Pablo Jarillo-Herrero

List of Publications by Year
in descending order

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153 papers	43,528 citations	4383 86 h-index	7340 152 g-index
159 all docs	159 docs citations	159 times ranked	29726 citing authors

#	Article	IF	Citations
1	Unconventional superconductivity in magic-angle graphene superlattices. Nature, 2018, 556, 43-50.	13.7	5,221
2	Layer-dependent ferromagnetism in a van der Waals crystal down to the monolayer limit. Nature, 2017, 546, 270-273.	13.7	3,824
3	Correlated insulator behaviour at half-filling in magic-angle graphene superlattices. Nature, 2018, 556, 80-84.	13.7	3,086
4	Massive Dirac Fermions and Hofstadter Butterfly in a van der Waals Heterostructure. Science, 2013, 340, 1427-1430.	6.0	1,392
5	Optoelectronic devices based on electrically tunable pâ€“n diodes in a monolayer dichalcogenide. Nature Nanotechnology, 2014, 9, 262-267.	15.6	1,270
6	Scanning tunnelling microscopy and spectroscopy of ultra-flat graphene on hexagonal boron nitride. Nature Materials, 2011, 10, 282-285.	13.3	1,157
7	Bipolar supercurrent in graphene. Nature, 2007, 446, 56-59.	13.7	1,095
8	Electrical control of 2D magnetism in bilayer CrI3. Nature Nanotechnology, 2018, 13, 544-548.	15.6	975
9	Tunable Phonon Polaritons in Atomically Thin van der Waals Crystals of Boron Nitride. Science, 2014, 343, 1125-1129.	6.0	957
10	Emergence of superlattice Dirac points in graphene on hexagonal boron nitride. Nature Physics, 2012, 8, 382-386.	6.5	956
11	Observation of Floquet-Bloch States on the Surface of a Topological Insulator. Science, 2013, 342, 453-457.	6.0	902
12	Hot Carrierâ€“Assisted Intrinsic Photoresponse in Graphene. Science, 2011, 334, 648-652.	6.0	876
13	Probing magnetism in 2D van der Waals crystalline insulators via electron tunneling. Science, 2018, 360, 1218-1222.	6.0	668
14	Observation of the quantum spin Hall effect up to 100 kelvin in a monolayer crystal. Science, 2018, 359, 76-79.	6.0	613
15	Intrinsic Electronic Transport Properties of High-Quality Monolayer and Bilayer MoS₂. Nano Letters, 2013, 13, 4212-4216.	4.5	558
16	Phosphorus joins the family. Nature Nanotechnology, 2014, 9, 330-331.	15.6	528
17	Graphene on hexagonal boron nitride as a tunable hyperbolic metamaterial. Nature Nanotechnology, 2015, 10, 682-686.	15.6	526
18	Anisotropic Etching and Nanoribbon Formation in Single-Layer Graphene. Nano Letters, 2009, 9, 2600-2604.	4.5	483

