Irina Grigorieva

List of Publications by Year
in descending order

67 papers	100,617 citations	53660 45 h-index	95083 68 g-index
69 all docs	69 docs citations	69 times ranked	69464 citing authors

#	Article	IF	Citations
1	Electric Field Effect in Atomically Thin Carbon Films. Science, 2004, 306, 666-669.	6.0	56,177
2	Two-dimensional gas of massless Dirac fermions in graphene. Nature, 2005, 438, 197-200.	13.7	18,948
3	Van der Waals heterostructures. Nature, 2013, 499, 419-425.	13.7	8,378
4	Unimpeded Permeation of Water Through Helium-Leakâ€“Tight Graphene-Based Membranes. Science, 2012, 335, 442-444.	6.0	2,552
5	Precise and Ultrafast Molecular Sieving Through Graphene Oxide Membranes. Science, 2014, 343, 752-754.	6.0	2,060
6	Tunable sieving of ions using graphene oxide membranes. Nature Nanotechnology, 2017, 12, 546-550.	15.6	1,364
7	Cloning of Dirac fermions in graphene superlattices. Nature, 2013, 497, 594-597.	13.7	1,107
8	High electron mobility, quantum Hall effect and anomalous optical response in atomically thin InSe. Nature Nanotechnology, 2017, 12, 223-227.	15.6	996
9	Spin-half paramagnetism in graphene induced by point defects. Nature Physics, 2012, 8, 199-202.	6.5	743
10	Dirac cones reshaped by interaction effects in suspended graphene. Nature Physics, 2011, 7, 701-704.	6.5	703
11	Detecting topological currents in graphene superlattices. Science, 2014, 346, 448-451.	6.0	619
12	Square ice in graphene nanocapillaries. Nature, 2015, 519, 443-445.	13.7	602
13	Negative local resistance caused by viscous electron backflow in graphene. Science, 2016, 351, 1055-1058.	6.0	516
14	Tunable metalâ€“insulator transition in double-layer graphene heterostructures. Nature Physics, 2011, 7, 958-961.	6.5	486
15	Molecular transport through capillaries made with atomic-scale precision. Nature, 2016, 538, 222-225.	13.7	483
16	Quality Heterostructures from Two-Dimensional Crystals Unstable in Air by Their Assembly in Inert Atmosphere. Nano Letters, 2015, 15, 4914-4921.	4.5	358
17	Superballistic flow of viscous electron fluid through graphene constrictions. Nature Physics, 2017, 13, 1182-1185.	6.5	288
18	Universal shape and pressure inside bubbles appearing in van der Waals heterostructures. Nature Communications, 2016, 7, 12587.	5.8	260

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19	Sieving hydrogen isotopes through two-dimensional crystals. Science, 2016, 351, 68-70.	6.0	247
20	Graphene spintronics: the European Flagship perspective. 2D Materials, 2015, 2, 030202.	2.0	243
21	Dual origin of defect magnetism in graphene and its reversible switching by molecular doping. Nature Communications, 2013, 4, 2010.	5.8	230
22	Limits on gas impermeability of graphene. Nature, 2020, 579, 229-232.	13.7	220
23	Commensurability Effects in Viscosity of Nanoconfined Water. ACS Nano, 2016, 10, 3685-3692.	7.3	198
24	Resonant terahertz detection using graphene plasmons. Nature Communications, 2018, 9, 5392.	5.8	198
25	Measuring Hall viscosity of grapheneâ€™s electron fluid. Science, 2019, 364, 162-165.	6.0	197
26	Capillary condensation under atomic-scale confinement. Nature, 2020, 588, 250-253.	13.7	168
27	Hierarchy of Hofstadter states and replica quantum Hall ferromagnetism in graphene superlattices. Nature Physics, 2014, 10, 525-529.	6.5	161
28	Ballistic molecular transport through two-dimensional channels. Nature, 2018, 558, 420-424.	13.7	139
29	Fluidity onset in graphene. Nature Communications, 2018, 9, 4533.	5.8	136
30	Superconductivity in Potassium-Doped Metallic Polymorphs of MoS₂. Nano Letters, 2016, 16, 629-636.	4.5	129
31	Scalable and efficient separation of hydrogen isotopes using graphene-based electrochemical pumping. Nature Communications, 2017, 8, 15215.	5.8	119
32	Direct Observation of Vortex Shells and Magic Numbers in Mesoscopic Superconducting Disks. Physical Review Letters, 2006, 96, 077005.	2.9	117
33	High-temperature quantum oscillations caused by recurring Bloch states in graphene superlattices. Science, 2017, 357, 181-184.	6.0	117
34	Strained Bubbles in van der Waals Heterostructures as Local Emitters of Photoluminescence with Adjustable Wavelength. ACS Photonics, 2019, 6, 516-524.	3.2	110
35	Superconductivity in Ca-doped graphene laminates. Scientific Reports, 2016, 6, 23254.	1.6	109
36	Micromagnetometry of two-dimensional ferromagnets. Nature Electronics, 2019, 2, 457-463.	13.1	93

