Sven Rogge

List of Publications by Year
in descending order

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163	5,004	109321	98798
papers	citations	35 h-index	67 g-index

164	164	164	4395
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Silicon quantum electronics. Reviews of Modern Physics, 2013, 85, 961-1019.	45.6	892
2	Gate-induced quantum-confinement transition of a single dopant atom in a siliconÂFinFET. Nature Physics, 2008, 4, 656-661.	16.7	287
3	Transport Spectroscopy of a Single Dopant in a Gated Silicon Nanowire. Physical Review Letters, 2006, 97, 206805.	7.8	234
4	Scaling of nano-Schottky-diodes. Applied Physics Letters, 2002, 81, 3852-3854.	3.3	229
5	A surface code quantum computer in silicon. Science Advances, 2015, 1, e1500707.	10.3	193
6	Optical addressing of an individual erbium ion in silicon. Nature, 2013, 497, 91-94.	27.8	149
7	Ambipolar Cu- and Fe-phthalocyanine single-crystal field-effect transistors. Applied Physics Letters, 2005, 86, 262109.	3.3	121
8	Enhanced tunneling across nanometer-scale metalâ€“semiconductor interfaces. Applied Physics Letters, 2002, 80, 2568-2570.	3.3	108
9	Competing Periodicities in Fractionally Filled One-Dimensional Bands. Physical Review Letters, 2006, 96, 076801.	7.8	97
10	Electronic Transport through Electron-Doped Metal Phthalocyanine Materials. Advanced Materials, 2006, 18, 320-324.	21.0	91
11	Spatially resolving valley quantum interference of a donor in silicon. Nature Materials, 2014, 13, 605-610.	27.5	90
12	Coherent frequency up-conversion of microwaves to the optical telecommunications band in an Er:YSO crystal. Physical Review A, 2015, 92, .	2.5	84
13	Quantum simulation of the Hubbard model with dopant atoms in silicon. Nature Communications, 2016, 7, 11342.	12.8	81
14	Full-visible multifunctional aluminium metasurfaces by in situ anisotropic thermoplasmonic laser printing. Nanoscale Horizons, 2019, 4, 601-609.	8.0	77
15	Low Temperature ac Dielectric Response of Glasses to High dc Electric Fields. Physical Review Letters, 1994, 73, 268-271.	7.8	76
16	Correlation between Molecular Orbitals and Doping Dependence of the Electrical Conductivity in Electron-Doped Metalâ^'Phthalocyanine Compounds. Journal of the American Chemical Society, 2005, 127, 12210-12211.	13.7	72
17	An Accurate Single-Electron Pump Based on a Highly Tunable Silicon Quantum Dot. Nano Letters, 2014, 14, 3405-3411.	9.1	69
18	Evidence for the Importance of Interactions between Active Defects in Glasses. Physical Review Letters, 1996, 76, 3136-3139.	7.8	66

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19	Orbital Stark effect and quantum confinement transition of donors in silicon. Physical Review B, 2009, 80, .	3.2	56
20	Magnetic-Field Probing of an SU(4) Kondo Resonance in a Single-Atom Transistor. Physical Review Letters, 2012, 108, 046803.	7.8	52
21	Radio frequency measurements of tunnel couplings and singletâ€“triplet spin states in Si:P quantum dots. Nature Communications, 2015, 6, 8848.	12.8	49
22	Single-Shot Single-Gate rf Spin Readout in Silicon. Physical Review X, 2018, 8, .	8.9	47
23	Spatial metrology of dopants in silicon with exact lattice site precision. Nature Nanotechnology, 2016, 11, 763-768.	31.5	45
24	Optimal operation points for ultrafast, highly coherent Ge hole spin-orbit qubits. Npj Quantum Information, 2021, 7, .	6.7	45
25	Gate-induced<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>g</mml:mi></mml:math>-factor control and dimensional transition for donors in multivalley semiconductors. Physical Review B, 2009, 80, .	3.2	44
26	Few electron limit of n-type metal oxide semiconductor single electron transistors. Nanotechnology, 2012, 23, 215204.	2.6	44
27	Charge-Insensitive Single-Atom Spin-Orbit Qubit in Silicon. Physical Review Letters, 2016, 116, 246801.	7.8	44
28	Subthreshold channels at the edges of nanoscale triple-gate silicon transistors. Applied Physics Letters, 2007, 90, 073502.	3.3	43
29	Stark effect in shallow impurities inSi. Physical Review B, 2004, 70, .	3.2	40
30	Charge pumping through a single donor atom. New Journal of Physics, 2014, 16, 063036.	2.9	40
31	Engineering long spin coherence times of spinâ€“orbit qubits in silicon. Nature Materials, 2021, 20, 38-42.	27.5	40
32	Evidence for the formation of a Mott state in potassium-intercalated pentacene. Physical Review B, 2009, 79, .	3.2	38
33	Formation of Atom Wires on Vicinal Silicon. Physical Review Letters, 2004, 93, 126106.	7.8	37
34	Tunable Kondo Effect in a Single Donor Atom. Nano Letters, 2010, 10, 455-460.	9.1	37
35	Integrated logic circuits using single-atom transistors. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 13969-13972.	7.1	37
36	Probing the Spin States of a Single Acceptor Atom. Nano Letters, 2014, 14, 1492-1496.	9.1	36

