Jeffrey C Mccallum

List of Publications by Year
in descending order

156	3,736	147801	144013
papers	citations	31 h-index	57 g-index

157	157	157	4004
all docs	docs citations	times ranked	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	Single site optical spectroscopy of coupled Er³⁺ ion pairs in silicon. Quantum Science and Technology, 2022, 7, 025019.	5.8	2
4	Valley population of donor states in highly strained silicon. Materials for Quantum Technology, 2022, 2, 025002.	3.1	2
5	Biomolecular modifications in the sacfry of Mogurnda adspersa in response to copper stress. Aquatic Toxicology, 2022, 248, 106179.	4.0	0
6	Hydrogen-Terminated Diamond MOSFETs Using Ultrathin Glassy Ga₂O₃ Dielectric Formed by Low-Temperature Liquid Metal Printing Method. ACS Applied Electronic Materials, 2022, 4, 2272-2280.	4.3	6
7	High-field magnetotransport studies of surface-conducting diamonds. Physical Review B, 2022, 105, .	3.2	0
8	Zeeman and hyperfine interactions of a single <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mmultiscripts><mml:mi>Er</mml:mi><mml:none /><mml:mrow><mml:mn>3</mml:mn><mml:mo>+</mml:mo></mml:mrow><mml:mprescripts /><mml:none /><mml:mn>167</mml:mn></mml:mmultiscripts></mml:math> ion in Si. Physical Review B, 2022, 105, .	3.2	5
9	Engineering long spin coherence times of spinâ€“orbit qubits in silicon. Nature Materials, 2021, 20, 38-42.	27.5	40
10	Isotopic enrichment of silicon by high fluence <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msup><mml:mrow /><mml:mn>28</mml:mn></mml:msup><mml:msup><mml:mtext>Si</mml:mtext><mml:mo>â^’</mml:mo></mml:msup></mml:mrow> ion implantation. Physical Review Materials, 2021, 5, .	2.4	3
11	Surface transfer doping of diamond using solution-processed molybdenum trioxide. Carbon, 2021, 175, 20-26.	10.3	5
12	Ultrashallow Junction Electrodes in Low-Loss Silicon Microring Resonators. Physical Review Applied, 2021, 15, .	3.8	2
13	Correlation between electronic micro-roughness and surface topography in two-dimensional surface conducting hydrogen-terminated diamond. Diamond and Related Materials, 2021, 116, 108377.	3.9	5
14	Donor-based qubits for quantum computing in silicon. Applied Physics Reviews, 2021, 8, .	11.3	13
15	Piezoresistance in Defect-Engineered Silicon. Physical Review Applied, 2021, 15, .	3.8	0
16	Infrared erbium photoluminescence enhancement in silicon carbide nano-pillars. Journal of Applied Physics, 2021, 130, .	2.5	10
17	MoO3 induces p-type surface conductivity by surface transfer doping in diamond. Applied Surface Science, 2020, 509, 144890.	6.1	30
18	Investigation of charge carrier trapping in H-terminated diamond devices. Applied Physics Letters, 2020, 117, 143507.	3.3	4

