

Pablo Jarillo-Herrero

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145
papers

28,985
citations

72
h-index

159
g-index

159
ext. papers

36,790
ext. citations

20.4
avg, IF

7.5
L-index

#	Paper	IF	Citations
145	Unconventional superconductivity in magic-angle graphene superlattices. <i>Nature</i> , 2018 , 556, 43-50	50.4	2942
144	Layer-dependent ferromagnetism in a van der Waals crystal down to the monolayer limit. <i>Nature</i> , 2017 , 546, 270-273	50.4	2210
143	Correlated insulator behaviour at half-filling in magic-angle graphene superlattices. <i>Nature</i> , 2018 , 556, 80-84	50.4	1771
142	Massive Dirac fermions and Hofstadter butterfly in a van der Waals heterostructure. <i>Science</i> , 2013 , 340, 1427-30	33.3	1092
141	Optoelectronic devices based on electrically tunable p-n diodes in a monolayer dichalcogenide. <i>Nature Nanotechnology</i> , 2014 , 9, 262-7	28.7	1065
140	Bipolar supercurrent in graphene. <i>Nature</i> , 2007 , 446, 56-9	50.4	1001
139	Scanning tunnelling microscopy and spectroscopy of ultra-flat graphene on hexagonal boron nitride. <i>Nature Materials</i> , 2011 , 10, 282-5	27	985
138	Emergence of superlattice Dirac points in graphene on hexagonal boron nitride. <i>Nature Physics</i> , 2012 , 8, 382-386	16.2	793
137	Hot carrier-assisted intrinsic photoresponse in graphene. <i>Science</i> , 2011 , 334, 648-52	33.3	722
136	Tunable phonon polaritons in atomically thin van der Waals crystals of boron nitride. <i>Science</i> , 2014 , 343, 1125-9	33.3	695
135	Observation of Floquet-Bloch states on the surface of a topological insulator. <i>Science</i> , 2013 , 342, 453-7	33.3	644
134	Electrical control of 2D magnetism in bilayer CrI. <i>Nature Nanotechnology</i> , 2018 , 13, 544-548	28.7	626
133	Intrinsic electronic transport properties of high-quality monolayer and bilayer MoS ₂ . <i>Nano Letters</i> , 2013 , 13, 4212-6	11.5	483
132	Probing magnetism in 2D van der Waals crystalline insulators via electron tunneling. <i>Science</i> , 2018 , 360, 1218-1222	33.3	444
131	Two-dimensional crystals: phosphorus joins the family. <i>Nature Nanotechnology</i> , 2014 , 9, 330-1	28.7	444
130	Anisotropic etching and nanoribbon formation in single-layer graphene. <i>Nano Letters</i> , 2009 , 9, 2600-4	11.5	438
129	Understanding and controlling the substrate effect on graphene electron-transfer chemistry via reactivity imprint lithography. <i>Nature Chemistry</i> , 2012 , 4, 724-32	17.6	407

