

Joaquã-n Fernã;ndez-Rossier

List of Publications by Year in descending order

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158
papers

8,962
citations

43973

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91
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161
all docs

161
docs citations

161
times ranked

8880
citing authors

#	ARTICLE	IF	CITATIONS
1	Magnetism in Graphene Nanoislands. Physical Review Letters, 2007, 99, 177204.	2.9	696
2	Probing magnetism in 2D van der Waals crystalline insulators via electron tunneling. Science, 2018, 360, 1218-1222.	6.0	668
3	On the origin of magnetic anisotropy in two dimensional CrI ₃ . 2D Materials, 2017, 4, 035002.	2.0	524
4	Electronic properties of the MoS ₂ -WS ₂ heterojunction. Physical Review B, 2013, 87, .	1.1	424
5	Vacancy-induced magnetism in graphene and graphene ribbons. Physical Review B, 2008, 77, .	1.1	390
6	Large spin splitting in the conduction band of transition metal dichalcogenide monolayers. Physical Review B, 2013, 88, .	1.1	341
7	Giant Magnetoresistance in Ultrasmall Graphene Based Devices. Physical Review Letters, 2009, 102, 136810.	2.9	274
8	Coherent transport in graphene nanoconstrictions. Physical Review B, 2006, 74, .	1.1	162
9	Electrical Control of a Single Mn Atom in a Quantum Dot. Physical Review Letters, 2006, 97, 107401.	2.9	149
10	Theory of Single-Spin Inelastic Tunneling Spectroscopy. Physical Review Letters, 2009, 102, 256802.	2.9	142
11	The Kondo effect in ferromagnetic atomic contacts. Nature, 2009, 458, 1150-1153.	13.7	132
12	Van der Waals Spin Valves. Physical Review Letters, 2018, 121, 067701.	2.9	132
13	Interplay between interlayer exchange and stacking in CrI ₃ bilayers. Solid State Communications, 2019, 299, 113662.	0.9	132
14	Control of single-spin magnetic anisotropy by exchange coupling. Nature Nanotechnology, 2014, 9, 64-68.	15.6	129
15	A kilobyte rewritable atomic memory. Nature Nanotechnology, 2016, 11, 926-929.	15.6	123
16	Hydrogenated graphene nanoribbons for spintronics. Physical Review B, 2010, 81, .	1.1	119
17	Observation of fractional edge excitations in nanographene spin chains. Nature, 2021, 598, 287-292.	13.7	115
18	Prediction of hidden multiferroic order in graphene zigzag ribbons. Physical Review B, 2008, 77, .	1.1	112