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19	Control over topological insulator photocurrents with light polarization. Nature Nanotechnology, 2012, 7, 96-100.	15.6	483
20	Recent progress in the assembly of nanodevices and van der Waals heterostructures by deterministic placement of 2D materials. Chemical Society Reviews, 2018, 47, 53-68.	18.7	473
21	Understanding and controlling the substrate effect on graphene electron-transfer chemistry via reactivity imprint lithography. Nature Chemistry, 2012, 4, 724-732.	6.6	463
22	Tunable strongly coupled superconductivity in magic-angle twisted trilayer graphene. Nature, 2021, 590, 249-255.	13.7	449
23	Electronic Transport and Quantum Hall Effect in Bipolar Graphene<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>p</mml:mi><mml:mtext mathvariant="normal">âˆ’</mml:mtext><mml:mi>n</mml:mi><mml:mtext mathvariant="normal">âˆ’</mml:mtext><mml:mi>p</mml:mi></mml:math>Junctions. Physical Review Letters, 2007, 99, 166804.	2.9	434
24	Tunable correlated states and spin-polarized phases in twisted bilayerâ€“bilayer graphene. Nature, 2020, 583, 215-220.	13.7	433
25	Observation of the nonlinear Hall effect under time-reversal-symmetric conditions. Nature, 2019, 565, 337-342.	13.7	372
26	A high-temperature ferromagnetic topological insulating phase by proximity coupling. Nature, 2016, 533, 513-516.	13.7	359
27	Tunable and high-purity room temperature single-photon emission from atomic defects in hexagonal boron nitride. Nature Communications, 2017, 8, 705.	5.8	351
28	A MoTe2-based light-emitting diode and photodetector for silicon photonic integrated circuits. Nature Nanotechnology, 2017, 12, 1124-1129.	15.6	344
29	Stacking-engineered ferroelectricity in bilayer boron nitride. Science, 2021, 372, 1458-1462.	6.0	344
30	Quantum supercurrent transistors in carbon nanotubes. Nature, 2006, 439, 953-956.	13.7	342
31	Orbital Kondo effect in carbon nanotubes. Nature, 2005, 434, 484-488.	13.7	341
32	Subdiffractional focusing and guiding of polaritonic rays in a natural hyperbolic material. Nature Communications, 2015, 6, 6963.	5.8	340
33	van der Waals heterostructures combining graphene and hexagonal boron nitride. Nature Reviews Physics, 2019, 1, 112-125.	11.9	320
34	Superlattice-Induced Insulating States and Valley-Protected Orbits in Twisted Bilayer Graphene. Physical Review Letters, 2016, 117, 116804.	2.9	312
35	Cascade of phase transitions and Dirac revivals in magic-angle graphene. Nature, 2020, 582, 203-208.	13.7	297
36	Nearly flat Chern bands in moirÃ© superlattices. Physical Review B, 2019, 99, .	1.1	295

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37	Strange Metal in Magic-Angle Graphene with near Planckian Dissipation. Physical Review Letters, 2020, 124, 076801.	2.9	293
38	Electrically tunable surface-to-bulk coherent coupling in topological insulator thin films. Physical Review B, 2011, 84, .	1.1	291
39	Direct optical detection of Weyl fermion chirality in a topological semimetal. Nature Physics, 2017, 13, 842-847.	6.5	291
40	Exchange-Coupling-Induced Symmetry Breaking in Topological Insulators. Physical Review Letters, 2013, 110, 186807.	2.9	284
41	Etching of Graphene Devices with a Helium Ion Beam. ACS Nano, 2009, 3, 2674-2676.	7.3	283
42	Ligand-field helical luminescence in a 2D ferromagnetic insulator. Nature Physics, 2018, 14, 277-281.	6.5	275
43	Surface State Transport and Ambipolar Electric Field Effect in Bi₂Se₃ Nanodevices. Nano Letters, 2010, 10, 5032-5036.	4.5	272
44	Electrically tunable low-density superconductivity in a monolayer topological insulator. Science, 2018, 362, 926-929.	6.0	271
45	The marvels of moirÃ© materials. Nature Reviews Materials, 2021, 6, 201-206.	23.3	262
46	Electrically switchable Berry curvature dipole in the monolayer topological insulator WTe2. Nature Physics, 2018, 14, 900-906.	6.5	249
47	Mapping the twist-angle disorder and Landau levels in magic-angle graphene. Nature, 2020, 581, 47-52.	13.7	241
48	Tunneling in Suspended Carbon Nanotubes Assisted by Longitudinal Phonons. Physical Review Letters, 2006, 96, 026801.	2.9	229
49	Tunable symmetry breaking and helical edge transport in a graphene quantum spin Hall state. Nature, 2014, 505, 528-532.	13.7	229
50	Nematicity and competing orders in superconducting magic-angle graphene. Science, 2021, 372, 264-271.	6.0	223
51	Measurement of Intrinsic Dirac Fermion Cooling on the Surface of the Topological Insulator<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mi>Bi</mml:mi><mml:mn>2</mml:mn></mml:msub><mml:msub><mml:mi>Se</mml:mi><mml:mn [illegible] Time-Resolved and Angle-Resolved Photoemission Spectroscopy. Physical Review Letters, 2012, 109, 127401.	2.9	221
52	Valleytronics: Opportunities, Challenges, and Paths Forward. Small, 2018, 14, e1801483.	5.2	221
53	Electron-hole symmetry in a semiconducting carbon nanotube quantum dot. Nature, 2004, 429, 389-392.	13.7	213
54	Emergent phenomena and proximity effects in two-dimensional magnets and heterostructures. Nature Materials, 2020, 19, 1276-1289.	13.3	213