128	Electronic transport and quantum hall effect in bipolar graphene p-n-p junctions. <i>Physical Review Letters</i> , 2007 , 99, 166804	7.4	403
127	Observation of the quantum spin Hall effect up to 100 kelvin in a monolayer crystal. <i>Science</i> , 2018 , 359, 76-79	33.3	401
126	Graphene on hexagonal boron nitride as a tunable hyperbolic metamaterial. <i>Nature Nanotechnology</i> , 2015 , 10, 682-6	28.7	390
125	Control over topological insulator photocurrents with light polarization. <i>Nature Nanotechnology</i> , 2011 , 7, 96-100	28.7	375
124	Orbital Kondo effect in carbon nanotubes. <i>Nature</i> , 2005 , 434, 484-8	50.4	315
123	Recent progress in the assembly of nanodevices and van der Waals heterostructures by deterministic placement of 2D materials. <i>Chemical Society Reviews</i> , 2018 , 47, 53-68	58.5	312
122	Quantum supercurrent transistors in carbon nanotubes. <i>Nature</i> , 2006 , 439, 953-6	50.4	311
121	A high-temperature ferromagnetic topological insulating phase by proximity coupling. <i>Nature</i> , 2016 , 533, 513-6	50.4	277
120	Electrically tunable surface-to-bulk coherent coupling in topological insulator thin films. <i>Physical Review B</i> , 2011 , 84,	3.3	261
119	Etching of graphene devices with a helium ion beam. <i>ACS Nano</i> , 2009 , 3, 2674-6	16.7	257
118	Subdiffractional focusing and guiding of polaritonic rays in a natural hyperbolic material. <i>Nature Communications</i> , 2015 , 6, 6963	17.4	255
117	Surface state transport and ambipolar electric field effect in Bi ₂ Se ₃ nanodevices. <i>Nano Letters</i> , 2010 , 10, 5032-6	11.5	247
116	Exchange-coupling-induced symmetry breaking in topological insulators. <i>Physical Review Letters</i> , 2013 , 110, 186807	7.4	238
115	A MoTe ₂ -based light-emitting diode and photodetector for silicon photonic integrated circuits. <i>Nature Nanotechnology</i> , 2017 , 12, 1124-1129	28.7	229
114	Tunable and high-purity room temperature single-photon emission from atomic defects in hexagonal boron nitride. <i>Nature Communications</i> , 2017 , 8, 705	17.4	226
113	Superlattice-Induced Insulating States and Valley-Protected Orbits in Twisted Bilayer Graphene. <i>Physical Review Letters</i> , 2016 , 117, 116804	7.4	218
112	Tunneling in suspended carbon nanotubes assisted by longitudinal phonons. <i>Physical Review Letters</i> , 2006 , 96, 026801	7.4	212
111	Tunable correlated states and spin-polarized phases in twisted bilayer-bilayer graphene. <i>Nature</i> , 2020 , 583, 215-220	50.4	209

110	Electron-hole symmetry in a semiconducting carbon nanotube quantum dot. <i>Nature</i> , 2004 , 429, 389-92	50.4	199
109	Ligand-field helical luminescence in a 2D ferromagnetic insulator. <i>Nature Physics</i> , 2018 , 14, 277-281	16.2	192
108	Tunable symmetry breaking and helical edge transport in a graphene quantum spin Hall state. <i>Nature</i> , 2014 , 505, 528-32	50.4	188
107	Direct optical detection of Weyl fermion chirality in a topological semimetal. <i>Nature Physics</i> , 2017 , 13, 842-847	16.2	184
106	Quantum Hall effect and Landau-level crossing of Dirac fermions in trilayer graphene. <i>Nature Physics</i> , 2011 , 7, 621-625	16.2	182
105	van der Waals heterostructures combining graphene and hexagonal boron nitride. <i>Nature Reviews Physics</i> , 2019 , 1, 112-125	23.6	177
104	Nearly flat Chern bands in moiré superlattices. <i>Physical Review B</i> , 2019 , 99,	3.3	177
103	Measurement of intrinsic dirac fermion cooling on the surface of the topological insulator Bi ₂ Se ₃ using time-resolved and angle-resolved photoemission spectroscopy. <i>Physical Review Letters</i> , 2012 , 109, 127401	7.4	168
102	Electrically tunable low-density superconductivity in a monolayer topological insulator. <i>Science</i> , 2018 , 362, 926-929	33.3	167
101	Electronic transport in dual-gated bilayer graphene at large displacement fields. <i>Physical Review Letters</i> , 2010 , 105, 166601	7.4	161
100	Parallel Stitching of 2D Materials. <i>Advanced Materials</i> , 2016 , 28, 2322-9	24	161
99	Generation of photovoltage in graphene on a femtosecond timescale through efficient carrier heating. <i>Nature Nanotechnology</i> , 2015 , 10, 437-43	28.7	159
98	Observation of the nonlinear Hall effect under time-reversal-symmetric conditions. <i>Nature</i> , 2019 , 565, 337-342	50.4	159
97	BN/Graphene/BN Transistors for RF Applications. <i>IEEE Electron Device Letters</i> , 2011 , 32, 1209-1211	4.4	157
96	Electronic transport in locally gated graphene nanoconstrictions. <i>Applied Physics Letters</i> , 2007 , 91, 192107	3.4	156
95	Electrically switchable Berry curvature dipole in the monolayer topological insulator WTe ₂ . <i>Nature Physics</i> , 2018 , 14, 900-906	16.2	143
94	Ferromagnetism in thin-film Cr-doped topological insulator Bi ₂ Se ₃ . <i>Applied Physics Letters</i> , 2012 , 100, 082404	3.4	133
93	Strange Metal in Magic-Angle Graphene with near Planckian Dissipation. <i>Physical Review Letters</i> , 2020 , 124, 076801	7.4	133

