange Coupling in a Linear Chain of Three Quantum-Dot Spin Qubits in Silicon. Nano Letters, 2021, 21, 1517-1522.	9.1	24
49	Polarization- and frequency-tunable microwave circuit for selective excitation of nitrogen-vacancy spins in diamond. Applied Physics Letters, 2016, 109, .	3.3	23
50	Growth and characterization of short-period silicon isotope superlattices. Thin Solid Films, 2006, 508, 160-162.	1.8	22
51	Electron spin relaxation of single phosphorus donors in metal-oxide-semiconductor nanoscale devices. Physical Review B, 2019, 99, .	3.2	22
52	Resonant escape over an oscillating barrier in a single-electron ratchet transfer. Physical Review B, 2010, 82, .	3.2	21
53	Escape dynamics of a few electrons in a single-electron ratchet using silicon nanowire metal-oxide-semiconductor field-effect transistor. Applied Physics Letters, 2008, 93, .	3.3	20
54	Correlated diffusion of silicon and boron in thermally grown SiO2. Applied Physics Letters, 2004, 85, 221-223.	3.3	19

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55	Controllable freezing of the nuclear spin bath in a single-atom spin qubit. Science Advances, 2020, 6, .	10.3	19
56	Construction and operation of a tabletop system for nanoscale magnetometry with single nitrogen-vacancy centers in diamond. AIP Advances, 2020, 10, .	1.3	19
57	Quantitative Evaluation of Silicon Displacement Induced by Arsenic Implantation Using Silicon Isotope Superlattices. Applied Physics Express, 0, 1, 021401.	2.4	18
58	Direct-gap photoluminescence from germanium nanowires. Physical Review B, 2012, 86, .	3.2	18
59	29Si nuclear spins as a resource for donor spin qubits in silicon. New Journal of Physics, 2016, 18, 023021.	2.9	18
60	Imaging Topological Spin Structures Using Light-Polarization and Magnetic Microscopy. Physical Review Applied, 2021, 15, .	3.8	18
61	Calculation of the Anisotropy of the Hall Mobility in n-Type 4H- and 6H-SiC. Materials Science Forum, 1998, 264-268, 295-298.	0.3	17
62	Coherent Storage of Photoexcited Triplet States Using<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mmultiscripts><mml:mi>Si</mml:mi><mml:mprescripts /><mml:none /><mml:mn>29</mml:mn></mml:mmultiscripts></mml:math>Nuclear Spins in Silicon. Physical Review Letters, 2012, 108, 097601.	7.8	17
63	Bell-state tomography in a silicon many-electron artificial molecule. Nature Communications, 2021, 12, 3228.	12.8	17
64	Isotopically engineered semiconductors â€“ new media for the investigation of nuclear spin related effects in solids. Physica E: Low-Dimensional Systems and Nanostructures, 2001, 10, 463-466.	2.7	13
65	Effect of Si/SiO2Interface on Silicon and Boron Diffusion in Thermally Grown SiO2. Japanese Journal of Applied Physics, 2004, 43, 7837-7842.	1.5	13
66	Submillisecond Hyperpolarization of Nuclear Spins in Silicon. Physical Review Letters, 2015, 114, 117602.	7.8	13
67	Quadrupolar effects on nuclear spins of neutral arsenic donors in silicon. Physical Review B, 2016, 93, .	3.2	13
68	Dynamic nuclear polarization enhanced magnetic field sensitivity and decoherence spectroscopy of an ensemble of near-surface nitrogen-vacancy centers in diamond. Applied Physics Letters, 2017, 110, .	3.3	13
69	Spin-dependent recombination involving oxygen-vacancy complexes in silicon. Physical Review B, 2014, 89, .	3.2	12
70	Theoretical Calculation of the Electron Hall Mobility in n-Type 4Hâ€“ and 6H-SiC. Materials Science Forum, 2000, 338-342, 729-732.	0.3	11
71	Simulation of correlated diffusion of Si and B in thermally grown SiO2. Journal of Applied Physics, 2004, 96, 5513-5519.	2.5	11
