R V Gorbachev

List of Publications by Year
in descending order

95 papers	24,502 citations	36203 51 h-index	35952 97 g-index
103 all docs	103 docs citations	103 times ranked	22942 citing authors

#	ARTICLE	IF	CITATIONS
1	Field-Effect Tunneling Transistor Based on Vertical Graphene Heterostructures. Science, 2012, 335, 947-950.	6.0	2,268
2	Strong Light-Matter Interactions in Heterostructures of Atomically Thin Films. Science, 2013, 340, 1311-1314.	6.0	2,179
3	Vertical field-effect transistor based on grapheneâ€“WS2 heterostructures for flexible and transparent electronics. Nature Nanotechnology, 2013, 8, 100-103.	15.6	1,543
4	Micrometer-Scale Ballistic Transport in Encapsulated Graphene at Room Temperature. Nano Letters, 2011, 11, 2396-2399.	4.5	1,440
5	Cloning of Dirac fermions in graphene superlattices. Nature, 2013, 497, 594-597.	13.7	1,107
6	High electron mobility, quantum Hall effect and anomalous optical response in atomically thin InSe. Nature Nanotechnology, 2017, 12, 223-227.	15.6	996
7	Hunting for Monolayer Boron Nitride: Optical and Raman Signatures. Small, 2011, 7, 465-468.	5.2	950
8	Cross-sectional imaging of individual layers and buried interfaces of graphene-based heterostructures and superlattices. Nature Materials, 2012, 11, 764-767.	13.3	796
9	Strong plasmonic enhancement of photovoltage in graphene. Nature Communications, 2011, 2, 458.	5.8	775
10	Commensurateâ€“incommensurate transition in graphene on hexagonal boron nitride. Nature Physics, 2014, 10, 451-456.	6.5	737
11	Electron Tunneling through Ultrathin Boron Nitride Crystalline Barriers. Nano Letters, 2012, 12, 1707-1710.	4.5	724
12	Dirac cones reshaped by interaction effects in suspended graphene. Nature Physics, 2011, 7, 701-704.	6.5	703
13	Resonantly hybridized excitons in moirÃ© superlattices in van der Waals heterostructures. Nature, 2019, 567, 81-86.	13.7	621
14	Detecting topological currents in graphene superlattices. Science, 2014, 346, 448-451.	6.0	619
15	Resonant tunnelling and negative differential conductance in graphene transistors. Nature Communications, 2013, 4, 1794.	5.8	542
16	Tunable metalâ€“insulator transition in double-layer graphene heterostructures. Nature Physics, 2011, 7, 958-961.	6.5	486
17	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
18	Twist-controlled resonant tunnelling in graphene/boron nitride/graphene heterostructures. Nature Nanotechnology, 2014, 9, 808-813.	15.6	435

#	ARTICLE	IF	CITATIONS
19	Weak Localization in Graphene Flakes. Physical Review Letters, 2008, 100, 056802.	2.9	433
20	Electronic Properties of Graphene Encapsulated with Different Two-Dimensional Atomic Crystals. Nano Letters, 2014, 14, 3270-3276.	4.5	433
21	Singular phase nano-optics in plasmonic metamaterials for label-free single-molecule detection. Nature Materials, 2013, 12, 304-309.	13.3	382
22	Strong Coulomb drag and broken symmetry in double-layer graphene. Nature Physics, 2012, 8, 896-901.	6.5	365
23	Quality Heterostructures from Two-Dimensional Crystals Unstable in Air by Their Assembly in Inert Atmosphere. Nano Letters, 2015, 15, 4914-4921.	4.5	358
24	Transition between Electron Localization and Antilocalization in Graphene. Physical Review Letters, 2009, 103, 226801.	2.9	350
25	Limits on Charge Carrier Mobility in Suspended Graphene due to Flexural Phonons. Physical Review Letters, 2010, 105, 266601.	2.9	347
26	Interaction-Driven Spectrum Reconstruction in Bilayer Graphene. Science, 2011, 333, 860-863.	6.0	262
27	Giant Nonlocality Near the Dirac Point in Graphene. Science, 2011, 332, 328-330.	6.0	255
28	Atomic reconstruction in twisted bilayers of transition metal dichalcogenides. Nature Nanotechnology, 2020, 15, 592-597.	15.6	245
29	Weak Localization in Bilayer Graphene. Physical Review Letters, 2007, 98, 176805.	2.9	205
30	Density of States and Zero Landau Level Probed through Capacitance of Graphene. Physical Review Letters, 2010, 105, 136801.	2.9	202
31	Graphene bubbles with controllable curvature. Applied Physics Letters, 2011, 99, .	1.5	176
32	Conductance of p-n-p Graphene Structures with â€œAir-Bridgeâ€• Top Gates. Nano Letters, 2008, 8, 1995-1999.	4.5	168
33	Hierarchy of Hofstadter states and replica quantum Hall ferromagnetism in graphene superlattices. Nature Physics, 2014, 10, 525-529.	6.5	161
34	How Close Can One Approach the Dirac Point in Graphene Experimentally?. Nano Letters, 2012, 12, 4629-4634.	4.5	159
35	Photothermoelectric and Photoelectric Contributions to Light Detection in Metalâ€"Grapheneâ€"Metal Photodetectors. Nano Letters, 2014, 14, 3733-3742.	4.5	153
36	Interfacial ferroelectricity in marginally twisted 2D semiconductors. Nature Nanotechnology, 2022, 17, 390-395.	15.6	115