92	Cascade of phase transitions and Dirac revivals in magic-angle graphene. <i>Nature</i> , 2020 , 582, 203-208	50.4	130
91	Tunable strongly coupled superconductivity in magic-angle twisted trilayer graphene. <i>Nature</i> , 2021 , 590, 249-255	50.4	125
90	Electrically tunable transverse magnetic focusing in graphene. <i>Nature Physics</i> , 2013 , 9, 225-229	16.2	123
89	Mapping the twist-angle disorder and Landau levels in magic-angle graphene. <i>Nature</i> , 2020 , 581, 47-52	50.4	118
88	Quantum Hall effect, screening, and layer-polarized insulating states in twisted bilayer graphene. <i>Physical Review Letters</i> , 2012 , 108, 076601	7.4	107
87	Pressure dependence of the magic twist angle in graphene superlattices. <i>Physical Review B</i> , 2018 , 98,	3.3	103
86	Electronic transport of encapsulated graphene and WSe ₂ devices fabricated by pick-up of prepatterned hBN. <i>Nano Letters</i> , 2015 , 15, 1898-903	11.5	98
85	Tuning ultrafast electron thermalization pathways in a van der Waals heterostructure. <i>Nature Physics</i> , 2016 , 12, 455-459	16.2	96
84	Valleytronics: Opportunities, Challenges, and Paths Forward. <i>Small</i> , 2018 , 14, e1801483	11	96
83	Enhancement of interlayer exchange in an ultrathin two-dimensional magnet. <i>Nature Physics</i> , 2019 , 15, 1255-1260	16.2	85
82	Electrical control of optical emitter relaxation pathways enabled by graphene. <i>Nature Physics</i> , 2015 , 11, 281-287	16.2	85
81	Electronic excitation spectrum of metallic carbon nanotubes. <i>Physical Review B</i> , 2005 , 71,	3.3	85
80	Spatially resolved edge currents and guided-wave electronic states in graphene. <i>Nature Physics</i> , 2016 , 12, 128-133	16.2	83
79	Electronic transport spectroscopy of carbon nanotubes in a magnetic field. <i>Physical Review Letters</i> , 2005 , 94, 156802	7.4	81
78	Emergent phenomena and proximity effects in two-dimensional magnets and heterostructures. <i>Nature Materials</i> , 2020 , 19, 1276-1289	27	80
77	Evidence for topological defects in a photoinduced phase transition. <i>Nature Physics</i> , 2019 , 15, 27-31	16.2	77
76	Stacking-engineered ferroelectricity in bilayer boron nitride. <i>Science</i> , 2021 , 372,	33.3	76
75	Configurable phonon polaritons in twisted HfMoO. <i>Nature Materials</i> , 2020 , 19, 1307-1311	27	75