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37	Nonlinear dielectric response of glasses at low temperature. Physical Review B, 1997, 55, 11256-11262.	3.2	34
38	Gate-induced ionization of single dopant atoms. Physical Review B, 2003, 68, .	3.2	32
39	Transcending Binary Logic by Gating Three Coupled Quantum Dots. Nano Letters, 2007, 7, 2795-2799.	9.1	32
40	Engineered valley-orbit splittings in quantum-confined nanostructures in silicon. Physical Review B, 2011, 83, .	3.2	32
41	Compact Mach-Zehnder interferometer based on self-collimation of light in a silicon photonic crystal. Optics Express, 2010, 18, 6437.	3.4	31
42	Quantum computing with acceptor spins in silicon. Nanotechnology, 2016, 27, 244001.	2.6	31
43	Superadiabatic quantum state transfer in spin chains. Physical Review A, 2017, 95, .	2.5	31
44	High-Sensitivity Charge Detection with a Single-Lead Quantum Dot for Scalable Quantum Computation. Physical Review Applied, 2016, 6, .	3.8	30
45	Charge Dynamics and Spin Blockade in a Hybrid Double Quantum Dot in Silicon. Physical Review X, 2015, 5, .	8.9	29
46	Wave Function Control over a Single Donor Atom. Nano Letters, 2013, 13, 1476-1480.	9.1	28
47	Heterointerface effects on the charging energy of the shallow<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msup><mml:mi>D</mml:mi><mml:mo>â^'</mml:mo></mml:msup></mml:mrow></mml:math>ground state in silicon: Role of dielectric mismatch. Physical Review B, 2010, 82, .	3.2	26
48	Electric field reduced charging energies and two-electron bound excited states of single donors in silicon. Physical Review B, 2011, 84, .	3.2	26
49	Readout and control of the spin-orbit states of two coupled acceptor atoms in a silicon transistor. Science Advances, 2018, 4, eaat9199.	10.3	26
50	Reconfigurable Logic Devices on a Single Dopant Atomâ€"Operation up to a Full Adder by Using Electrical Spectroscopy. ChemPhysChem, 2009, 10, 162-173.	2.1	25
51	Ternary logic implemented on a single dopant atom field effect silicon transistor. Applied Physics Letters, 2010, 96, .	3.3	25
52	Drain current modulation in a nanoscale field-effect-transistor channel by single dopant implantation. Applied Physics Letters, 2010, 96, .	3.3	25
53	Potassium Phthalocyanine, KPc:Â One-Dimensional Molecular Stacks Bridged by K+Ions. Inorganic Chemistry, 2006, 45, 10472-10478.	4.0	22
54	Lifetime-Enhanced Transport in Silicon due to Spin and Valley Blockade. Physical Review Letters, 2011, 107, 136602.	7.8	22