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19	High-resolution spectroscopy of individual erbium ions in strong magnetic fields. Physical Review B, 2020, 102, .	3.2	6
20	Engineering the spinâ€“orbit interaction in surface conducting diamond with a solid-state gate dielectric. Applied Physics Letters, 2020, 116, .	3.3	6
21	Epitaxial Formation of SiC on (100) Diamond. ACS Applied Electronic Materials, 2020, 2, 2003-2009.	4.3	5
22	Scanned Single-Electron Probe inside a Silicon Electronic Device. ACS Nano, 2020, 14, 9449-9455.	14.6	6
23	Coherent electrical control of a single high-spin nucleus in silicon. Nature, 2020, 579, 205-209.	27.8	79
24	Palladium forms Ohmic contact on hydrogen-terminated diamond down to 4â€‰K. Applied Physics Letters, 2020, 116, .	3.3	14
25	Controllable freezing of the nuclear spin bath in a single-atom spin qubit. Science Advances, 2020, 6, .	10.3	19
26	Strong spin-orbit interaction induced by transition metal oxides at the surface of hydrogen-terminated diamond. Carbon, 2020, 164, 244-250.	10.3	11
27	High-electron-affinity oxide V2O5 enhances surface transfer doping on hydrogen-terminated diamond. Diamond and Related Materials, 2020, 108, 107865.	3.9	14
28	Single Rare-Earth Ions as Atomic-Scale Probes in Ultrascaled Transistors. Nano Letters, 2019, 19, 5025-5030.	9.1	16
29	Thermal evolution of the indentation-induced phases of silicon. Journal of Applied Physics, 2019, 126, .	2.5	8
30	Microscopic Imaging of the Stress Tensor in Diamond Using in Situ Quantum Sensors. Nano Letters, 2019, 19, 4543-4550.	9.1	51
31	Electron spin relaxation of single phosphorus donors in metal-oxide-semiconductor nanoscale devices. Physical Review B, 2019, 99, .	3.2	22
32	Formation of an r8-Dominant Si Material. Physical Review Letters, 2019, 122, 105701.	7.8	19
33	<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi>g</mml:mi></mml:math> -factor and well-width fluctuations as a function of carrier density in the two-dimensional hole accumulation layer of transfer-doped diamond. Physical Review B, 2019, 99, .	3.2	11
34	Activation and electron spin resonance of near-surface implanted bismuth donors in silicon. Physical Review Materials, 2019, 3, .	2.4	5
35	Imaging with NV ensembles: beyond magnetometry. , 2019, , .		0
36	G-factor and well width variations for the two-dimensional hole gas in surface conducting diamond. Applied Physics Letters, 2018, 112, .	3.3	18

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37	Coherent control via weak measurements in P31 single-atom electron and nuclear spin qubits. Physical Review B, 2018, 98, .	3.2	15
38	Deep level transient spectroscopy study of heavy ion implantation induced defects in silicon. Journal of Applied Physics, 2018, 124, .	2.5	3
39	Irradiation-Induced Modification of the Superconducting Properties of Heavily-Boron-Doped Diamond. Physical Review Applied, 2018, 10, .	3.8	7
40	Exploring quantum chaos with a single nuclear spin. Physical Review E, 2018, 98, .	2.1	17
41	Spatial mapping of band bending in semiconductor devices using in situ quantum sensors. Nature Electronics, 2018, 1, 502-507.	26.0	77
42	A review on single photon sources in silicon carbide. Reports on Progress in Physics, 2017, 80, 034502.	20.1	163
43	Nanomechanical Sensing Using Spins in Diamond. Nano Letters, 2017, 17, 1496-1503.	9.1	95
44	Stimulated emission from nitrogen-vacancy centres in diamond. Nature Communications, 2017, 8, 14000.	12.8	60
45	Integration of Single-Photon Emitters into 3C-SiC Microdisk Resonators. ACS Photonics, 2017, 4, 462-468.	6.6	37
46	Creation and Functionalization of Defects in SiC by Proton Beam Writing. Materials Science Forum, 2017, 897, 233-237.	0.3	7
47	A single-atom quantum memory in silicon. Quantum Science and Technology, 2017, 2, 015009.	5.8	30
48	A dressed spin qubit in silicon. Nature Nanotechnology, 2017, 12, 61-66.	31.5	62
49	Deterministic doping. Materials Science in Semiconductor Processing, 2017, 62, 23-30.	4.0	26
50	Au-rich filamentary behavior and associated subband gap optical absorption in hyperdoped Si. Physical Review Materials, 2017, 1, .	2.4	29
51	Optical and electronic properties of sub-surface conducting layers in diamond created by MeV B-implantation at elevated temperatures. Journal of Applied Physics, 2016, 119, 223902.	2.5	13
52	Activation and control of visible single defects in 4H-, 6H-, and 3C-SiC by oxidation. Applied Physics Letters, 2016, 108, .	3.3	45
53	Hydrogen diffusion and segregation during solid phase epitaxial regrowth of preamorphized Si. Journal of Applied Physics, 2016, 119, 115103.	2.5	0
54	Strong and Tunable Spinâ€“Orbit Coupling in a Two-Dimensional Hole Gas in Ionic-Liquid Gated Diamond Devices. Nano Letters, 2016, 16, 3768-3773.	9.1	45