74	Coherent control of a hybrid superconducting circuit made with graphene-based van der Waals heterostructures. <i>Nature Nanotechnology</i> , 2019 , 14, 120-125	28.7	75
73	Electric field control of soliton motion and stacking in trilayer graphene. <i>Nature Materials</i> , 2014 , 13, 786-97	11.5	71
72	Observation of Exciton Redshift-Blueshift Crossover in Monolayer WS. <i>Nano Letters</i> , 2017 , 17, 4210-4216	11.5	68
71	Electronic Compressibility of Magic-Angle Graphene Superlattices. <i>Physical Review Letters</i> , 2019 , 123, 046601	7.4	68
70	Excited state spectroscopy in carbon nanotube double quantum dots. <i>Nano Letters</i> , 2006 , 6, 1350-5	11.5	66
69	Direct measurement of proximity-induced magnetism at the interface between a topological insulator and a ferromagnet. <i>Nature Communications</i> , 2016 , 7, 12014	17.4	65
68	Near-field photocurrent nanoscopy on bare and encapsulated graphene. <i>Nature Communications</i> , 2016 , 7, 10783	17.4	64
67	Light-induced charge density wave in LaTe3. <i>Nature Physics</i> , 2020 , 16, 159-163	16.2	64
66	High temperature ferromagnetism in π -conjugated two-dimensional metal-organic frameworks. <i>Chemical Science</i> , 2017 , 8, 2859-2867	9.4	61
65	Gigahertz Frequency Antiferromagnetic Resonance and Strong Magnon-Magnon Coupling in the Layered Crystal CrCl ₃ . <i>Physical Review Letters</i> , 2019 , 123, 047204	7.4	60
64	Observation of suppressed terahertz absorption in photoexcited graphene. <i>Applied Physics Letters</i> , 2013 , 102, 113111	3.4	59
63	Graphene-Based Thermopile for Thermal Imaging Applications. <i>Nano Letters</i> , 2015 , 15, 7211-6	11.5	57
62	Efficiency of Launching Highly Confined Polaritons by Infrared Light Incident on a Hyperbolic Material. <i>Nano Letters</i> , 2017 , 17, 5285-5290	11.5	57
61	Helical edge states and fractional quantum Hall effect in a graphene electron-hole bilayer. <i>Nature Nanotechnology</i> , 2017 , 12, 118-122	28.7	57
60	Unconventional ferroelectricity in moiré heterostructures. <i>Nature</i> , 2020 , 588, 71-76	50.4	56
59	Disorder imposed limits of mono- and bilayer graphene electronic modification using covalent chemistry. <i>Nano Letters</i> , 2013 , 13, 809-17	11.5	55
58	Competing channels for hot-electron cooling in graphene. <i>Physical Review Letters</i> , 2014 , 112, 247401	7.4	53
57	Hot-carrier photocurrent effects at graphene-metal interfaces. <i>Journal of Physics Condensed Matter</i> , 2015 , 27, 164207	1.8	52

