# Joaqun Fernndez-Rossier

## List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

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|---|---|---|---|
| 148 papers | 6,800 citations | 43 h-index | 79 g-index |
| 161 ext. papers | 7,957 ext. citations | 6.7 avg, IF | 6.57 L-index |

| # | Paper | IF | Citations |
|---|---|---|---|
| 148 | Spin-lattice dynamics simulation of the Einstein–de Haas effect. *Computational Materials Science*, **2022**, 209, 111359 | 3.2 | 0 |
| 147 | Quantum-coherent nanoscience. *Nature Nanotechnology*, **2021**, | 28.7 | 10 |
| 146 | Observation of fractional edge excitations in nanographene spin chains. *Nature*, **2021**, 598, 287-292 | 50.4 | 21 |
| 145 | Extrinsic room-temperature ferromagnetism in MoS2. *Journal of Materials Science*, **2021**, 56, 9692-9701 | 4.3 | 1 |
| 144 | Observation of Yu-Shiba-Rusinov States in Superconducting Graphene. *Advanced Materials*, **2021**, 33, e2008113 | 24 | 2 |
| 143 | Large magnetic exchange coupling in rhombus-shaped nanographenes with zigzag periphery. *Nature Chemistry*, **2021**, 13, 581-586 | 17.6 | 28 |
| 142 | Renormalization of spin excitations and Kondo effect in open-shell nanographenes. *Physical Review B*, **2021**, 104, | 3.3 | 2 |
| 141 | Testing complementarity on a transmon quantum processor. *Physical Review A*, **2021**, 104, | 2.6 | 1 |
| 140 | Interplay between spin proximity effect and charge-dependent exciton dynamics in MoSe/CrBr van der Waals heterostructures. *Nature Communications*, **2020**, 11, 6021 | 17.4 | 22 |
| 139 | Magneto-optical response of chromium trihalide monolayers: chemical trends. *Journal of Materials Chemistry C*, **2020**, 8, 8856-8863 | 7.1 | 14 |
| 138 | Berry phase estimation in gate-based adiabatic quantum simulation. *Physical Review A*, **2020**, 101, | 2.6 | 6 |
| 137 | Excitonic magneto-optical Kerr effect in two-dimensional transition metal dichalcogenides induced by spin proximity. *Physical Review B*, **2020**, 101, | 3.3 | 19 |
| 136 | Topological magnons in CrI3 monolayers: an itinerant fermion description. *2D Materials*, **2020**, 7, 045031 | 5.9 | 21 |
| 135 | Optimizing quantum phase estimation for the simulation of Hamiltonian eigenstates. *Quantum Science and Technology*, **2020**, 5, 044005 | 5.5 | 6 |
| 134 | Magneto-optical Kerr effect in spin split two-dimensional massive Dirac materials. *2D Materials*, **2020**, 7, 025011 | 5.9 | 10 |
| 133 | Nonreciprocal magnons in a two-dimensional crystal with out-of-plane magnetization. *Physical Review B*, **2020**, 102, | 3.3 | 5 |
| 132 | Magnetic Two-Dimensional Chromium Trihalides: A Theoretical Perspective. *Nano Letters*, **2020**, 20, 6225-6234 | 11.5 | 42 |