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55	Breaking the rotating wave approximation for a strongly driven dressed single-electron spin. Physical Review B, 2016, 94, .	3.2	31
56	Bell's inequality violation with spins in silicon. Nature Nanotechnology, 2016, 11, 242-246.	31.5	56
57	Atomic transport during solid-phase epitaxial recrystallization of amorphous germanium. Applied Physics Letters, 2015, 107, .	3.3	8
58	Micro-concave waveguide antenna for high photon extraction from nitrogen vacancy centers in nanodiamond. Scientific Reports, 2015, 5, 12013.	3.3	11
59	Single-photon emitting diode in silicon carbide. Nature Communications, 2015, 6, 7783.	12.8	162
60	Single atom devices by ion implantation. Journal of Physics Condensed Matter, 2015, 27, 154204.	1.8	61
61	Electrically controlling single-spin qubits in a continuous microwave field. Science Advances, 2015, 1, e1500022.	10.3	125
62	Erbium-doped slot waveguides containing size-controlled silicon nanocrystals. Journal of Applied Physics, 2015, 117, 163106.	2.5	3
63	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
64	Solid-Phase Epitaxy. , 2015, , 317-363.		11
65	Single-atom spin qubits in silicon. , 2014, , .		0
66	Optical spectroscopy of erbium doped monocrystalline vanadium dioxide. , 2014, , .		0
67	Development Of nanowire devices with quantum functionalities. , 2014, , .		0
68	Characterization of few-layered graphene grown by carbon implantation. , 2014, , .		0
69	Solid phase epitaxial regrowth of germanium containing nanoporous structures formed by ion implantation. , 2014, , .		1
70	High-fidelity adiabatic inversion of a ³¹P electron spin qubit in natural silicon. Applied Physics Letters, 2014, 104, 092115.	3.3	24
71	dLow Temperature of formation of Nickel Germanide by reaction of Nickel and Crystalline Germanium. Materials Research Society Symposia Proceedings, 2014, 1655, 1.	0.1	0
72	Optical switching and photoluminescence in erbium-implanted vanadium dioxide thin films. Journal of Applied Physics, 2014, 115, .	2.5	28

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73	Characterisation of nickel germanide formed on amorphous and crystalline germanium. , 2014, , .		0
74	Storing quantum information for 30 seconds in a nanoelectronic device. Nature Nanotechnology, 2014, 9, 986-991.	31.5	513
75	Fabrication and characterization of PECVD silicon nitride for RF MEMS applications. Microsystem Technologies, 2013, 19, 131-136.	2.0	7
76	Optical addressing of an individual erbium ion in silicon. Nature, 2013, 497, 91-94.	27.8	149
77	Evidence for the<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi mathvariant="bold">R</mml:mi><mml:mn>8</mml:mn></mml:math>Phase of Germanium. Physical Review Letters, 2013, 110, 085502.	7.8	27
78	Tunable optical antennas enabled by the phase transition in vanadium dioxide. Optics Express, 2013, 21, 27503.	3.4	66
79	Controlled deterministic implantation by nanostencil lithography at the limit of ion-aperture straggling. Nanotechnology, 2013, 24, 145304.	2.6	11
80	Optical Switching and Photoluminescence in Erbium Implanted Vanadium Dioxide Thin Films. Materials Research Society Symposia Proceedings, 2013, 1577, 1.	0.1	0
81	Investigation of amorphisation of germanium using modeling and experimental processes. Proceedings of SPIE, 2013, , .	0.8	0
82	Vanadium dioxide thickness effects on tunable optical antennas. Proceedings of SPIE, 2013, , .	0.8	3
83	Activation Energy and Blistering Rate in Hydrogen-implanted Semiconductors. Materials Research Society Symposia Proceedings, 2012, 1424, 79.	0.1	0
84	Dopant effects on solid phase epitaxy in silicon and germanium. Journal of Applied Physics, 2012, 111, .	2.5	9
85	Raman study on the phase transformations of the meta-stable phases of Si induced by indentation. , 2012, , .		0
86	Single-Ion Implantation for the Development of Si-Based MOSFET Devices with Quantum Functionalities. Advances in Materials Science and Engineering, 2012, 2012, 1-10.	1.8	15
87	Characterisation of solid-phase-epitaxy of amorphous germanium thin-films. , 2012, , .		0
88	Electrical characterisation of spin-coated a-IZO thin-film transistors. , 2012, , .		0
89	Ion-implantation and analysis for doped silicon slot waveguides. , 2012, , .		0
90	Ion-implantation and analysis for doped silicon slot waveguides. EPJ Web of Conferences, 2012, 35, 03002.	0.3	0