56	Induced superconductivity in graphene. <i>Solid State Communications</i> , 2007 , 143, 72-76	1.6	51
55	Tunnelling spectroscopy of Andreev states in graphene. <i>Nature Physics</i> , 2017 , 13, 756-760	16.2	49
54	Nematicity and competing orders in superconducting magic-angle graphene. <i>Science</i> , 2021 , 372, 264-271	33.3	49
53	Enhanced superconductivity upon weakening of charge density wave transport in 2H-TaS ₂ in the two-dimensional limit. <i>Physical Review B</i> , 2018 , 98,	3.3	46
52	Manipulation and Steering of Hyperbolic Surface Polaritons in Hexagonal Boron Nitride. <i>Advanced Materials</i> , 2018 , 30, e1706358	24	45
51	Phonon Polaritons in Monolayers of Hexagonal Boron Nitride. <i>Advanced Materials</i> , 2019 , 31, e1806603	24	44
50	Quantum and classical confinement of resonant states in a trilayer graphene Fabry-Pérot interferometer. <i>Nature Communications</i> , 2012 , 3, 1239	17.4	44
49	Magnetoresistance and quantum oscillations of an electrostatically tuned semimetal-to-metal transition in ultrathin WTe ₂ . <i>Physical Review B</i> , 2017 , 95,	3.3	43
48	The marvels of moiré materials. <i>Nature Reviews Materials</i> , 2021 , 6, 201-206	73.3	41
47	Mach-Zehnder interferometry using spin- and valley-polarized quantum Hall edge states in graphene. <i>Science Advances</i> , 2017 , 3, e1700600	14.3	40
46	Flavour Hund's coupling, Chern gaps and charge diffusivity in moiré graphene. <i>Nature</i> , 2021 , 592, 43-48	50.4	39
45	Quantum dots in carbon nanotubes. <i>Semiconductor Science and Technology</i> , 2006 , 21, S52-S63	1.8	38
44	Photoresponse of an electrically tunable ambipolar graphene infrared thermocouple. <i>Nano Letters</i> , 2014 , 14, 901-7	11.5	37
43	Production of very neutron-deficient isotopes near 100Sn via reactions involving light-particle and cluster emission. <i>Nuclear Physics A</i> , 2000 , 669, 43-50	1.3	37
42	Entropic evidence for a Pomeranchuk effect in magic-angle graphene. <i>Nature</i> , 2021 , 592, 214-219	50.4	36
41	Giant intrinsic photoresponse in pristine graphene. <i>Nature Nanotechnology</i> , 2019 , 14, 145-150	28.7	36
40	Pauli-limit violation and re-entrant superconductivity in moiré graphene. <i>Nature</i> , 2021 , 595, 526-531	50.4	36
39	Spontaneous gyrotropic electronic order in a transition-metal dichalcogenide. <i>Nature</i> , 2020 , 578, 545-549	30.4	32

38	Electrostatic coupling between two surfaces of a topological insulator nanodevice. <i>Physical Review Letters</i> , 2014 , 113, 206801	7.4	32
37	Long-wavelength local density of states oscillations near graphene step edges. <i>Physical Review Letters</i> , 2012 , 108, 016801	7.4	32
36	Large Variations of the Raman Signal in the Spectra of Twisted Bilayer Graphene on a BN Substrate. <i>Journal of Physical Chemistry Letters</i> , 2012 , 3, 796-9	6.4	30
35	Coupling between electronic transport and longitudinal phonons in suspended nanotubes. <i>New Journal of Physics</i> , 2005 , 7, 243-243	2.9	28
34	Asymmetric hot-carrier thermalization and broadband photoresponse in graphene-2D semiconductor lateral heterojunctions. <i>Science Advances</i> , 2019 , 5, eaav1493	14.3	27
33	Dynamical Slowing-Down in an Ultrafast Photoinduced Phase Transition. <i>Physical Review Letters</i> , 2019 , 123, 097601	7.4	25
32	Topological crystalline insulator states in the Ca ₂ As family. <i>Physical Review B</i> , 2018 , 98,	3.3	24
31	Phase-Change Hyperbolic Heterostructures for Nanopolaritonics: A Case Study of hBN/VO. <i>Advanced Materials</i> , 2019 , 31, e1900251	24	22
30	Deep-Learning-Enabled Fast Optical Identification and Characterization of 2D Materials. <i>Advanced Materials</i> , 2020 , 32, e2000953	24	21
29	Internal Nanostructure Diagnosis with Hyperbolic Phonon Polaritons in Hexagonal Boron Nitride. <i>Nano Letters</i> , 2018 , 18, 5205-5210	11.5	21
28	Landau Level Splittings, Phase Transitions, and Nonuniform Charge Distribution in Trilayer Graphene. <i>Physical Review Letters</i> , 2016 , 117, 066601	7.4	21
27	Fizeau drag in graphene plasmonics. <i>Nature</i> , 2021 , 594, 513-516	50.4	20
26	Band structure mapping of bilayer graphene via quasiparticle scattering. <i>APL Materials</i> , 2014 , 2, 092503	5.7	18
25	Observation of Electron Coherence and Fabry-Perot Standing Waves at a Graphene Edge. <i>Nano Letters</i> , 2017 , 17, 7380-7386	11.5	17
24	Highly tunable junctions and non-local Josephson effect in magic-angle graphene tunnelling devices. <i>Nature Nanotechnology</i> , 2021 , 16, 769-775	28.7	16
23	TOPOLOGICAL MATTER. Observation of chiral currents at the magnetic domain boundary of a topological insulator. <i>Science</i> , 2015 , 349, 948-52	33.3	13
22	Tunneling in graphene-topological insulator hybrid devices. <i>Physical Review B</i> , 2015 , 92,	3.3	13
21	Interfacial ferroelectricity in rhombohedral-stacked bilayer transition metal dichalcogenides.. <i>Nature Nanotechnology</i> , 2022 ,	28.7	13