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| 131 | Probing local moments in nanographenes with electron tunneling spectroscopy. *Progress in Surface Science*, **2020**, 95, 100595 | 6.6 | 3 |
| 130 | Collective All-Carbon Magnetism in Triangulene Dimers**. *Angewandte Chemie*, **2020**, 132, 12139-12145 | 3.6 | 8 |
| 129 | Collective All-Carbon Magnetism in Triangulene Dimers. *Angewandte Chemie - International Edition*, **2020**, 59, 12041-12047 | 16.4 | 43 |
| 128 | From cyclic nanorings to single-walled carbon nanotubes: disclosing the evolution of their electronic structure with the help of theoretical methods. *Physical Chemistry Chemical Physics*, **2019** , 21, 2547-2557 | 3.6 | 19 |
| 127 | Enhanced lifetimes of spin chains coupled to chiral edge states. *New Journal of Physics*, **2019**, 21, 043008 | 2.9 | 0 |
| 126 | Imaging magnetic 2D crystals with quantum sensors. *Science*, **2019**, 364, 935 | 33.3 | 4 |
| 125 | Tuning the Exchange Bias on a Single Atom from 1 mT to 10 T. *Physical Review Letters*, **2019**, 122, 227203 | 7.4 | 26 |
| 124 | Hybrid plasmon-magnon polaritons in graphene-antiferromagnet heterostructures. *2D Materials*, **2019**, 6, 045003 | 5.9 | 6 |
| 123 | Optical orientation with linearly polarized light in transition metal dichalcogenides. *Physical Review B*, **2019**, 99, | 3.3 | 10 |
| 122 | Interplay between interlayer exchange and stacking in CrI3 bilayers. *Solid State Communications*, **2019**, 299, 113662 | 1.6 | 86 |
| 121 | Designer fermion models in functionalized graphene bilayers. *Physical Review Research*, **2019**, 1, | 3.9 | 1 |
| 120 | Single spin resonance driven by electric modulation of the g-factor anisotropy. *Physical Review Research*, **2019**, 1, | 3.9 | 8 |
| 119 | Probing quantum coherence in single-atom electron spin resonance. *Science Advances*, **2018**, 4, eaaq1543 | 14.3 | 49 |
| 118 | Probing magnetism in 2D van der Waals crystalline insulators via electron tunneling. *Science*, **2018**, 360, 1218-1222 | 33.3 | 444 |
| 117 | Real-space mapping of topological invariants using artificial neural networks. *Physical Review B*, **2018**, 97, | 3.3 | 27 |
| 116 | Van der Waals Spin Valves. *Physical Review Letters*, **2018**, 121, 067701 | 7.4 | 91 |
| 115 | Electrically controlled nuclear polarization of individual atoms. *Nature Nanotechnology*, **2018**, 13, 1120-1125 | 12.7 | 18 |
| 114 | Hyperfine interaction of individual atoms on a surface. *Science*, **2018**, 362, 336-339 | 33.3 | 40 |

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| 113 | Electrical spin manipulation in graphene nanostructures. *Physical Review B*, **2018**, 97, | 3.3 | 10 |
| 112 | Spin decoherence of magnetic atoms on surfaces. *Progress in Surface Science*, **2017**, 92, 40-82 | 6.6 | 44 |
| 111 | Electronic transport in gadolinium atomic-size contacts. *Physical Review B*, **2017**, 95, | 3.3 | 3 |
| 110 | RKKY oscillations in the spin relaxation rates of atomic-scale nanomagnets. *Physical Review B*, **2017**, 95, | 3.3 | 5 |
| 109 | On the origin of magnetic anisotropy in two dimensional CrI 3. *2D Materials*, **2017**, 4, 035002 | 5.9 | 323 |
| 108 | Characterization of highly crystalline lead iodide nanosheets prepared by room-temperature solution processing. *Nanotechnology*, **2017**, 28, 455703 | 3.4 | 33 |
| 107 | Electrical detection of individual skyrmions in graphene devices. *Physical Review B*, **2017**, 96, | 3.3 | 3 |
| 106 | Gating Classical Information Flow via Equilibrium Quantum Phase Transitions. *Physical Review Letters*, **2017**, 118, 147203 | 7.4 | 4 |
| 105 | Engineering the Eigenstates of Coupled Spin-1/2 Atoms on a Surface. *Physical Review Letters*, **2017**, 119, 227206 | 7.4 | 45 |
| 104 | Exchange mechanism for electron paramagnetic resonance of individual adatoms. *Physical Review B* , **2017**, 96, | 3.3 | 22 |
| 103 | Anomalous magnetism in hydrogenated graphene. *Physical Review B*, **2017**, 96, | 3.3 | 10 |
| 102 | Emergence of quasiparticle Bloch states in artificial crystals crafted atom-by-atom. *SciPost Physics*, **2017**, 2, | 6.1 | 13 |
| 101 | Engineering spin exchange in nonbipartite graphene zigzag edges. *Physical Review B*, **2016**, 94, | 3.3 | 13 |
| 100 | Landau levels in 2D materials using Wannier Hamiltonians obtained by first principles. *2D Materials*, **2016**, 3, 035023 | 5.9 | 15 |
| 99 | A kilobyte rewritable atomic memory. *Nature Nanotechnology*, **2016**, 11, 926-929 | 28.7 | 90 |
| 98 | Unconventional Yu?Shiba?Rusinov states in hydrogenated graphene. *2D Materials*, **2016**, 3, 025001 | 5.9 | 11 |
| 97 | Topological spin waves in the atomic-scale magnetic skyrmion crystal. *New Journal of Physics*, **2016**, 18, 045015 | 2.9 | 59 |
| 96 | Centimeter-Scale Synthesis of Ultrathin Layered MoO3 by van der Waals Epitaxy. *Chemistry of Materials*, **2016**, 28, 4042-4051 | 9.6 | 64 |