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37	Intercalant-independent transition temperature in superconducting black phosphorus. Nature Communications, 2017, 8, 15036.	5.8	82
38	Pinning-Induced Formation of Vortex Clusters and Giant Vortices in Mesoscopic Superconducting Disks. Physical Review Letters, 2007, 99, 147003.	2.9	81
39	Submicron sensors of local electric field with single-electron resolution at room temperature. Applied Physics Letters, 2006, 88, 013901.	1.5	75
40	Magnetoresistance of vertical Co-graphene-NiFe junctions controlled by charge transfer and proximity-induced spin splitting in graphene. 2D Materials, 2017, 4, 031004.	2.0	73
41	Unusual Suppression of the Superconducting Energy Gap and Critical Temperature in Atomically Thin NbSe₂. Nano Letters, 2018, 18, 2623-2629.	4.5	70
42	Giant oscillations in a triangular network of one-dimensional states in marginally twisted graphene. Nature Communications, 2019, 10, 4008.	5.8	67
43	Atomic Defects and Doping of Monolayer NbSe₂. ACS Nano, 2017, 11, 2894-2904.	7.3	63
44	Dual origin of room temperature sub-terahertz photoresponse in graphene field effect transistors. Applied Physics Letters, 2018, 112, .	1.5	60
45	Magnetic flux decoration of type-II superconductors. Superconductor Science and Technology, 1994, 7, 161-176.	1.8	46
46	Control of electron-electron interaction in graphene by proximity screening. Nature Communications, 2020, 11, 2339.	5.8	46
47	Quantum Rescaling, Domain Metastability, and Hybrid Domainâ€Walls in 2D CrI₃ Magnets. Advanced Materials, 2021, 33, e2004138.	11.1	34
48	Out-of-equilibrium criticalities in graphene superlattices. Science, 2022, 375, 430-433.	6.0	34
49	Pillars as antipinning centers in superconducting films. Physical Review B, 2008, 77, .	1.1	33
50	Spontaneous magnetization changes and nonlocal effects in mesoscopic ferromagnet-superconductor structures. Physical Review B, 2002, 65, .	1.1	32
51	Long-Range Nonlocal Flow of Vortices in Narrow Superconducting Channels. Physical Review Letters, 2004, 92, 237001.	2.9	30
52	Exponentially selective molecular sieving through angstrom pores. Nature Communications, 2021, 12, 7170.	5.8	29
53	Giant magneto-birefringence effect and tuneable colouration of 2D crystal suspensions. Nature Communications, 2020, 11, 3725.	5.8	28
54	Long-range ballistic transport of Brown-Zak fermions in graphene superlattices. Nature Communications, 2020, 11, 5756.	5.8	25

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55	Enhanced Superconductivity in Few-Layer TaS₂ due to Healing by Oxygenation. Nano Letters, 2020, 20, 3808-3818.	4.5	23
56	Minibands in twisted bilayer graphene probed by magnetic focusing. Science Advances, 2020, 6, eaay7838.	4.7	21
57	Bitter decoration of vortex patterns in superconducting Nb films with random, triangular, and Penrose arrays of antidots. Physical Review B, 2011, 84, .	1.1	16
58	Magnetoresistance in Co-hBN-NiFe Tunnel Junctions Enhanced by Resonant Tunneling through Single Defects in Ultrathin hBN Barriers. Nano Letters, 2018, 18, 6954-6960.	4.5	15
59	Tunable spin-orbit coupling in two-dimensional InSe. Physical Review B, 2021, 104, .	1.1	9
60	Strongly Absorbing Nanoscale Infrared Domains within Strained Bubbles at hBNâ€“Graphene Interfaces. ACS Applied Materials & Interfaces, 2020, 12, 57638-57648.	4.0	7
61	Tunable Spin Injection in High-Quality Graphene with One-Dimensional Contacts. Nano Letters, 2022, 22, 935-941.	4.5	7
62	Reply to: Random interstratification in hydrated graphene oxide membranes and implications for seawater desalination. Nature Nanotechnology, 2022, 17, 134-135.	15.6	5
63	Intrinsic Pinning of a Ferromagnetic Domain Wall in Yttrium Iron Garnet Films with Strong Uniaxial Anisotropy. Journal of Low Temperature Physics, 2005, 139, 65-72.	0.6	4
64	Magnetization Signature of Topological Surface States in a Nonâ€Symmorphic Superconductor. Advanced Materials, 2021, 33, e2103257.	11.1	3
65	Intrinsic pinning of a ferromagnetic domain wall in yttrium iron garnet films with strong uniaxial anisotropy. Journal of Low Temperature Physics, 2005, 139, 65-72.	0.6	2
66	Enhanced Spin Injection in Molecularly Functionalized Graphene via Ultrathin Oxide Barriers. Physical Review Applied, 2021, 15, .	1.5	2
67	Nanomagnets: Quantum Rescaling, Domain Metastability, and Hybrid Domainâ€Walls in 2D CrI₃ Magnets (Adv. Mater. 5/2021). Advanced Materials, 2021, 33, 2170036.	11.1	0