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55	Radio frequency reflectometry and charge sensing of a precision placed donor in silicon. Applied Physics Letters, 2015, 107, .	3.3	22
56	Scaling of micro-fabricated nanometer-sized Schottky diodes. Microelectronic Engineering, 2002, 64, 429-433.	2.4	21
57	Valley interference and spin exchange at the atomic scale in silicon. Nature Communications, 2020, 11, 6124.	12.8	21
58	Spatially resolved resonant tunneling on single atoms in silicon. Journal of Physics Condensed Matter, 2015, 27, 154203.	1.8	20
59	Ultrastrong coupling between a microwave resonator and antiferromagnetic resonances of rare-earth ion spins. Physical Review B, 2020, 101, .	3.2	20
60	Probing the Quantum States of a Single Atom Transistor at Microwave Frequencies. ACS Nano, 2017, 11, 2444-2451.	14.6	19
61	Strain Sensitive Effect in a Triangular Lattice Photonic Crystal Hole-Modified Nanocavity. IEEE Sensors Journal, 2011, 11, 2657-2663.	4.7	18
62	Interplay between quantum confinement and dielectric mismatch for ultrashallow dopants. Physical Review B, 2013, 87, .	3.2	18
63	Donor wave functions in Si gauged by STM images. Physical Review B, 2016, 93, .	3.2	18
64	Two-electron states of a group-V donor in silicon from atomistic full configuration interactions. Physical Review B, 2018, 97, .	3.2	18
65	Ga-induced atom wire formation and passivation of stepped Si(112). Physical Review B, 2005, 72, .	3.2	17
66	Transport through a single donor in p-type silicon. Applied Physics Letters, 2013, 103, 043106.	3.3	17
67	Strain and electric field control of hyperfine interactions for donor spin qubits in silicon. Physical Review B, 2015, 91, .	3.2	17
68	Radio-frequency dispersive detection of donor atoms in a field-effect transistor. Applied Physics Letters, 2014, 104, 102107.	3.3	16
69	Donor hyperfine Stark shift and the role of central-cell corrections in tight-binding theory. Journal of Physics Condensed Matter, 2015, 27, 154207.	1.8	16
70	Single Rare-Earth Ions as Atomic-Scale Probes in Ultrascaled Transistors. Nano Letters, 2019, 19, 5025-5030.	9.1	16
71	Single dopant impact on electrical characteristics of SOI NMOSFETs with effective length down to 10nm. , 2010, , .		15
72	Interface-induced heavy-hole/light-hole splitting of acceptors in silicon. Applied Physics Letters, 2015, 106, .	3.3	15

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73	Conductance distribution in nanometer-sized semiconductor devices due to dopant statistics. Physical Review B, 2004, 69, .	3.2	14
74	Valley Filtering in Spatial Maps of Coupling between Silicon Donors and Quantum Dots. Physical Review X, 2018, 8, .	8.9	13
75	Specific detection by flow cytometry of histidine-tagged ligands bound to their receptors using a tag-specific monoclonal antibody. Journal of Immunological Methods, 1999, 226, 139-145.	1.4	12
76	Multivalley envelope function equations and effective potentials for phosphorus impurity in silicon. Physical Review B, 2015, 92, .	3.2	12
77	Direct observation by resonant tunneling of theB+level in aÎ´-doped silicon barrier. Physical Review B, 2004, 69, .	3.2	11
78	Entanglement control and magic angles for acceptor qubits in Si. Applied Physics Letters, 2018, 113, .	3.3	11
79	Gigahertz Single-Electron Pumping Mediated by Parasitic States. Nano Letters, 2018, 18, 4141-4147.	9.1	11
80	Interactions between active defects in glasses at low temperatures. European Physical Journal D, 1996, 46, 3295-3302.	0.4	10
81	Controlled Self-Organization of Atom Vacancies in Monatomic Gallium Layers. Physical Review Letters, 2007, 99, 116102.	7.8	10
82	Thermionic Emission as a Tool to Study Transport in Undoped nFinFETs. IEEE Electron Device Letters, 2010, 31, 150-152.	3.9	10
83	Electrically Addressing a Molecule-Like Donor Pair in Silicon: An Atomic Scale Cyclable Full Adder Logic. Journal of Physical Chemistry C, 2010, 114, 20380-20386.	3.1	10
84	Interface Trap Density Metrology of State-of-the-Art Undoped Si n-FinFETs. IEEE Electron Device Letters, 2011, 32, 440-442.	3.9	10
85	Single-Electron Capacitance Spectroscopy of Individual Dopants in Silicon. Nano Letters, 2011, 11, 5208-5212.	9.1	10
86	Coherent transport through a double donor system in silicon. Applied Physics Letters, 2010, 96, 072110.	3.3	9
87	Mass Production of Silicon MOS-SETs: Can We Live with Nano-Devicesâ€™ Variability?. Procedia Computer Science, 2011, 7, 266-268.	2.0	9
88	A Probabilistic Finite State Logic Machine Realized Experimentally on a Single Dopant Atom. Nano Letters, 2017, 17, 1846-1852.	9.1	9
89	Flopping-Mode Electric Dipole Spin Resonance in Phosphorus Donor Qubits in Silicon. Physical Review Applied, 2022, 17, .	3.8	9
90	Field-based scanning tunneling microscope manipulation of antimony dimers on Si(001). Journal of Vacuum Science & Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena, 2001, 19, 659.	1.6	8