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55	Quantum Hall effect and Landau-level crossing of Dirac fermions in trilayer graphene. Nature Physics, 2011, 7, 621-625.	6.5	211
56	Generation of photovoltage in graphene on a femtosecond timescale through efficient carrier heating. Nature Nanotechnology, 2015, 10, 437-443.	15.6	210
57	Parallel Stitching of 2D Materials. Advanced Materials, 2016, 28, 2322-2329.	11.1	195
58	Electronic Transport in Dual-Gated Bilayer Graphene at Large Displacement Fields. Physical Review Letters, 2010, 105, 166601.	2.9	184
59	Configurable phonon polaritons in twisted Î±-MoO3. Nature Materials, 2020, 19, 1307-1311.	13.3	180
60	BN/Graphene/BN Transistors for RF Applications. IEEE Electron Device Letters, 2011, 32, 1209-1211.	2.2	179
61	Electronic transport in locally gated graphene nanoconstrictions. Applied Physics Letters, 2007, 91, .	1.5	171
62	Interfacial ferroelectricity in rhombohedral-stacked bilayer transition metal dichalcogenides. Nature Nanotechnology, 2022, 17, 367-371.	15.6	167
63	Enhancement of interlayer exchange in an ultrathin two-dimensional magnet. Nature Physics, 2019, 15, 1255-1260.	6.5	165
64	Unconventional ferroelectricity in moirÃ© heterostructures. Nature, 2020, 588, 71-76.	13.7	165
65	Pauli-limit violation and re-entrant superconductivity in moirÃ© graphene. Nature, 2021, 595, 526-531.	13.7	165
66	Fractional Chern insulators in magic-angle twisted bilayer graphene. Nature, 2021, 600, 439-443.	13.7	158
67	Light-induced charge density wave in LaTe3. Nature Physics, 2020, 16, 159-163.	6.5	157
68	Ferromagnetism in thin-film Cr-doped topological insulator Bi2Se3. Applied Physics Letters, 2012, 100, .	1.5	151
69	Electrically tunable transverse magnetic focusing in graphene. Nature Physics, 2013, 9, 225-229.	6.5	151
70	Pressure dependence of the magic twist angle in graphene superlattices. Physical Review B, 2018, 98, .	1.1	146
71	Evidence for topological defects in a photoinduced phase transition. Nature Physics, 2019, 15, 27-31.	6.5	128
72	Quantum Hall Effect, Screening, and Layer-Polarized Insulating States in Twisted Bilayer Graphene. Physical Review Letters, 2012, 108, 076601.	2.9	127