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91	Dopant effects on the photoluminescence of interstitial-related centers in ion implanted silicon. Journal of Applied Physics, 2012, 111, 094910.	2.5	3
92	Engineering chromium-related single photon emitters in single crystal diamonds. New Journal of Physics, 2011, 13, 045015.	2.9	31
93	Temperature dependence of Raman scattering from the high-pressure phases of Si induced by indentation. Physical Review B, 2011, 83, .	3.2	23
94	Effect of boron on formation of interstitialâ€related luminescence centres in ion implanted silicon. Physica Status Solidi (A) Applications and Materials Science, 2011, 208, 620-623.	1.8	2
95	Lattice location of nickel in diamond by RBS channelling and PIXE. Physica Status Solidi (A) Applications and Materials Science, 2011, 208, 42-46.	1.8	7
96	Surface damage on diamond membranes fabricated by ion implantation and lift-off. Applied Physics Letters, 2011, 98, .	3.3	20
97	Hydrogen in amorphous Si and Ge during solid phase epitaxy. Thin Solid Films, 2010, 518, 2317-2322.	1.8	5
98	Deep level transient spectroscopy study for the development of ion-implanted silicon field-effect transistors for spin-dependent transport. Thin Solid Films, 2010, 518, 2524-2527.	1.8	6
99	Modeling of Hydrogen Diffusion And Segregation in Amorphous Silicon During Solid Phase Epitaxy. ECS Transactions, 2010, 33, 157-164.	0.5	1
100	Deep-level transient spectroscopy study of channelled boron implantation in silicon.. , 2010, , .		0
101	Microstructure evolution in carbon-ion implanted sapphire. Journal of Applied Physics, 2010, 107, 023508.	2.5	4
102	Hydrogen refinement during solid phase epitaxy of buried amorphous silicon layers. Journal of Applied Physics, 2010, 108, .	2.5	5
103	Effect of boron on interstitial-related luminescence centers in silicon. Applied Physics Letters, 2010, 96, 051906.	3.3	13
104	Chromium single-photon emitters in diamond fabricated by ion implantation. Physical Review B, 2010, 81, .	3.2	97
105	Recent Insights In Solid Phase Epitaxy of Silicon and Germanium. ECS Transactions, 2010, 33, 237-248.	0.5	0
106	Nickel germanide formation via solid phase epitaxial regrowth of amorphous germanium. , 2010, , .		0
107	Comparison between implanted boron and phosphorus in silicon wafers.. , 2010, , .		1
108	Deep level transient spectroscopy study of defects at Si/SiO<inf>2</inf> and Si/Si<inf>3</inf>N<inf>4</inf> interfaces. , 2010, , .		0