20	Manifestations of phase-coherent transport in graphene. <i>European Physical Journal: Special Topics</i> , 2007 , 148, 27-37	2.3	11
19	Fractional Chern insulators in magic-angle twisted bilayer graphene.. <i>Nature</i> , 2021 , 600, 439-443	50.4	11
18	Large Photothermal Effect in Sub-40 nm h-BN Nanostructures Patterned Via High-Resolution Ion Beam. <i>Small</i> , 2018 , 14, e1800072	11	10
17	Applied physics. Pulling apart molecular magnetism. <i>Science</i> , 2010 , 328, 1362-3	33.3	9
16	Unconventional sequence of correlated Chern insulators in magic-angle twisted bilayer graphene. <i>Nature Physics</i> ,	16.2	9
15	Observation of Terahertz-Induced Magnetooscillations in Graphene. <i>Nano Letters</i> , 2020 , 20, 5943-5950	11.5	8
14	Observation of interband collective excitations in twisted bilayer graphene. <i>Nature Physics</i> ,	16.2	7
13	Tunneling spectroscopy of graphene nanodevices coupled to large-gap superconductors. <i>Physical Review B</i> , 2018 , 98,	3.3	6
12	Hyperbolic phonon polaritons with positive and negative phase velocities in suspended h-MoO_3 . <i>Applied Physics Letters</i> , 2022 , 120, 113101	3.4	5
11	Hexagonal boron nitride as a low-loss dielectric for superconducting quantum circuits and qubits.. <i>Nature Materials</i> , 2022 ,	27	4
10	Role of Equilibrium Fluctuations in Light-Induced Order. <i>Physical Review Letters</i> , 2021 , 127, 227401	7.4	4
9	A versatile sample fabrication method for ultrafast electron diffraction. <i>Ultramicroscopy</i> , 2021 , 230, 113389	3.89	4
8	Compact mid-infrared graphene thermopile enabled by a nanopatterning technique of electrolyte gates. <i>New Journal of Physics</i> , 2018 , 20, 083050	2.9	3
7	Cascade of isospin phase transitions in Bernal-stacked bilayer graphene at zero magnetic field. <i>Nature Physics</i> ,	16.2	2
6	Unconventional Hysteretic Transition in a Charge Density Wave.. <i>Physical Review Letters</i> , 2022 , 128, 036401	4.01	1
5	Active and Passive Tuning of ultra-narrow Resonances in Polaritonic Nanoantennas.. <i>Advanced Materials</i> , 2021 , e2104954	24	1
4	Photothermal Effect: Large Photothermal Effect in Sub-40 nm h-BN Nanostructures Patterned Via High-Resolution Ion Beam (Small 22/2018). <i>Small</i> , 2018 , 14, 1870101	11	1
3	Strong Interminivalley Scattering in Twisted Bilayer Graphene Revealed by High-Temperature Magneto-Oscillations. <i>Physical Review Letters</i> , 2021 , 127, 056802	7.4	1

- 2 Reply to: Dirac-point photocurrents due to photothermoelectric effect in non-uniform graphene devices. *Nature Nanotechnology*, **2020**, 15, 244-246 28.7 0
- 1 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 0.3