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73	Tuning ultrafast electron thermalization pathways in a van der Waals heterostructure. Nature Physics, 2016, 12, 455-459.	6.5	127
74	Flavour Hundâ€™s coupling, Chern gaps and charge diffusivity in moirÃ© graphene. Nature, 2021, 592, 43-48.	13.7	127
75	Gigahertz Frequency Antiferromagnetic Resonance and Strong Magnon-Magnon Coupling in the Layered Crystal <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mi>CrCl</mml:mi></mml:mrow><mml:mrow><mml:mn>3</mml:mn></n Physical Review Letters, 2019, 123, 047204.	2.9	118
76	Coherent control of a hybrid superconducting circuit made with graphene-based van der Waals heterostructures. Nature Nanotechnology, 2019, 14, 120-125.	15.6	118
77	Entropic evidence for a Pomeranchuk effect in magic-angle graphene. Nature, 2021, 592, 214-219.	13.7	118
78	Electronic Transport of Encapsulated Graphene and WSe₂ Devices Fabricated by Pick-up of Prepatterned hBN. Nano Letters, 2015, 15, 1898-1903.	4.5	115
79	Observation of Exciton Redshiftâ€"Blueshift Crossover in Monolayer WS₂. Nano Letters, 2017, 17, 4210-4216.	4.5	107
80	Electronic Compressibility of Magic-Angle Graphene Superlattices. Physical Review Letters, 2019, 123, 046601.	2.9	106
81	Spatially resolved edge currents and guided-wave electronic states in graphene. Nature Physics, 2016, 12, 128-133.	6.5	105
82	Robust superconductivity in magic-angle multilayer graphene family. Nature Materials, 2022, 21, 877-883.	13.3	100
83	Electrical control of optical emitter relaxation pathways enabled by graphene. Nature Physics, 2015, 11, 281-287.	6.5	99
84	Electronic Transport Spectroscopy of Carbon Nanotubes in a Magnetic Field. Physical Review Letters, 2005, 94, 156802.	2.9	90
85	Electric field control of soliton motion and stacking in trilayer graphene. Nature Materials, 2014, 13, 786-789.	13.3	90
86	Electronic excitation spectrum of metallic carbon nanotubes. Physical Review B, 2005, 71, .	1.1	88
87	High temperature ferromagnetism in Ï€-conjugated two-dimensional metalâ€"organic frameworks. Chemical Science, 2017, 8, 2859-2867.	3.7	86
88	Direct measurement of proximity-induced magnetism at the interface between a topological insulator and a ferromagnet. Nature Communications, 2016, 7, 12014.	5.8	83
89	Graphene-Based Thermopile for Thermal Imaging Applications. Nano Letters, 2015, 15, 7211-7216.	4.5	81
90	Tunnelling spectroscopy of Andreev states inÂgraphene. Nature Physics, 2017, 13, 756-760.	6.5	81

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91	Enhanced superconductivity upon weakening of charge density wave transport in <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mn>2</mml:mn><mml:mi>H</mml:mi><mml:msub><mml in the two-dimensional limit. Physical Review B, 2018, 98, .	1.1	81
92	Near-field photocurrent nanoscopy on bare and encapsulated graphene. Nature Communications, 2016, 7, 10783.	5.8	80
93	Spontaneous gyrotropic electronic order in a transition-metal dichalcogenide. Nature, 2020, 578, 545-549.	13.7	80
94	Efficiency of Launching Highly Confined Polaritons by Infrared Light Incident on a Hyperbolic Material. Nano Letters, 2017, 17, 5285-5290.	4.5	79
95	Unconventional sequence of correlated Chern insulators in magic-angle twisted bilayer graphene. Nature Physics, 2021, 17, 1210-1215.	6.5	78
96	Observation of suppressed terahertz absorption in photoexcited graphene. Applied Physics Letters, 2013, 102, .	1.5	73
97	Phonon Polaritons in Monolayers of Hexagonal Boron Nitride. Advanced Materials, 2019, 31, e1806603.	11.1	73
98	Helical edge states and fractional quantum Hall effect in a graphene electronâ€“hole bilayer. Nature Nanotechnology, 2017, 12, 118-122.	15.6	72
99	Hot-carrier photocurrent effects at grapheneâ€“metal interfaces. Journal of Physics Condensed Matter, 2015, 27, 164207.	0.7	71
100	Excited State Spectroscopy in Carbon Nanotube Double Quantum Dots. Nano Letters, 2006, 6, 1350-1355.	4.5	70
101	Competing Channels for Hot-Electron Cooling in Graphene. Physical Review Letters, 2014, 112, 247401.	2.9	69
102	Mach-Zehnder interferometry using spin- and valley-polarized quantum Hall edge states in graphene. Science Advances, 2017, 3, e1700600.	4.7	64
103	Manipulation and Steering of Hyperbolic Surface Polaritons in Hexagonal Boron Nitride. Advanced Materials, 2018, 30, e1706358.	11.1	63
104	Disorder Imposed Limits of Mono- and Bilayer Graphene Electronic Modification Using Covalent Chemistry. Nano Letters, 2013, 13, 809-817.	4.5	62
105	Giant intrinsic photoresponse in pristine graphene. Nature Nanotechnology, 2019, 14, 145-150.	15.6	61
106	Induced superconductivity in graphene. Solid State Communications, 2007, 143, 72-76.	0.9	58
107	Highly tunable junctions and non-local Josephson effect in magic-angle graphene tunnelling devices. Nature Nanotechnology, 2021, 16, 769-775.	15.6	58
108	Fizeau drag in graphene plasmonics. Nature, 2021, 594, 513-516.	13.7	57