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19	Imaging of spin waves in atomically designed nanomagnets. <i>Nature Materials</i> , 2014, 13, 782-785.	13.3	112
20	Large magnetic exchange coupling in rhombus-shaped nanographenes with zigzag periphery. <i>Nature Chemistry</i> , 2021, 13, 581-586.	6.6	104
21	Magnetic Two-Dimensional Chromium Trihalides: A Theoretical Perspective. <i>Nano Letters</i> , 2020, 20, 6225-6234.	4.5	103
22	Topologically Protected Quantum Transport in Locally Exfoliated Bismuth at Room Temperature. <i>Physical Review Letters</i> , 2013, 110, 176802.	2.9	101
23	Centimeter-Scale Synthesis of Ultrathin Layered MoO ₃ by van der Waals Epitaxy. <i>Chemistry of Materials</i> , 2016, 28, 4042-4051.	3.2	100
24	Influence of a uniform current on collective magnetization dynamics in a ferromagnetic metal. <i>Physical Review B</i> , 2004, 69, .	1.1	98
25	Collective All-Carbon Magnetism in Triangulene Dimers**. <i>Angewandte Chemie - International Edition</i> , 2020, 59, 12041-12047.	7.2	96
26	Electronic structure of gated graphene and graphene ribbons. <i>Physical Review B</i> , 2007, 75, .	1.1	93
27	Ferromagnetism Mediated by Few Electrons in a Semimagnetic Quantum Dot. <i>Physical Review Letters</i> , 2004, 93, 117201.	2.9	91
28	Spin-Transfer Torque on a Single Magnetic Adatom. <i>Physical Review Letters</i> , 2010, 104, 026601.	2.9	90
29	Topological spin waves in the atomic-scale magnetic skyrmion crystal. <i>New Journal of Physics</i> , 2016, 18, 045015.	1.2	88
30	Single-exciton spectroscopy of semimagnetic quantum dots. <i>Physical Review B</i> , 2006, 73, .	1.1	85
31	Engineering the Eigenstates of Coupled Spin- $\frac{1}{2}$ Atoms on a Surface. <i>Physical Review Letters</i> , 2017, 119, 227206.	2.9	78
32	Probing quantum coherence in single-atom electron spin resonance. <i>Science Advances</i> , 2018, 4, eaq1543.	4.7	78
33	Hyperfine interaction of individual atoms on a surface. <i>Science</i> , 2018, 362, 336-339.	6.0	74
34	Quantum-coherent nanoscience. <i>Nature Nanotechnology</i> , 2021, 16, 1318-1329.	15.6	73
35	Single-Electron Transport in Electrically Tunable Nanomagnets. <i>Physical Review Letters</i> , 2007, 98, 106805.	2.9	72
36	Majorana Zero Modes in Graphene. <i>Physical Review X</i> , 2015, 5, .	2.8	71

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37	Electronic and magnetic structure of graphene nanoribbons. <i>Semiconductor Science and Technology</i> , 2010, 25, 033003.	1.0	68
38	Spin Degree of Freedom in Two Dimensional Exciton Condensates. <i>Physical Review Letters</i> , 1997, 78, 4809-4812.	2.9	67
39	Magnetic Edge Anisotropy in Graphenelike Honeycomb Crystals. <i>Physical Review Letters</i> , 2014, 113, 027203.	2.9	65
40	Magnetic and orbital blocking in Ni nanocontacts. <i>Physical Review B</i> , 2005, 71, .	1.1	63
41	Spontaneous persistent currents in a quantum spin Hall insulator. <i>Physical Review B</i> , 2010, 82, .	1.1	60
42	Tunnel magnetoresistance in GaMnAs: Going beyond Jullière formula. <i>Applied Physics Letters</i> , 2004, 85, 1996-1998.	1.5	59
43	Performance limits of graphene-ribbon field-effect transistors. <i>Physical Review B</i> , 2008, 77, .	1.1	57
44	Spin decoherence of magnetic atoms on surfaces. <i>Progress in Surface Science</i> , 2017, 92, 40-82.	3.8	56
45	Spin splitting in a polarized quasi-two-dimensional exciton gas. <i>Physical Review B</i> , 1996, 54, R8317-R8320.	1.1	54
46	Tuning the Exchange Bias on a Single Atom from 1 mT to 10 mT. <i>Physical Review Letters</i> , 2019, 122, 227203.	2.9	54
47	Theory of ferromagnetism in planar heterostructures of (Mn,III)-V semiconductors. <i>Physical Review B</i> , 2001, 64, .	1.1	53
48	Spin dynamics of current-driven single magnetic adatoms and molecules. <i>Physical Review B</i> , 2010, 82, .	1.1	52
49	Interplay between spin proximity effect and charge-dependent exciton dynamics in MoSe ₂ /CrBr ₃ van der Waals heterostructures. <i>Nature Communications</i> , 2020, 11, 6021.	5.8	52
50	Optical initialization, readout, and dynamics of a Mn spin in a quantum dot. <i>Physical Review B</i> , 2010, 81, .	1.1	50
51	Optical probing of spin fluctuations of a single paramagnetic Mn atom in a semiconductor quantum dot. <i>Physical Review B</i> , 2008, 78, .	1.1	49
52	Polarized interacting exciton gas in quantum wells and bulk semiconductors. <i>Physical Review B</i> , 1996, 54, 11582-11591.	1.1	48
53	Characterization of highly crystalline lead iodide nanosheets prepared by room-temperature solution processing. <i>Nanotechnology</i> , 2017, 28, 455703.	1.3	45
54	Topological magnons in CrI ₃ monolayers: an itinerant fermion description. <i>2D Materials</i> , 2020, 7, 045031.	2.0	45