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|---|---|---|---|
| 95 | Competition between quantum spin tunneling and Kondo effect. *European Physical Journal B*, **2016**, 89, 1 | 1.2 | 16 |
| 94 | Derivation of the spin Hamiltonians for Fe in MgO. *New Journal of Physics*, **2015**, 17, 033020 | 2.9 | 15 |
| 93 | Edge states in graphene-like systems. *Synthetic Metals*, **2015**, 210, 56-67 | 3.6 | 26 |
| 92 | Orbital Magnetization of Quantum Spin Hall Insulator Nanoparticles. *Nano Letters*, **2015**, 15, 5799-803 | 11.5 | 12 |
| 91 | Controlled Complete Suppression of Single-Atom Inelastic Spin and Orbital Cotunneling. *Nano Letters*, **2015**, 15, 6542-6 | 11.5 | 22 |
| 90 | The emergence of classical behaviour in magnetic adatoms. *Europhysics Letters*, **2015**, 109, 57001 | 1.6 | 26 |
| 89 | Quantum spin Hall phase in multilayer graphene. *Physical Review B*, **2015**, 91, | 3.3 | 3 |
| 88 | Quantum anomalous Hall effect in graphene coupled to skyrmions. *Physical Review B*, **2015**, 92, | 3.3 | 22 |
| 87 | Electronic properties of transition metal atoms on Cu2N/Cu(100). *Physical Review B*, **2015**, 92, | 3.3 | 16 |
| 86 | Quantum fluctuations stabilize skyrmion textures. *Physical Review B*, **2015**, 92, | 3.3 | 21 |
| 85 | Majorana Zero Modes in Graphene. *Physical Review X*, **2015**, 5, | 9.1 | 55 |
| 84 | Control of single-spin magnetic anisotropy by exchange coupling. *Nature Nanotechnology*, **2014**, 9, 64-8 | 28.7 | 109 |
| 83 | Consequences of Kondo exchange on quantum spins. *Surface Science*, **2014**, 630, 337-342 | 1.8 | 23 |
| 82 | Imaging of spin waves in atomically designed nanomagnets. *Nature Materials*, **2014**, 13, 782-5 | 27 | 96 |
| 81 | Quantum theory of spin waves in finite chiral spin chains. *Physical Review B*, **2014**, 89, | 3.3 | 5 |
| 80 | Noncollinear magnetic phases and edge states in graphene quantum Hall bars. *Physical Review B*, **2014**, 90, | 3.3 | 22 |
| 79 | Magnetic edge anisotropy in graphenelike honeycomb crystals. *Physical Review Letters*, **2014**, 113, 027203 | 7.4 | 55 |
| 78 | Quantum Hall effect in gapped graphene heterojunctions. *Physical Review B*, **2013**, 88, | 3.3 | 13 |

