

Matthew J Sellars

List of Publications by Year in descending order

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91
papers

5,591
citations

136950

32
h-index

74163

75
g-index

92
all docs

92
docs citations

92
times ranked

3488
citing authors

#	ARTICLE	IF	CITATIONS
1	Nitrogen-vacancy center in diamond: Model of the electronic structure and associated dynamics. <i>Physical Review B</i> , 2006, 74, .	3.2	501
2	Optically addressable nuclear spins in a solid with a six-hour coherence time. <i>Nature</i> , 2015, 517, 177-180.	27.8	500
3	Efficient quantum memory for light. <i>Nature</i> , 2010, 465, 1052-1056.	27.8	495
4	Stopped Light with Storage Times Greater than One Second Using Electromagnetically Induced Transparency in a Solid. <i>Physical Review Letters</i> , 2005, 95, 063601.	7.8	448
5	Observation and control of blinking nitrogen-vacancy centres in discrete nanodiamonds. <i>Nature Nanotechnology</i> , 2010, 5, 345-349.	31.5	417
6	Photon echo quantum memory in solid state systems. <i>Laser and Photonics Reviews</i> , 2010, 4, 244-267.	8.7	351
7	Photon Echoes Produced by Switching Electric Fields. <i>Physical Review Letters</i> , 2006, 96, 043602.	7.8	221
8	Dynamic Decoherence Control of a Solid-State Nuclear-Quadrupole Qubit. <i>Physical Review Letters</i> , 2005, 95, 030506.	7.8	183
9	Coherence time of over a second in a telecom-compatible quantum memory storage material. <i>Nature Physics</i> , 2018, 14, 50-54.	16.7	182
10	Electro-Optic Quantum Memory for Light Using Two-Level Atoms. <i>Physical Review Letters</i> , 2008, 100, 023601.	7.8	172
11	Method of Extending Hyperfine Coherence Times in $\text{Pr}^{3+}:\text{Y}_2\text{SiO}_5$. <i>Physical Review Letters</i> , 2004, 92, 077601.	7.8	154
12	Optical addressing of an individual erbium ion in silicon. <i>Nature</i> , 2013, 497, 91-94.	27.8	149
13	Infrared emission of the NV centre in diamond: Zeeman and uniaxial stress studies. <i>New Journal of Physics</i> , 2008, 10, 103024.	2.9	125
14	Optical spin polarisation of the N-V centre in diamond. <i>Journal of Luminescence</i> , 2004, 107, 245-248.	3.1	91
15	Demonstration of Conditional Quantum Phase Shift Between Ions in a Solid. <i>Physical Review Letters</i> , 2004, 93, 130503.	7.8	88
16	Accurate measurement of the 12.6 GHz "clock" transition in trapped $^{171}\text{Yb}^+$ ions. <i>IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control</i> , 1997, 44, 344-354.	3.0	82
17	Measurement of the optically induced spin polarisation of N-V centres in diamond. <i>Diamond and Related Materials</i> , 2006, 15, 586-588.	3.9	81
18	NV^0 pair centre in 1b diamond. <i>New Journal of Physics</i> , 2018, 20, 113037.	2.9	79

#	ARTICLE	IF	CITATIONS
19	Experimental demonstration of quantum-state tomography and qubit-qubit interactions for rare-earth-metal-ion-based solid-state qubits. <i>Physical Review A</i> , 2004, 69, .	2.5	78
20	Characterization of the hyperfine interaction in europium-doped yttrium orthosilicate and europium chloride hexahydrate. <i>Physical Review B</i> , 2006, 74, .	3.2	65
21	Strong-coupling cavity QED using rare-earth-metal-ion dopants in monolithic resonators: What you can do with a weak oscillator. <i>Physical Review A</i> , 2009, 80, .	2.5	64
22	Multimodal Properties and Dynamics of Gradient Echo Quantum Memory. <i>Physical Review Letters</i> , 2008, 101, 203601.	7.8	62
23	Photon-echo quantum memories in inhomogeneously broadened two-level atoms. <i>Physical Review A</i> , 2011, 84, .	2.5	58
24	Solid State Coherent Transient Measurements Using Hard Optical Pulses. <i>Physical Review Letters</i> , 2000, 84, 1152-1155.	7.8	56
25	Analytic treatment of controlled reversible inhomogeneous broadening quantum memories for light using two-level atoms. <i>Physical Review A</i> , 2008, 78, .	2.5	52
26	Hyperfine interaction in ground and excited states of praseodymium-doped yttrium orthosilicate. <i>Physical Review B</i> , 2002, 66, .	3.2	46
27	Reducing decoherence in optical and spin transitions in rare-earth-metal-ion-doped materials. <i>Physical Review A</i> , 2012, 85, .	2.5	42
28	Generation of Light with Multimode Time-Delayed Entanglement Using Storage in a Solid-State Spin-Wave Quantum Memory. <i>Physical Review Letters</i> , 2016, 117, 020501.	7.8	42
29	Very high Q microwave spectroscopy on trapped $^{171}\text{Yb}^+$ ions: application as a frequency standard. <i>IEEE Transactions on Instrumentation and Measurement</i> , 1995, 44, 113-116.	4.7	40
30	Observation of Photon Echoes From Evanescently Coupled Rare-Earth Ions in a Planar Waveguide. <i>Physical Review Letters</i> , 2015, 115, 013601.	7.8	38
31	Nonclassical photon streams using rephased amplified spontaneous emission. <i>Physical Review A</i> , 2010, 81, .	2.5	36
32	Time-resolved ultranarrow optical hole burning of a crystalline solid: $\text{Y}_2\text{O}_3:\text{Eu}^{3+}$. <i>Journal of the Optical Society of America B: Optical Physics</i> , 1994, 11, 1468.	2.1	33
33	Measurement of the ground-state hyperfine coherence time of $^{151}\text{Eu}^{3+}:\text{Y}_2\text{SiO}_5$. <i>Journal of the Optical Society of America B: Optical Physics</i> , 2007, 24, 2479.	2.1	31
34	Precision Measurement of Electronic Ion-Ion Interactions between Neighboring Eu^{3+} Centers. <i>Physical Review Letters</i> , 2013, 111, 240501.	7.8	29
35	Demonstration of Photon-Echo Rephasing of Spontaneous Emission. <i>Physical Review Letters</i> , 2012, 109, 093603.	7.8	27
36	Site selective excitation, upconversion and laser operation in $\text{Er}^{3+}:\text{LiKYF}_5$. <i>Optics Communications</i> , 2001, 188, 219-232.	2.1	26