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55	Real-space mapping of topological invariants using artificial neural networks. <i>Physical Review B</i> , 2018, 97, .	1.1	44
56	Magneto-optical response of chromium trihalide monolayers: chemical trends. <i>Journal of Materials Chemistry C</i> , 2020, 8, 8856-8863.	2.7	44
57	Edge states in graphene-like systems. <i>Synthetic Metals</i> , 2015, 210, 56-67.	2.1	40
58	Electrically controlled nuclear polarization of individual atoms. <i>Nature Nanotechnology</i> , 2018, 13, 1120-1125.	15.6	39
59	Coherently Photoinduced Ferromagnetism in Diluted Magnetic Semiconductors. <i>Physical Review Letters</i> , 2004, 93, 127201.	2.9	38
60	Exchange mechanism for electron paramagnetic resonance of individual adatoms. <i>Physical Review B</i> , 2017, 96, .	1.1	38
61	Microscopic theory for quantum mirages in quantum corrals. <i>Physical Review B</i> , 2001, 63, .	1.1	37
62	Quantum fluctuations stabilize skyrmion textures. <i>Physical Review B</i> , 2015, 92, .	1.1	37
63	Long-Range Spin-Qubit Interaction Mediated by Microcavity Polaritons. <i>Physical Review Letters</i> , 2006, 97, 097401.	2.9	35
64	Interplay between sublattice and spin symmetry breaking in graphene. <i>Physical Review B</i> , 2012, 85, .	1.1	35
65	Transport in magnetically ordered Pt nanocontacts. <i>Physical Review B</i> , 2005, 72, .	1.1	34
66	Cotunneling theory of atomic spin inelastic electron tunneling spectroscopy. <i>Physical Review B</i> , 2011, 84, .	1.1	33
67	Optical control of the spin state of two Mn atoms in a quantum dot. <i>Physical Review B</i> , 2012, 86, .	1.1	33
68	The emergence of classical behaviour in magnetic adatoms. <i>Europhysics Letters</i> , 2015, 109, 57001.	0.7	31
69	Storage of Classical Information in Quantum Spins. <i>Physical Review Letters</i> , 2012, 108, 196602.	2.9	30
70	Anisotropic intrinsic spin relaxation in graphene due to flexural distortions. <i>Physical Review B</i> , 2013, 88, .	1.1	30
71	Single-exciton spectroscopy of single Mn doped InAs quantum dots. <i>Physical Review B</i> , 2008, 78, .	1.1	29
72	Spin-orbit interaction in curved graphene ribbons. <i>Physical Review B</i> , 2011, 83, .	1.1	29