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| 77 | Local probe of fractional edge states of S=1 Heisenberg spin chains. *Physical Review Letters*, **2013**, 111, 167201 | 7.4 | 13 |
| 76 | Intrinsic spin noise in MgO magnetic tunnel junctions. *Applied Physics Letters*, **2013**, 102, 063102 | 3.4 | 2 |
| 75 | Graphene single-electron transistor as a spin sensor for magnetic adsorbates. *Physical Review B*, **2013**, 87, | 3.3 | 17 |
| 74 | Topologically protected quantum transport in locally exfoliated bismuth at room temperature. *Physical Review Letters*, **2013**, 110, 176802 | 7.4 | 85 |
| 73 | Electronic properties of the MoS2-WS2 heterojunction. *Physical Review B*, **2013**, 87, | 3.3 | 378 |
| 72 | Large spin splitting in the conduction band of transition metal dichalcogenide monolayers. *Physical Review B*, **2013**, 88, | 3.3 | 254 |
| 71 | Anisotropic intrinsic spin relaxation in graphene due to flexural distortions. *Physical Review B*, **2013**, 88, | 3.3 | 28 |
| 70 | Colossal anisotropy in diluted magnetic topological insulators. *Solid State Communications*, **2012**, 152, 403-406 | 1.6 | 17 |
| 69 | Optical control of the spin state of two Mn atoms in a quantum dot. *Physical Review B*, **2012**, 86, | 3.3 | 26 |
| 68 | Spin-filtered edge states in graphene. *Solid State Communications*, **2012**, 152, 1469-1476 | 1.6 | 12 |
| 67 | Storage of classical information in quantum spins. *Physical Review Letters*, **2012**, 108, 196602 | 7.4 | 28 |
| 66 | Impurity states in the quantum spin Hall phase in graphene. *Physical Review B*, **2012**, 86, | 3.3 | 14 |
| 65 | Interplay between sublattice and spin symmetry breaking in graphene. *Physical Review B*, **2012**, 85, | 3.3 | 25 |
| 64 | Probing a single nuclear spin in a silicon single electron transistor. *Applied Physics Letters*, **2012**, 101, 072407 | 3.4 | 1 |
| 63 | Inelastic Electron Tunneling Spectroscopy of a Mn Dimer. *Acta Physica Polonica A*, **2012**, 122, 304-306 | 0.6 | 1 |
| 62 | Spin-orbit interaction in curved graphene ribbons. *Physical Review B*, **2011**, 83, | 3.3 | 26 |
| 61 | Inelastic electron tunneling spectroscopy of a single nuclear spin. *Physical Review Letters*, **2011**, 107, 076804 | 7.4 | 10 |
| 60 | Spin-phonon coupling in single Mn-doped CdTe quantum dot. *Physical Review B*, **2011**, 84, | 3.3 | 21 |