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109	Photoluminescense of B and P doped Si nanocrystals fabricated by ion implantation. , 2010, , .		0
110	Advanced germanium devices: The development of materials and processing. , 2010, , .		0
111	Intrinsic and boron-enhanced hydrogen diffusion in amorphous silicon formed by ion implantation. Applied Physics Letters, 2009, 95, 101911.	3.3	10
112	Dopant enhanced H diffusion in amorphous silicon and its effect on the kinetics of solid phase epitaxy. Materials Science and Engineering B: Solid-State Materials for Advanced Technology, 2009, 157, 6-10.	3.5	9
113	Two-Level Ultrabright Single Photon Emission from Diamond Nanocrystals. Nano Letters, 2009, 9, 3191-3195.	9.1	132
114	Cathodoluminescence microanalysis of diamond nanocrystals in fused silicon dioxide. Journal of Applied Physics, 2008, 104, 113514.	2.5	4
115	Dislocation related band-edge photoluminescence in boron-implanted silicon. , 2008, , .		0
116	Ion Implantation Through Thin Silicon Dioxide Layers for Si-based Solid-State Quantum Computer Device Development. Materials Research Society Symposia Proceedings, 2008, 1074, 1.	0.1	7
117	Boron Enhanced H Diffusion in Amorphous Si Formed by Ion Implantation. Materials Research Society Symposia Proceedings, 2008, 1070, 1.	0.1	0
118	Intrinsic and Dopant-Enhanced Solid Phase Epitaxy in Amorphous Germanium. Materials Research Society Symposia Proceedings, 2008, 1070, 1.	0.1	0
119	Intrinsic and dopant-enhanced solid-phase epitaxy in amorphous germanium. Physical Review B, 2008, 77, .	3.2	47
120	Dopant-enhanced solid-phase epitaxy in buried amorphous silicon layers. Physical Review B, 2007, 76, .	3.2	36
121	Electrically detected magnetic resonance in ion-implanted Si:P nanostructures. Applied Physics Letters, 2006, 89, 182115.	3.3	81
122	Formation of carbon nanoclusters by implantation of keV carbon ions in fused silica followed by thermal annealing. , 2005, 5650, 35.		0
123	Donor activation and damage in Siâ€“SiO2from low-dose, low-energy ion implantation studied via electrical transport in MOSFETs. Semiconductor Science and Technology, 2005, 20, 363-368.	2.0	13
124	Kinetics of arsenic-enhanced solid phase epitaxy in silicon. Journal of Applied Physics, 2004, 95, 4427-4431.	2.5	13
125	Ion-channeling and Raman scattering study of damage accumulation in silicon. Journal of Applied Physics, 2004, 95, 1096-1101.	2.5	6
126	Conditions for the formation of Ti3+ by ion implantation of a-axis Î±-Al2O3. Materials Science and Engineering B: Solid-State Materials for Advanced Technology, 2004, 106, 257-262.	3.5	4