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73	Anisotropic magnetoresistance in nanocontacts. <i>Physical Review B</i> , 2008, 77, .	1.1	28
74	Quantum anomalous Hall effect in graphene coupled to skyrmions. <i>Physical Review B</i> , 2015, 92, .	1.1	28
75	Consequences of Kondo exchange on quantum spins. <i>Surface Science</i> , 2014, 630, 337-342.	0.8	27
76	Coherent-light emission from exciton condensates in semiconductor quantum wells. <i>Solid State Communications</i> , 1998, 108, 473-477.	0.9	25
77	Emergence of half-metallicity in suspended NiO chains: Ab initio electronic structure and quantum transport calculations. <i>Physical Review B</i> , 2006, 74, .	1.1	25
78	Noncollinear magnetic phases and edge states in graphene quantum Hall bars. <i>Physical Review B</i> , 2014, 90, .	1.1	25
79	Controlled Complete Suppression of Single-Atom Inelastic Spin and Orbital Cotunneling. <i>Nano Letters</i> , 2015, 15, 6542-6546.	4.5	25
80	Spin-phonon coupling in single Mn-doped CdTe quantum dot. <i>Physical Review B</i> , 2011, 84, .	1.1	24
81	Excitonic magneto-optical Kerr effect in two-dimensional transition metal dichalcogenides induced by spin proximity. <i>Physical Review B</i> , 2020, 101, .	1.1	24
82	Collective Carbon Magnetism in Triangulene Dimers**. <i>Angewandte Chemie</i> , 2020, 132, 12139-12145.	1.6	23
83	Quantum engineering. <i>Nature Materials</i> , 2013, 12, 480-481.	13.3	22
84	Engineering spin exchange in nonbipartite graphene zigzag edges. <i>Physical Review B</i> , 2016, 94, .	1.1	22
85	Emergence of quasiparticle Bloch states in artificial crystals crafted atom-by-atom. <i>SciPost Physics</i> , 2017, 2, .	1.5	22
86	Landau levels in 2D materials using Wannier Hamiltonians obtained by first principles. <i>2D Materials</i> , 2016, 3, 035023.	2.0	21
87	Electrical spin manipulation in graphene nanostructures. <i>Physical Review B</i> , 2018, 97, .	1.1	21
88	Magneto-optical Kerr effect in spin split two-dimensional massive Dirac materials. <i>2D Materials</i> , 2020, 7, 025011.	2.0	21
89	Renormalization of spin excitations and Kondo effect in open-shell nanographenes. <i>Physical Review B</i> , 2021, 104, .	1.1	21
90	From cyclic nanorings to single-walled carbon nanotubes: disclosing the evolution of their electronic structure with the help of theoretical methods. <i>Physical Chemistry Chemical Physics</i> , 2019, 21, 2547-2557.	1.3	20

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91	Colossal anisotropy in diluted magnetic topological insulators. Solid State Communications, 2012, 152, 403-406.	0.9	19
92	Electronic properties of transition metal atoms on Cu_2N . Physical Review B, 2015, 92, .	1.1	19
93	Unconventional Yuâ€“Shibaâ€“Rusinov states in hydrogenated graphene. 2D Materials, 2016, 3, 025001.	2.0	19
94	Local Probe of Fractional Edge States of $S=1$ Heisenberg Spin Chains. Physical Review Letters, 2013, 111, 167201.	2.9	18
95	Graphene single-electron transistor as a spin sensor for magnetic adsorbates. Physical Review B, 2013, 87, .	1.1	18
96	Competition between quantum spin tunneling and Kondo effect. European Physical Journal B, 2016, 89, 1.	0.6	18
97	Optical orientation with linearly polarized light in transition metal dichalcogenides. Physical Review B, 2019, 99, .	1.1	18
98	Single spin resonance driven by electric modulation of the g -factor anisotropy. Physical Review Research, 2019, 1, .	1.3	18
99	VO: A strongly correlated metal close to a Mott-Hubbard transition. Physical Review B, 2007, 76, .	1.1	17
100	Quantum Hall effect in gapped graphene heterojunctions. Physical Review B, 2013, 88, .	1.1	17
101	Derivation of the spin Hamiltonians for Fe in MgO. New Journal of Physics, 2015, 17, 033020.	1.2	17
102	Impurity states in the quantum spin Hall phase in graphene. Physical Review B, 2012, 86, .	1.1	16
103	Probing local moments in nanographenes with electron tunneling spectroscopy. Progress in Surface Science, 2020, 95, 100595.	3.8	16
104	Optimizing quantum phase estimation for the simulation of Hamiltonian eigenstates. Quantum Science and Technology, 2020, 5, 044005.	2.6	16
105	Mn-doped II-VI quantum dots: artificial molecular magnets. Physica Status Solidi C: Current Topics in Solid State Physics, 2006, 3, 3734-3739.	0.8	15
106	Orbital Magnetization of Quantum Spin Hall Insulator Nanoparticles. Nano Letters, 2015, 15, 5799-5803.	4.5	14
107	Spin separation in digital ferromagnetic heterostructures. Physical Review B, 2002, 66, .	1.1	13
108	Spin-filtered edge states in graphene. Solid State Communications, 2012, 152, 1469-1476.	0.9	13