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| 59 | Cotunneling theory of atomic spin inelastic electron tunneling spectroscopy. *Physical Review B*, **2011**, 84, | 3.3 | 27 |
| 58 | Optical initialization, readout, and dynamics of a Mn spin in a quantum dot. *Physical Review B*, **2010**, 81, | 3.3 | 46 |
| 57 | Spin-transfer torque on a single magnetic adatom. *Physical Review Letters*, **2010**, 104, 026601 | 7.4 | 83 |
| 56 | Hydrogenated graphene nanoribbons for spintronics. *Physical Review B*, **2010**, 81, | 3.3 | 108 |
| 55 | Electronic and magnetic structure of graphene nanoribbons. *Semiconductor Science and Technology*, **2010**, 25, 033003 | 1.8 | 55 |
| 54 | Spin dynamics of current-driven single magnetic adatoms and molecules. *Physical Review B*, **2010**, 82, | 3.3 | 48 |
| 53 | Spontaneous persistent currents in a quantum spin Hall insulator. *Physical Review B*, **2010**, 82, | 3.3 | 53 |
| 52 | 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 |
| 51 | Zero-frequency shot noise in an artificial single molecule magnet. *Physica E: Low-Dimensional Systems and Nanostructures*, **2010**, 42, 561-564 | 3 | 1 |
| 50 | The Kondo effect in ferromagnetic atomic contacts. *Nature*, **2009**, 458, 1150-3 | 50.4 | 120 |
| 49 | Giant magnetoresistance in ultrasmall graphene based devices. *Physical Review Letters*, **2009**, 102, 136810 | 7.4 | 249 |
| 48 | Theory of single-spin inelastic tunneling spectroscopy. *Physical Review Letters*, **2009**, 102, 256802 | 7.4 | 121 |
| 47 | Optical probing of spin fluctuations of a single paramagnetic Mn atom in a semiconductor quantum dot. *Physical Review B*, **2008**, 78, | 3.3 | 41 |
| 46 | Prediction of hidden multiferroic order in graphene zigzag ribbons. *Physical Review B*, **2008**, 77, | 3.3 | 97 |
| 45 | Vacancy-induced magnetism in graphene and graphene ribbons. *Physical Review B*, **2008**, 77, | 3.3 | 355 |
| 44 | Performance limits of graphene-ribbon field-effect transistors. *Physical Review B*, **2008**, 77, | 3.3 | 41 |
| 43 | Anisotropic magnetoresistance in nanocontacts. *Physical Review B*, **2008**, 77, | 3.3 | 27 |
| 42 | Single-exciton spectroscopy of single Mn doped InAs quantum dots. *Physical Review B*, **2008**, 78, | 3.3 | 28 |

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| 41 | Hysteretic Linear Conductance in Single Electron Transport through a Single Atom Magnet. *Mathematics in Industry*, **2008**, 460-465 | 0.2 | |
| 40 | Electronic structure of gated graphene and graphene ribbons. *Physical Review B*, **2007**, 75, | 3.3 | 85 |
| 39 | Electronic structure and transport properties of atomic NiO spinvalves. *Journal of Magnetism and Magnetic Materials*, **2007**, 310, e675-e677 | 2.8 | 1 |
| 38 | VO: A strongly correlated metal close to a Mott-Hubbard transition. *Physical Review B*, **2007**, 76, | 3.3 | 15 |
| 37 | Single-electron transport in electrically tunable nanomagnets. *Physical Review Letters*, **2007**, 98, 106805 | 7.4 | 65 |
| 36 | Magnetism in graphene nanoislands. *Physical Review Letters*, **2007**, 99, 177204 | 7.4 | 604 |
| 35 | Electrical control of a single Mn atom in a quantum dot. *Physical Review Letters*, **2006**, 97, 107401 | 7.4 | 138 |
| 34 | Long-range spin-qubit interaction mediated by microcavity polaritons. *Physical Review Letters*, **2006** , 97, 097401 | 7.4 | 28 |
| 33 | Emergence of half-metallicity in suspended NiO chains: Ab initio electronic structure and quantum transport calculations. *Physical Review B*, **2006**, 74, | 3.3 | 23 |
| 32 | Single-exciton spectroscopy of semimagnetic quantum dots. *Physical Review B*, **2006**, 73, | 3.3 | 82 |
| 31 | Coherent transport in graphene nanoconstrictions. *Physical Review B*, **2006**, 74, | 3.3 | 150 |
| 30 | Mn-doped II-VI quantum dots: artificial molecular magnets. *Physica Status Solidi C: Current Topics in Solid State Physics*, **2006**, 3, 3734-3739 | | 15 |
| 29 | Anisotropic magnetoresistance in single electron transport. *Physica Status Solidi C: Current Topics in Solid State Physics*, **2006**, 3, 4231-4234 | | 3 |
| 28 | Spin properties of charged single Mn-doped quantum dots. *Physica Status Solidi (B): Basic Research*, **2006**, 243, 3912-3916 | 1.3 | 6 |
| 27 | Transport in magnetically ordered Pt nanocontacts. *Physical Review B*, **2005**, 72, | 3.3 | 32 |
| 26 | Anisotropic exchange interaction induced by a single photon in semiconductor microcavities. *Physical Review B*, **2005**, 72, | 3.3 | 11 |
| 25 | Magnetic and orbital blocking in Ni nanocontacts. *Physical Review B*, **2005**, 71, | 3.3 | 60 |
| 24 | Ferromagnetism mediated by few electrons in a semimagnetic quantum dot. *Physical Review Letters*, **2004**, 93, 117201 | 7.4 | 88 |