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37	Coherent information storage with photon echoes produced by switching electric fields. Journal of Luminescence, 2007, 127, 94-97.	3.1	25
38	Performance of a prototype microwave frequency standard based on laser-detected, trapped $^{171}\text{Yb}^+$ ions. Applied Physics B: Lasers and Optics, 1995, 60, 519-527.	2.2	24
39	Optical lifetime and linewidth studies of the transition in Pr^{3+} : A potential material for quantum memory applications. Journal of Luminescence, 2013, 133, 152-156.	3.1	24
40	Energy transfer and upconversions in cubic $\text{Cs}_2\text{NaYCl}_6:\text{Er}^{3+}$ and $\text{Cs}_2\text{NaErCl}_6$. Physical Review B, 1997, 56, 4518-4528.	3.2	23
41	Ligand isotope structure of the optical transition in $\text{Pr}^{3+}:\text{Y}_2\text{SiO}_5$. Physical Review B, 2004, 69, 045111.	3.2	23
42	Demonstration of the reduction of decoherent errors in a solid-state qubit using dynamic decoupling techniques. Physical Review A, 2009, 80, .	2.5	22
43	Demonstration of a dynamic bandpass frequency filter in a rare-earth ion-doped crystal. Journal of the Optical Society of America B: Optical Physics, 2013, 30, 1173.	2.1	21
44	Investigation of static electric dipole-dipole coupling induced optical inhomogeneous broadening in $\text{Eu}^{3+}:\text{Y}_2\text{SiO}_5$. Journal of Luminescence, 2004, 107, 150-154.	3.1	20
45	Initialization protocol for efficient quantum memories using resolved hyperfine structure. Physical Review Research, 2021, 3, .	3.6	18
46	Single Rare-Earth Ions as Atomic-Scale Probes in Ultrascaled Transistors. Nano Letters, 2019, 19, 5025-5030.	9.1	16
47	Pr^{3+} interaction in $\text{Pr}^{3+}:\text{Y}_2\text{SiO}_5$. Journal of Luminescence, 2004, 107, 347-350.	3.1	15
48	Photon echo without a free induction decay in a double- λ system. Optics Letters, 2011, 36, 1272.	3.3	15
49	Effect of the Bloch - Siegert shift in a strongly driven transition: asymmetric Autler - Townes profile. Journal of Physics B: Atomic, Molecular and Optical Physics, 1997, 30, 2735-2745.	1.5	14
50	Engineering closed optical transitions in rare-earth ion crystals. Physical Review B, 2016, 93, .	3.2	13
51	Quantum memories and the double-slit experiment: implications for astronomical interferometry. Journal of the Optical Society of America B: Optical Physics, 2021, 38, A86.	2.1	12
52	Resolved isotopic energy shift and hole burning in $\text{EuCl}_3\cdot 6\text{H}_2\text{O}$. Journal of Luminescence, 1998, 78, 19-24.	3.1	11
53	Spectral hole burning and Raman heterodyne signals associated with an avoided crossing in the NV centre in diamond. Journal of Luminescence, 2000, 86, 355-362.	3.1	11
54	50kHz absorption line in $\text{Y}_2\text{SiO}_5:\text{Eu}^{3+}$. Journal of Luminescence, 2000, 87-89, 833-835.	3.1	11