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91	Transmission measurement of the photonic band gap of GaN photonic crystal slabs. Applied Physics Letters, 2008, 93, 051117.	3.3	8
92	Balanced ternary addition using a gated silicon nanowire. Applied Physics Letters, 2011, 99, 263109.	3.3	8
93	Dynamics of a single-atom electron pump. Scientific Reports, 2017, 7, 44371.	3.3	8
94	Nonequilibrium and hysteretic low temperature dielectric response to strain in glasses. Journal of Low Temperature Physics, 1997, 106, 717-725.	1.4	7
95	Technology for nanoelectronic devices based on ultra-high vacuum scanning tunneling microscopy on the Si(100) surface. Microelectronic Engineering, 1999, 46, 133-136.	2.4	7
96	Electronic states and valley-orbit coupling in linear and planar molecules formed by coupled P donors in silicon. Physical Review B, 2017, 95, .	3.2	7
97	He3 immersion cell for ultralow temperature study of amorphous solids. Review of Scientific Instruments, 1997, 68, 1831-1834.	1.3	6
98	Surface polymerization of epitaxial Sb wires on Si(001). Physical Review B, 2000, 62, 15341-15344.	3.2	6
99	Electron transport and tunnelling spectroscopy in alkali doped metal phthalocyanines. European Physical Journal Special Topics, 2004, 114, 607-610.	0.2	6
100	Transport-based dopant metrology in advanced FinFETs. , 2008, , .		6
101	Interface trap density metrology from sub-threshold transport in highly scaled undoped Si n-FinFETs. Journal of Applied Physics, 2011, 110, 124507.	2.5	6
102	A planar Al-Si Schottky barrier metalâ€“oxideâ€“semiconductor field effect transistor operated at cryogenic temperatures. Applied Physics Letters, 2015, 107, .	3.3	6
103	Resonant tunneling spectroscopy of valley eigenstates on a donor-quantum dot coupled system. Applied Physics Letters, 2016, 108, 152102.	3.3	6
104	Hole spin echo envelope modulations. Physical Review B, 2019, 100, .	3.2	6
105	High-resolution spectroscopy of individual erbium ions in strong magnetic fields. Physical Review B, 2020, 102, .	3.2	6
106	Scanned Single-Electron Probe inside a Silicon Electronic Device. ACS Nano, 2020, 14, 9449-9455.	14.6	6
107	Spin-Photon Coupling for Atomic Qubit Devices in Silicon. Physical Review Applied, 2022, 17, .	3.8	6
108	Magnetic flux tuning of Fano-Kondo interplay in a parallel double quantum dot system. Physical Review B, 2013, 87, .	3.2	5

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109	Towards visualisation of central-cell-effects in scanning tunnelling microscope images of subsurface dopant qubits in silicon. Nanoscale, 2017, 9, 17013-17019.	5.6	5
110	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
111	Low temperature time and electric field dependence of the dielectric constant in amorphous materials. Physica B: Condensed Matter, 1994, 194-196, 407-408.	2.7	4
112	Single-dopant spectroscopy and sub-threshold channels at the corners of triple-gate FinFETs. , 2006, , .		4
113	Non-local coupling of two donor-bound electrons. New Journal of Physics, 2013, 15, 033020.	2.9	4
114	Novel characterization of dopant-based qubits. MRS Bulletin, 2021, 46, 616-622.	3.5	4
115	Time-Resolved Photoionization Detection of a Single Er³⁺ Ion in Silicon. Nano Letters, 2022, 22, 396-401.	9.1	4
116	Shallow dopant pairs in silicon: An atomistic full configuration interaction study. Physical Review B, 2022, 105, .	3.2	4
117	Anomalous behavior of Îµ(Ï‰) in glasses at low temperature due to bias application. European Physical Journal D, 1996, 46, 2263-2264.	0.4	3
118	Contact and alignment marker technology for atomic scale device fabrication. Microelectronic Engineering, 1998, 41-42, 567-570.	2.4	3
119	Electrical transport through ultrathin ordered K3C60 films on Si. Carbon, 2000, 38, 1647-1651.	10.3	3
120	Single dopants learn their place. Nature Nanotechnology, 2010, 5, 100-101.	31.5	3
121	Implementation of Multivariable Logic Functions in Parallel by Electrically Addressing a Molecule of Three Dopants in Silicon. ChemPhysChem, 2017, 18, 1790-1797.	2.1	3
122	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
123	Dielectric response of two level systems to strain fields at low temperatures. European Physical Journal D, 1996, 46, 2265-2266.	0.4	2
124	Single domain transport measurements ofC60films. Physical Review B, 2003, 67, .	3.2	2
125	Group-theoretical analysis of double acceptors in a magnetic field: Identification of theSi:B+ground state. Physical Review B, 2004, 69, .	3.2	2
126	Atomistic Understanding of a Single Gated Dopant Atom in a MOSFET. Materials Research Society Symposia Proceedings, 2008, 1067, 1.	0.1	2