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|---|---|---|---|
| 23 | Spin depolarization in the transport of holes across GaxMn1-xAs/GayAl1-yAs/p-GaAs. *Physical Review B*, **2004**, 70, | 3.3 | 9 |
| 22 | Influence of a uniform current on collective magnetization dynamics in a ferromagnetic metal. *Physical Review B*, **2004**, 69, | 3.3 | 85 |
| 21 | Optical control of the magnetization damping in ferromagnetic semiconductors. *Journal of Magnetism and Magnetic Materials*, **2004**, 272-276, 1913-1914 | 2.8 | 8 |
| 20 | Coherently photoinduced ferromagnetism in diluted magnetic semiconductors. *Physical Review Letters*, **2004**, 93, 127201 | 7.4 | 34 |
| 19 | Tunnel magnetoresistance in GaMnAs: Going beyond Julliere formula. *Applied Physics Letters*, **2004**, 85, 1996-1998 | 3.4 | 56 |
| 18 | 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 | 3 | |
| 17 | Spin separation in digital ferromagnetic heterostructures. *Physical Review B*, **2002**, 66, | 3.3 | 12 |
| 16 | Fermi-edge singularities in linear and nonlinear ultrafast spectroscopy. *Physical Review B*, **2001**, 63, | 3.3 | 3 |
| 15 | Microscopic theory for quantum mirages in quantum corrals. *Physical Review B*, **2001**, 63, | 3.3 | 35 |
| 14 | Theory of ferromagnetism in planar heterostructures of (Mn,III)-V semiconductors. *Physical Review B*, **2001**, 64, | 3.3 | 51 |
| 13 | Microscopic theory of exciton coherent control and Rayleigh scattering in semiconductor quantum wells. *Semiconductor Science and Technology*, **2000**, 15, R65-R80 | 1.8 | 2 |
| 12 | Comment on "Quantum theory of secondary emission in optically excited semiconductor quantum wells". *Physical Review Letters*, **2000**, 84, 2281; author reply 2282 | 7.4 | 3 |
| 11 | Coherent Response to Optical Pulses in Quantum Wells **2000**, 143-157 | | |
| 10 | Interferences and coherent control of excitons in GaAs quantum wells. *Journal of Physics Condensed Matter*, **1999**, 11, 6013-6021 | 1.8 | 3 |
| 9 | Exciton beats in GaAs quantum wells: bosonic representation and collective effects. *Solid State Communications*, **1999**, 112, 597-600 | 1.6 | 3 |
| 8 | Coherent-light emission from exciton condensates in semiconductor quantum wells. *Solid State Communications*, **1998**, 108, 473-477 | 1.6 | 25 |
| 7 | Condensation of 2D electron-hole pairs with spin degree of freedom. *Physica B: Condensed Matter*, **1998**, 249-251, 714-717 | 2.8 | |
| 6 | Spin Degree of Freedom in Two Dimensional Exciton Condensates. *Physical Review Letters*, **1997**, 78, 4809-4812 | 7.4 | 64 |

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| 5 | Ferromagnetism in 2D Exciton Condensates. *Physica Status Solidi A*, **1997**, 164, 343-346 | | 4 |
| 4 | Polarized interacting exciton gas in quantum wells and bulk semiconductors. *Physical Review B*, **1996**, 54, 11582-11591 | 3.3 | 45 |
| 3 | Spin splitting of excitons in GaAs quantum wells at zero magnetic field. *Solid-State Electronics*, **1996** , 40, 755-758 | 1.7 | 5 |
| 2 | Spin splitting in a polarized quasi-two-dimensional exciton gas. *Physical Review B*, **1996**, 54, R8317-R8320 | 3.3 | 53 |
| 1 | Exciton and Polariton Condensation153-189 | | |