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127	Modeling the effect of hydrogen infiltration on the asymmetry in arsenic-enhanced solid phase epitaxy in silicon. Journal of Applied Physics, 2004, 96, 2381-2385.	2.5	6
128	Formation of Ti:sapphire via high-temperature processing of Ti-implanted sapphire crystals. , 2004, 5277, 375.		0
129	Progress in silicon-based quantum computing. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2003, 361, 1451-1471.	3.4	60
130	Defective Crystal Recovered from the Crystallization of Potassium-Doped Amorphous Silicon Films. Journal of the Electrochemical Society, 2003, 150, G266.	2.9	0
131	Defect formation due to the crystallization of deep amorphous volumes formed in silicon by mega electron volt (MeV) ion implantation. Journal of Materials Research, 2001, 16, 3229-3237.	2.6	5
132	Diamond nanocrystals formed by direct implantation of fused silica with carbon. Journal of Applied Physics, 2001, 90, 3007-3018.	2.5	32
133	Size dependence of structural stability in nanocrystalline diamond. Physical Review B, 2000, 62, R16360-R16363.	3.2	86
134	Formation of Ti3+ in sapphire by co-implantation of Ti and O ions. Applied Physics Letters, 2000, 76, 424-426.	3.3	15
135	Instability of nanocavities in amorphous silicon. Applied Physics Letters, 1999, 74, 2313-2315.	3.3	17
136	Surface morphological structures in ultra-high-dose self-implanted silicon. Applied Physics Letters, 1998, 73, 1811-1813.	3.3	4
137	Microstructure of Ultra High Dose Self Implanted Silicon. Materials Research Society Symposia Proceedings, 1997, 504, 27.	0.1	0
138	Kinetics of Intrinsic and Dopant-Enhanced Solid Phase Epitaxy in Buried Amorphous Si Layers. Materials Research Society Symposia Proceedings, 1996, 438, 119.	0.1	4
139	Kinetics of Intrinsic and Dopant-Enhanced Solid Phase Epitaxy in Buried Amorphous Si Layers. Materials Research Society Symposia Proceedings, 1996, 439, 137.	0.1	0
140	Kinetics of solid phase epitaxy in buried amorphous Si layers formed by MeV ion implantation. Applied Physics Letters, 1996, 69, 925-927.	3.3	22
141	Annealingâ€environment effects in the epitaxial regrowth of ionâ€beamâ€amorphized layers on CaTiO3. Journal of Applied Physics, 1995, 78, 1519-1527.	2.5	10
142	Hardness and elastic modulus of zircon as a function of heavy-particle irradiation dose:. Radiation Effects and Defects in Solids, 1994, 132, 131-141.	1.2	25
143	Hydrogen catalyzed crystallization of strontium titanate. Journal of Applied Physics, 1994, 76, 2711-2718.	2.5	33
144	Colloidal Au and Ag precipitates formed in Al2O3 by ion implantation and annealing. Scripta Materialia, 1993, 3, 447-457.	0.5	24

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145	Structural Analysis of Amorphous Phosphates Using High Performance Liquid Chromatography. Materials Research Society Symposia Proceedings, 1993, 321, 13.	0.1	2
146	The effect of annealing environments on the epitaxial recrystallization of ion-beam-amorphized SrTiO₃. Journal of Materials Research, 1992, 7, 717-724.	2.6	32
147	Electronic damage in the ion-beam amorphization ofPb2P2O7. Physical Review B, 1992, 46, 3215-3218.	3.2	11
148	Microstructural and chemical effects in Al₂O₃ implanted with iron at 77 K and annealed in oxidizing or reducing atmospheres. Journal of Materials Research, 1991, 6, 2160-2177.	2.6	25
149	Chemically stabilised ion implanted waveguides in sapphire. Electronics Letters, 1990, 26, 1193.	1.0	18
150	Structural differences between the glass state and ion-beam-amorphized states of lead pyrophosphate. Journal of Non-Crystalline Solids, 1990, 126, 179-193.	3.1	31
151	Structural inequivalence of the ion-damageâ€“produced amorphous state and the glass state in lead pyrophosphate. Physical Review Letters, 1989, 62, 1138-1141.	7.8	25
152	Ion implantation and thermal annealing of single crystals of the type YBa2Cu3Ox. Materials Letters, 1988, 6, 374-378.	2.6	11
153	Channeling Contrast Microscopy: A Powerful Tool for Examining Semiconductor Structures. Materials Research Society Symposia Proceedings, 1986, 69, 305.	0.1	2
154	MeV Helium Microbeam Analysis: Applications to Semiconductor Structures. Materials Research Society Symposia Proceedings, 1985, 48, 403.	0.1	2
155	Helium Microprobe Analysis of Semiconductor Materials. IEEE Transactions on Nuclear Science, 1983, 30, 1228-1231.	2.0	6
156	Channeling contrast microscopy: Application to semiconductor structures. Applied Physics Letters, 1983, 42, 827-829.	3.3	33