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55	Method for assigning satellite lines to crystallographic sites in rare-earth crystals. Physical Review B, 2013, 88. Minimizing Zeeman sensitivity on optical and hyperfine transitions in Er^{3+} ion in SiO ₂ . Physical Review B, 2013, 88.	3.2	11
56	Storage and retrieval of collective excitations on a long-lived spin transition in a rare-earth ion-doped crystal. Optics Express, 2013, 21, 10087.	3.1	10
57	Quantum information processing using frozen core Y^{3+} spins in $\text{Eu}^{3+}:\text{Y}_2\text{SiO}_5$. New Journal of Physics, 2019, 21, 033019.	2.9	9
58	Coherent heterodyne-assisted pulsed spectroscopy: sub-Doppler two-photon spectra of krypton, characterizing a tunable nonlinear-optical ultraviolet light source. Applied Physics B: Lasers and Optics, 2010, 99, 609-612.	2.2	8
59	Single photon production by rephased amplified spontaneous emission. New Journal of Physics, 2014, 16, 033042.	2.9	8
60	Hole burning of rare earth ions with kHz resolution. Journal of Luminescence, 1995, 64, 19-23.	3.1	7
61	Long-time spectral diffusion in $\text{LaF}_3:\text{Pr}^{3+}$. Journal of Luminescence, 1994, 58, 188-190.	3.1	6
62	Breaking the Stokes-anti-Stokes symmetry in Raman heterodyne detection of magnetic-resonance transitions. Physical Review A, 1998, 58, 4961-4966.	2.5	6
63	superhyperfine structure due to magnetic dipole-dipole interactions with in. Journal of Luminescence, 2010, 130, 1594-1597.	3.1	6
64	High-resolution spectroscopy of individual erbium ions in strong magnetic fields. Physical Review B, 2020, 102, .	3.2	6
65	Experimental demonstration of data erasure for time-domain optical memories. Journal of the Optical Society of America B: Optical Physics, 1999, 16, 805.	2.1	5
66	Diamond nanopillar arrays for quantum microscopy of neuronal signals. Neurophotonics, 2020, 7, 1.	3.3	5
67	Zeeman and hyperfine interactions of a single Er^{3+} ion in Si. Physical Review B, 2022, 105, .	3.2	5
68	Phase-dependent decoherence of optical transitions in $\text{Pr}^{3+}:\text{LaF}_3$ in the presence of a driving field. Physical Review B, 2004, 69, .	3.2	4
69	Time-Resolved Photoionization Detection of a Single Er^{3+} Ion in Silicon. Nano Letters, 2022, 22, 396-401.	9.1	4
70	Direct observation of radiation locking using phase-sensitive detection. Journal of Luminescence, 1998, 76-77, 137-140.	3.1	3
71	Electric-field-induced broadening of spectral holes in zinc phthalocyanine. Chemical Physics Letters, 2000, 327, 189-196.	2.6	3
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73	Epitaxial growth of Sc ₂ O ₃ films on Gd ₂ O ₃ -buffered Si substrates by pulsed laser deposition. Applied Physics A: Materials Science and Processing, 2016, 122, 1.	2.3	3
74	Ultrashallow Junction Electrodes in Low-Loss Silicon Microring Resonators. Physical Review Applied, 2021, 15, .	3.8	2
75	Single site optical spectroscopy of coupled Er ³⁺ ion pairs in silicon. Quantum Science and Technology, 2022, 7, 025019.	5.8	2
76	Optical non-Bloch behaviour observed using an optical Carré-Purcell-Meiboom-Gill pulse sequence. Journal of Luminescence, 2000, 86, 279-283.	3.1	1
77	Magneto-optic measurements of spectral holes in metallo-porphyrin derivatives in polymer matrices. Physical Chemistry Chemical Physics, 2000, 2, 3993-3999.	2.8	1
78	VLSI quantum computer in diamond. , 2006, 6130, 65.		1
79	Gradient echo quantum memory for light using two-level atoms. , 2007, , .		1
80	Atomic clocks in the solid state. Nature Nanotechnology, 2013, 8, 544-545.	31.5	1
81	Technique for frequency selective, sub-diffraction limited imaging of rare-earth ions in bulk crystals. Journal of Luminescence, 2018, 194, 284-291.	3.1	1
82	Complete crystal-field calculation of Zeeman hyperfine splittings in europium. Physical Review B, 2022, 105, .	3.2	1
83	Zeeman measurements of transient holes at MHz frequencies. Journal of Luminescence, 1994, 60-61, 135-137.	3.1	0
84	Spin-wave generation and storage in a solid state system. , 2011, , .		0
85	High Efficiency Gradient Echo Memory with 3-Level Atoms. , 2011, , .		0
86	Characterisation of EuCl ₃ ·6H ₂ O for multi-qubit quantum processing. , 2011, , .		0
87	Photo-ionisation spectra of single erbium centres by charge sensing with a nano transistor. , 2012, , .		0
88	Cavity enhanced rephased amplified spontaneous emission. Proceedings of SPIE, 2013, , .	0.8	0
89	Closing optical transitions for single rare-earth ion spin readout. , 2016, , .		0
90	Introduction to the Spectroscopy of Rare-Earth Doped Crystals for Quantum Communications. , 2017, , .		0

#	ARTICLE	IF	CITATIONS
91	Stoichiometric Rare-Earth Crystals for Applications in Quantum Information. , 2017, , .		0