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127	A low temperature surface preparation method for STM nano-lithography on Si(100). Applied Surface Science, 2010, 256, 5042-5045.	6.1	2
128	Single Ion Implantation into Si-Based Devices. ECS Transactions, 2010, 33, 179-189.	0.5	2
129	Querying a quasi-classical Oracle: One-bit function identification problem implemented in a single atom transistor. Europhysics Letters, 2012, 99, 28004.	2.0	2
130	Ultrashallow Junction Electrodes in Low-Loss Silicon Microring Resonators. Physical Review Applied, 2021, 15, .	3.8	2
131	Single site optical spectroscopy of coupled Er³⁺ ion pairs in silicon. Quantum Science and Technology, 2022, 7, 025019.	5.8	2
132	Valley population of donor states in highly strained silicon. Materials for Quantum Technology, 2022, 2, 025002.	3.1	2
133	Density waves in atomic necklaces. Europhysics News, 2006, 37, 27-30.	0.3	1
134	One-dimensional Sub-threshold Channels In Nanoscale Triple-gate Silicon Transistors. AIP Conference Proceedings, 2007, , .	0.4	1
135	Sample variability and time stability in scaled silicon nanowires. , 2009, , .		1
136	Strain sensitivity of a modified single-defect photonic crystal nanocavity for mechanical sensing. , 2010, , .		1
137	Publisherâ€™s Note: Engineered valley-orbit splittings in quantum-confined nanostructures in silicon [Phys. Rev. B83, 195323 (2011)]. Physical Review B, 2011, 83, .	3.2	1
138	Atomic clocks in the solid state. Nature Nanotechnology, 2013, 8, 544-545.	31.5	1
139	Local Kondo temperatures in atomic chains. Physical Review B, 2015, 91, .	3.2	1
140	Anomalous dielectric properties of amorphous solids at low temperatures. Physica B: Condensed Matter, 1996, 219-220, 243-246.	2.7	0
141	Selective Aluminum CVD on Si(100) From DMAH. Materials Research Society Symposia Proceedings, 1999, 580, 141.	0.1	0
142	Towards Tunneling Through a Single Dopant Atom. AIP Conference Proceedings, 2005, , .	0.4	0
143	Determination of the eigenstates and wavefunctions of a single gated As donor. , 2008, , .		0
144	Level Spectrum of a Single Gated Arsenic Donor in a Three Terminal Geometry. Materials Research Society Symposia Proceedings, 2008, 1117, 103.	0.1	0

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145	Transport spectroscopy of a single atom in a FinFET. Journal of Physics: Conference Series, 2008, 109, 012003.	0.4	0
146	Sub-threshold study of undoped trigate nFinFET. Thin Solid Films, 2010, 518, 2521-2523.	1.8	0
147	+Level Spectrum Of Single Gated As Donors. , 2010, , .		0
148	Innovative characterization techniques for ultra-scaled FinFETs. , 2010, , .		0
149	Photonic crystal Mach-Zehnder interferometer operating in the self-collimation mode of light. Proceedings of SPIE, 2010, , .	0.8	0
150	A novel Kondo effect in single atom transistors. , 2010, , .		0
151	Mapping of single donors in nano-scale MOSFETs at low temperature. , 2012, , .		0
152	Photo-ionisation spectra of single erbium centres by charge sensing with a nano transistor. , 2012, , .		0
153	Charge pumping through isolated dopant atoms. , 2014, , .		0
154	Effects of electrostatic confinement in a silicon single-electron pump. , 2014, , .		0
155	A silicon single-electron pump with tunable electrostatic confinement. , 2014, , .		0
156	Modeling the pumping of electrons through a single dopant atom in a Si MOSFET. , 2014, , .		0
157	Probing a single acceptor in a silicon nanotransistor. , 2014, , .		0
158	Upconversion of Microwave to Optical Photons using Erbium Impurities in a Solid. , 2015, , .		0
159	Single dopants in semiconductors. Journal of Physics Condensed Matter, 2015, 27, 150301.	1.8	0
160	Certification of spin-based quantum simulators. Physical Review A, 2020, 101, .	2.5	0
161	Mach-Zehnder interferometer based on collimation effect of photonic crystal. , 2008, , .		0
162	Circuits with Single-Atom Devices. , 2013, , .		0

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163	Orbital Structure and Transport Characteristics of Single Donors. , 2013, , .		0