72	One-dimensional ordering of Ge nanoclusters along atomically straight steps of Si(111). Applied Physics Letters, 2007, 90, 013108.	3.3	11

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73	Metal-insulator transition of isotopically enriched neutron-transmutation-doped70Ge:Gain magnetic fields. Physical Review B, 1999, 60, 15817-15823.	3.2	10
74	Localization length and impurity dielectric susceptibility in the critical regime of the metal-insulator transition in homogeneously dopedp-typeGe. Physical Review B, 2000, 62, R2255-R2258.	3.2	10
75	Enhanced oxygen exchange near the oxide/silicon interface during silicon thermal oxidation. Thin Solid Films, 2007, 515, 6596-6600.	1.8	10
76	Silicon isotope superlattices: Ideal SIMS standards for shallow junction characterization. Applied Surface Science, 2008, 255, 1345-1347.	6.1	10
77	Accurate Determination of the Intrinsic Diffusivities of Boron, Phosphorus, and Arsenic in Silicon: The Influence of SiO2Films. Japanese Journal of Applied Physics, 2008, 47, 6205-6207.	1.5	10
78	Rabi oscillation and electron-spin-echo envelope modulation of the photoexcited triplet spin system in silicon. Physical Review B, 2012, 86, .	3.2	10
79	Nitrogen-vacancy centers created by N+ ion implantation through screening SiO2 layers on diamond. Applied Physics Letters, 2017, 110, .	3.3	10
80	Wide-Field Dynamic Magnetic Microscopy Using Double-Double Quantum Driving of a Diamond Defect Ensemble. Physical Review Applied, 2021, 15, .	3.8	10
81	Behaviors of neutral and charged silicon self-interstitials during transient enhanced diffusion in silicon investigated by isotope superlattices. Journal of Applied Physics, 2009, 105, .	2.5	9
82	Generation of excess Si species at Siâˆ•SiO2 interface and their diffusion into SiO2 during Si thermal oxidation. Journal of Applied Physics, 2008, 103, 026101.	2.5	8
83	Quantitative evaluation of germanium displacement induced by arsenic implantation using germanium isotope superlattices. Physica B: Condensed Matter, 2009, 404, 4546-4548.	2.7	8
84	Self-assembly of periodic nanoclusters of Si and Ge along atomically straight steps of a vicinal Si(111). Journal of Applied Physics, 2007, 101, 081702.	2.5	7
85	Spin-dependent recombination at arsenic donors in ion-implanted silicon. Applied Physics Letters, 2014, 105, .	3.3	7
86	Detection and control of single proton spins in a thin layer of diamond grown by chemical vapor deposition. Applied Physics Letters, 2020, 117, .	3.3	7
87	Enhanced Si and B diffusion in semiconductor-grade SiO2 and the effect of strain on diffusion. Thin Solid Films, 2006, 508, 270-275.	1.8	6
88	Observation of silicon self-diffusion enhanced by the strain originated from end-of-range defects using isotope multilayers. Journal of Applied Physics, 2015, 118, 115706.	2.5	6
89	Simultaneous observation of the behavior of impurities and silicon atoms in silicon isotope superlattices. Physica B: Condensed Matter, 2007, 401-402, 597-599.	2.7	5
90	Formation of Nitrogen-Vacancy Centers in Homoepitaxial Diamond Thin Films Grown via Microwave Plasma-Assisted Chemical Vapor Deposition. IEEE Nanotechnology Magazine, 2016, 15, 614-618.	2.0	5

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91	Oxidation-enhanced Si self-diffusion in isotopically modulated silicon nanopillars. Journal of Applied Physics, 2020, 127, 045704.	2.5	5
92	Film thickness determining method of the silicon isotope superlattices by SIMS. Applied Surface Science, 2008, 255, 1430-1432.	6.1	4