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109	Deepâ€Learningâ€Enabled Fast Optical Identification and Characterization of 2D Materials. Advanced Materials, 2020, 32, e2000953.	11.1	54
110	Dynamical Slowing-Down in an Ultrafast Photoinduced Phase Transition. Physical Review Letters, 2019, 123, 097601.	2.9	50
111	Magnetoresistance and quantum oscillations of an electrostatically tuned semimetal-to-metal transition in ultrathin<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi>WTe</mml:mi><mml:mn>2</mml:mn></mml:msub></m Physical Review B, 2017, 95, .	1.1	49
112	Quantum and classical confinement of resonant states in a trilayer graphene Fabry-PÃ©rot interferometer. Nature Communications, 2012, 3, 1239.	5.8	48
113	Cascade of isospin phase transitions in Bernal-stacked bilayer graphene at zero magnetic field. Nature Physics, 2022, 18, 771-775.	6.5	48
114	Observation of interband collective excitations in twisted bilayer graphene. Nature Physics, 2021, 17, 1162-1168.	6.5	47
115	Photoresponse of an Electrically Tunable Ambipolar Graphene Infrared Thermocouple. Nano Letters, 2014, 14, 901-907.	4.5	44
116	Asymmetric hot-carrier thermalization and broadband photoresponse in graphene-2D semiconductor lateral heterojunctions. Science Advances, 2019, 5, eaav1493.	4.7	43
117	Phaseâ€Change Hyperbolic Heterostructures for Nanopolaritonics: A Case Study of hBN/VO₂. Advanced Materials, 2019, 31, e1900251.	11.1	43
118	Quantum dots in carbon nanotubes. Semiconductor Science and Technology, 2006, 21, S52-S63.	1.0	41
119	Production of very neutron-deficient isotopes near Sn via reactions involving light-particle and cluster emission. Nuclear Physics A, 2000, 669, 43-50.	0.6	40
120	Long-Wavelength Local Density of States Oscillations Near Graphene Step Edges. Physical Review Letters, 2012, 108, 016801.	2.9	37
121	Hexagonal boron nitride as a low-loss dielectric for superconducting quantum circuits and qubits. Nature Materials, 2022, 21, 398-403.	13.3	34
122	Electrostatic Coupling between Two Surfaces of a Topological Insulator Nanodevice. Physical Review Letters, 2014, 113, 206801.	2.9	33
123	Large Variations of the Raman Signal in the Spectra of Twisted Bilayer Graphene on a BN Substrate. Journal of Physical Chemistry Letters, 2012, 3, 796-799.	2.1	30
124	Internal Nanostructure Diagnosis with Hyperbolic Phonon Polaritons in Hexagonal Boron Nitride. Nano Letters, 2018, 18, 5205-5210.	4.5	29
125	Coupling between electronic transport and longitudinal phonons in suspended nanotubes. New Journal of Physics, 2005, 7, 243-243.	1.2	28
126	Landau Level Splittings, Phase Transitions, and Nonuniform Charge Distribution in Trilayer Graphene. Physical Review Letters, 2016, 117, 066601.	2.9	28