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109	Anomalous magnetism in hydrogenated graphene. <i>Physical Review B</i> , 2017, 96, .	1.1	13
110	Hybrid plasmon-magnon polaritons in graphene-antiferromagnet heterostructures. <i>2D Materials</i> , 2019, 6, 045003.	2.0	13
111	Nonreciprocal magnons in a two-dimensional crystal with out-of-plane magnetization. <i>Physical Review B</i> , 2020, 102, .	1.1	12
112	Anisotropic exchange interaction induced by a single photon in semiconductor microcavities. <i>Physical Review B</i> , 2005, 72, .	1.1	11
113	Inelastic Electron Tunneling Spectroscopy of a Single Nuclear Spin. <i>Physical Review Letters</i> , 2011, 107, 076804.	2.9	11
114	Berry phase estimation in gate-based adiabatic quantum simulation. <i>Physical Review A</i> , 2020, 101, .	1.0	10
115	Observation of Yuâ€“Shibaâ€“Rusinov States in Superconducting Graphene. <i>Advanced Materials</i> , 2021, 33, e2008113.	11.1	10
116	Gutzwiller wave function on a digital quantum computer. <i>Physical Review B</i> , 2021, 103, .	1.1	10
117	Spin depolarization in the transport of holes across $GaxMn1\hat{a}^{\wedge}xAs\hat{a}^{\wedge}GayAl1\hat{a}^{\wedge}yAs\hat{a}^{\wedge}p\hat{a}^{\wedge}GaAs$. <i>Physical Review B</i> , 2004, 70, .	1.1	9
118	Optical control of the magnetization damping in ferromagnetic semiconductors. <i>Journal of Magnetism and Magnetic Materials</i> , 2004, 272-276, 1913-1914.	1.0	8
119	Quantum theory of spin waves in finite chiral spin chains. <i>Physical Review B</i> , 2014, 89, .	1.1	8
120	Gating Classical Information Flow via Equilibrium Quantum Phase Transitions. <i>Physical Review Letters</i> , 2017, 118, 147203.	2.9	7
121	Hubbard model for spin-1 Haldane chains. <i>Physical Review B</i> , 2022, 105, .	1.1	7
122	Spin properties of charged single Mn-doped quantum dots. <i>Physica Status Solidi (B): Basic Research</i> , 2006, 243, 3912-3916.	0.7	6
123	RKKY oscillations in the spin relaxation rates of atomic-scale nanomagnets. <i>Physical Review B</i> , 2017, 95, .	1.1	6
124	Imaging magnetic 2D crystals with quantum sensors. <i>Science</i> , 2019, 364, 935-935.	6.0	6
125	Spin splitting of excitons in GaAs quantum wells at zero magnetic field. <i>Solid-State Electronics</i> , 1996, 40, 755-758.	0.8	5
126	Electronic and magnetic properties of VOCl/FeOCl antiferromagnetic heterobilayers. <i>2D Materials</i> , 2021, 8, 045008.	2.0	5