93	Spin coherence and depths of single nitrogen-vacancy centers created by ion implantation into diamond via screening masks. Journal of Applied Physics, 2020, 127, 244502.	2.5	4
94	Pulsed EPR study of spin coherence time of P donors in isotopically controlled Si. Physica B: Condensed Matter, 2006, 376-377, 28-31.	2.7	3
95	Host-isotope effect on the localized vibrational modes of oxygen dimer in isotopically enriched silicon. Physica B: Condensed Matter, 2006, 376-377, 959-962.	2.7	3
96	Critical Displacement of Host-Atoms for Amorphization in Germanium Induced by Arsenic Implantation. Applied Physics Express, 2010, 3, 071303.	2.4	3
97	Self-diffusion in compressively strained Ge. Journal of Applied Physics, 2011, 110, 034906.	2.5	3
98	Simultaneous observation of the diffusion of self-atoms and co-implanted boron and carbon in silicon investigated by isotope heterostructures. Japanese Journal of Applied Physics, 2014, 53, 071302.	1.5	3
99	Suppression of segregation of the phosphorus Î´-doping layer in germanium by incorporation of carbon. Japanese Journal of Applied Physics, 2016, 55, 031304.	1.5	3
100	Multiple-Quantum Transitions and Charge-Induced Decoherence of Donor Nuclear Spins in Silicon. Physical Review Letters, 2017, 118, 246401.	7.8	3
101	Monte Carlo simulation of silicon atomic displacement and amorphization induced by ion implantation. Journal of Applied Physics, 2011, 109, 123507.	2.5	2
102	Electron nuclear double resonance with donor-bound excitons in silicon. Physical Review B, 2016, 94, .	3.2	2
103	Lattice isotope effects on the widths of optical transitions in silicon. Journal of Physics Condensed Matter, 2005, 17, S2211-S2217.	1.8	1
104	Oxygen Self-Diffusion in Silicon Dioxide: Effect of the Si/SiO₂ Interface. Defect and Diffusion Forum, 2006, 258-260, 554-561.	0.4	1
105	Dynamic Nuclear Polarization of29Si Nuclei Induced by Li and Liâ€"O Centers in Silicon. Japanese Journal of Applied Physics, 2010, 49, 103001.	1.5	1
106	Investigation of mixing effects of silicon isotopes under shaveâ€off condition using atom probe tomography. Surface and Interface Analysis, 2014, 46, 1200-1203.	1.8	1
107	Effect of carbon situating at end-of-range defects on silicon self-diffusion investigated using pre-amorphized isotope multilayers. Japanese Journal of Applied Physics, 2016, 55, 036504.	1.5	1
108	Effect of fluorine on the suppression of boron diffusion in pre-amorphized silicon. Journal of Applied Physics, 2020, 128, 105701.	2.5	1

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109	Metal-Insulator Transition in Doped Semiconductors. Springer Proceedings in Physics, 2001, , 128-131.	0.2	1
110	Critical exponents for the metal-insulator transition of 70Ge:Ga in magnetic fields. Springer Proceedings in Physics, 2001, , 152-153.	0.2	1
111	Doping Position Control of Nitrogen-vacancy Centers in Diamond using Nitrogen-doped Chemical Vapor Deposition on Micropatterned Substrate. , 2013, , .		1
112	Metalâ€"insulator transition of NTD in magnetic fields. Physica B: Condensed Matter, 2000, 284-288, 1677-1678.	2.7	0
113	Single atom calculation in silicon. , 2011, , .		0
114	Position and density control of nitrogen-vacancy centers in diamond using micropatterned substrate for chemical vapor deposition. , 2013, , .		0
115	Silicon Quantum Information Processing. Lecture Notes in Physics, 2016, , 569-585.	0.7	0
116	Silicon Isotope Technology for Quantum Computing. , 2018, , .		0
117	Defects for quantum information processing in silicon. , 2018, , 241-263.		0
118	¹⁻¹ Forefront of Silicon Quantum Computing. , 2020, , .		0