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127	Topological crystalline insulator states in the <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msub><mml:mi>Ca</mml:mi><mml:mn>2</mml:mn></mml: family. Physical Review B, 2018, 98, .	1.1	28
128	Observation of Electron Coherence and Fabryâ€“Perot Standing Waves at a Graphene Edge. Nano Letters, 2017, 17, 7380-7386.	4.5	26
129	Band structure mapping of bilayer graphene via quasiparticle scattering. APL Materials, 2014, 2, .	2.2	22
130	Tunneling in grapheneâ€“topological insulator hybrid devices. Physical Review B, 2015, 92, .	1.1	21
131	Role of Equilibrium Fluctuations in Light-Induced Order. Physical Review Letters, 2021, 127, 227401.	2.9	16
132	Cyclotron resonance overtones and near-field magnetoabsorption via terahertz Bernstein modes in graphene. Nature Physics, 2022, 18, 462-467.	6.5	16
133	Observation of chiral currents at the magnetic domain boundary of a topological insulator. Science, 2015, 349, 948-952.	6.0	15
134	Hyperbolic phonon polaritons with positive and negative phase velocities in suspended <i>Î±</i> -MoO3. Applied Physics Letters, 2022, 120, .	1.5	15
135	The Ising on the monolayer. Nature Physics, 2016, 12, 112-113.	6.5	14
136	Unconventional Hysteretic Transition in a Charge Density Wave. Physical Review Letters, 2022, 128, 036401.	2.9	14
137	Active and Passive Tuning of Ultranarrow Resonances in Polaritonic Nanoantennas. Advanced Materials, 2022, 34, e2104954.	11.1	13
138	Large Photothermal Effect in Subâ€40 nm hâ€BN Nanostructures Patterned Via Highâ€Resolution Ion Beam. Small, 2018, 14, 1800072.	5.2	12
139	Observation of Terahertz-Induced Magnetooscillations in Graphene. Nano Letters, 2020, 20, 5943-5950.	4.5	12
140	Manifestations of phase-coherent transport in graphene. European Physical Journal: Special Topics, 2007, 148, 27-37.	1.2	11
141	Strong Interminivalley Scattering in Twisted Bilayer Graphene Revealed by High-Temperature Magneto-Oscillations. Physical Review Letters, 2021, 127, 056802.	2.9	11
142	Pulling Apart Molecular Magnetism. Science, 2010, 328, 1362-1363.	6.0	10
143	Tunneling spectroscopy of graphene nanodevices coupled to large-gap superconductors. Physical Review B, 2018, 98, .	1.1	10
144	A versatile sample fabrication method for ultrafast electron diffraction. Ultramicroscopy, 2021, 230, 113389.	0.8	10

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145	Compact mid-infrared graphene thermopile enabled by a nanopatterning technique of electrolyte gates. New Journal of Physics, 2018, 20, 083050.	1.2	5
146	Photothermal Effect: Large Photothermal Effect in Subâ€40 nm hâ€BN Nanostructures Patterned Via Highâ€Resolution Ion Beam (Small 22/2018). Small, 2018, 14, 1870101.	5.2	1
147	Reply to: Dirac-point photocurrents due to photothermoelectric effect in non-uniform graphene devices. Nature Nanotechnology, 2020, 15, 244-246.	15.6	1
148	Hyperbolic phonon polaritons in hexagonal boron nitride (Conference Presentation). , 2016, , .		0
149	Combining time-resolved optical (TOS), electronic (trARPES) and structural (UED) probes on the class of rare earth tritellurides RTe3. EPJ Web of Conferences, 2019, 205, 04009.	0.1	0
150	Observation of Floquet-Bloch states on the surface of a topological insulator. , 2014, , .		0
151	Observation of Floquet-Bloch States on the Surface of a Topological Insulator. , 2014, , .		0
152	Tunable Quantum Emission from Atomic Defects in Hexagonal Boron Nitride. , 2017, , .		0
153	Self-Aligned Local Electrolyte Gating of 2D Materials for Mid-Infrared Photodetection. , 2017, , .		0