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127	Spin-lattice dynamics simulation of the Einstein-de Haas effect. Computational Materials Science, 2022, 209, 111359.	1.4	5
128	Ferromagnetism in 2D Exciton Condensates. Physica Status Solidi A, 1997, 164, 343-346.	1.7	4
129	Quantum spin Hall phase in multilayer graphene. Physical Review B, 2015, 91, .	1.1	4
130	Electronic transport in gadolinium atomic-size contacts. Physical Review B, 2017, 95, .	1.1	4
131	Testing complementarity on a transmon quantum processor. Physical Review A, 2021, 104, .	1.0	4
132	Designer fermion models in functionalized graphene bilayers. Physical Review Research, 2019, 1, .	1.3	4
133	Interferences and coherent control of excitons in GaAs quantum wells. Journal of Physics Condensed Matter, 1999, 11, 6013-6021.	0.7	3
134	Exciton beats in GaAs quantum wells: bosonic representation and collective effects. Solid State Communications, 1999, 112, 597-600.	0.9	3
135	Comment on "Quantum Theory of Secondary Emission in Optically Excited Semiconductor Quantum Wells" Physical Review Letters, 2000, 84, 2281-2281.	2.9	3
136	Fermi-edge singularities in linear and nonlinear ultrafast spectroscopy. Physical Review B, 2001, 63, .	1.1	3
137	Anisotropic magnetoresistance in single electron transport. Physica Status Solidi C: Current Topics in Solid State Physics, 2006, 3, 4231-4234.	0.8	3
138	Intrinsic spin noise in MgO magnetic tunnel junctions. Applied Physics Letters, 2013, 102, .	1.5	3
139	Electrical detection of individual skyrmions in graphene devices. Physical Review B, 2017, 96, .	1.1	3
140	Extrinsic room-temperature ferromagnetism in MoS2. Journal of Materials Science, 2021, 56, 9692-9701.	1.7	3
141	Frustrated magnetic interactions in a cyclacene crystal. Physical Review Materials, 2022, 6, .	0.9	3
142	Ising and XY paramagnons in two-dimensional NbSe_2 . Physical Review B, 2022, 105, .	1.1	3
143	Microscopic theory of exciton coherent control and Rayleigh scattering in semiconductor quantum wells. Semiconductor Science and Technology, 2000, 15, R65-R80.	1.0	2
144	Electronic structure and transport properties of atomic NiO spinvalves. Journal of Magnetism and Magnetic Materials, 2007, 310, e675-e677.	1.0	2

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145	Modelling optical spin pumping of a single Mn atom in a CdTe quantum dot. Journal of Physics: Conference Series, 2010, 210, 012046.	0.3	2
146	Enhanced lifetimes of spin chains coupled to chiral edge states. New Journal of Physics, 2019, 21, 043008.	1.2	2
147	Zero-frequency shot noise in an artificial single molecule magnet. Physica E: Low-Dimensional Systems and Nanostructures, 2010, 42, 561-564.	1.3	1
148	Probing a single nuclear spin in a silicon single electron transistor. Applied Physics Letters, 2012, 101, 072407.	1.5	1
149	Inelastic Electron Tunneling Spectroscopy of a Mn Dimer. Acta Physica Polonica A, 2012, 122, 304-306.	0.2	1
150	One-to-one correspondence between thermal structure factors and coupling constants of general bilinear Hamiltonians. Physical Review E, 2022, 105, .	0.8	1
151	Condensation of 2D electron-hole pairs with spin degree of freedom. Physica B: Condensed Matter, 1998, 249-251, 714-717.	1.3	0
152	Coherent control and four wave-mixing of Fermi edge singularities in doped quantum wells. Physica E: Low-Dimensional Systems and Nanostructures, 2002, 12, 558-561.	1.3	0
153	Spin filter behaviour of atomic NiO chains in Ni nanocontacts. , 2006, , .		0
154	Long-range spin-qubit interaction in planar microcavities. , 2007, , .		0
155	Long-range spin-qubit interaction in planar microcavities. , 2007, , .		0
156	Coherent Response to Optical Pulses in Quantum Wells. , 2000, , 143-157.		0
157	Hysteretic Linear Conductance in Single Electron Transport through a Single Atom Magnet. Mathematics in Industry, 2008, , 460-465.	0.1	0
158	Exciton and Polariton Condensation. , 0, , 153-189.		0