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37	Tuning the Pseudospin Polarization of Graphene by a Pseudomagnetic Field. Nano Letters, 2017, 17, 2240-2245.	4.5	113
38	Design of van der Waals interfaces for broad-spectrum optoelectronics. Nature Materials, 2020, 19, 299-304.	13.3	106
39	Raman Fingerprint of Aligned Graphene/h-BN Superlattices. Nano Letters, 2013, 13, 5242-5246.	4.5	102
40	Nanometer Resolution Elemental Mapping in Graphene-Based TEM Liquid Cells. Nano Letters, 2018, 18, 1168-1174.	4.5	99
41	Evaluating arbitrary strain configurations and doping in graphene with Raman spectroscopy. 2D Materials, 2018, 5, 015016.	2.0	95
42	Electrostatically Confined Monolayer Graphene Quantum Dots with Orbital and Valley Splittings. Nano Letters, 2016, 16, 5798-5805.	4.5	93
43	Micromagnetometry of two-dimensional ferromagnets. Nature Electronics, 2019, 2, 457-463.	13.1	93
44	High Quality Factor Graphene-Based Two-Dimensional Heterostructure Mechanical Resonator. Nano Letters, 2017, 17, 5950-5955.	4.5	75
45	Composite super-moirÃ© lattices in double-aligned graphene heterostructures. Science Advances, 2019, 5, eaay8897.	4.7	74
46	Unusual Suppression of the Superconducting Energy Gap and Critical Temperature in Atomically Thin NbSe₂. Nano Letters, 2018, 18, 2623-2629.	4.5	70
47	Giant Magnetodrag in Graphene at Charge Neutrality. Physical Review Letters, 2013, 111, 166601.	2.9	69
48	Stacking Boundaries and Transport in Bilayer Graphene. Nano Letters, 2014, 14, 2052-2057.	4.5	66
49	Atomic Defects and Doping of Monolayer NbSe₂. ACS Nano, 2017, 11, 2894-2904.	7.3	63
50	Indirect to Direct Gap Crossover in Two-Dimensional InSe Revealed by Angle-Resolved Photoemission Spectroscopy. ACS Nano, 2019, 13, 2136-2142.	7.3	63
51	Large tunable valley splitting in edge-free graphene quantum dots on boron nitride. Nature Nanotechnology, 2018, 13, 392-397.	15.6	58
52	Observing Imperfection in Atomic Interfaces for van der Waals Heterostructures. Nano Letters, 2017, 17, 5222-5228.	4.5	53
53	Giant Spin-Hall Effect Induced by the Zeeman Interaction in Graphene. Physical Review Letters, 2011, 107, 096601.	2.9	52
54	Infrared-to-violet tunable optical activity in atomic films of GaSe, InSe, and their heterostructures. 2D Materials, 2018, 5, 041009.	2.0	52

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55	Weak localization in monolayer and bilayer graphene. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2008, 366, 245-250.	1.6	51
56	Dual-Scattering Near-Field Microscope for Correlative Nanoimaging of SERS and Electromagnetic Hotspots. Nano Letters, 2017, 17, 2667-2673.	4.5	49
57	Anomalous twin boundaries in two dimensional materials. Nature Communications, 2018, 9, 3597.	5.8	46
58	Control of electron-electron interaction in graphene by proximity screening. Nature Communications, 2020, 11, 2339.	5.8	46
59	Scalable Patterning of Encapsulated Black Phosphorus. Nano Letters, 2018, 18, 5373-5381.	4.5	43
60	Raman spectroscopy of GaSe and InSe post-transition metal chalcogenides layers. Faraday Discussions, 2021, 227, 163-170.	1.6	43
61	Nonlocal Response and Anamorphosis: The Case of Few-Layer Black Phosphorus. Nano Letters, 2015, 15, 6991-6995.	4.5	42
62	Gate-Defined Quantum Confinement in InSe-Based van der Waals Heterostructures. Nano Letters, 2018, 18, 3950-3955.	4.5	40
63	Ion exchange in atomically thin clays and micas. Nature Materials, 2021, 20, 1677-1682.	13.3	40
64	Gate-Defined One-Dimensional Channel and Broken Symmetry States in MoS₂ van der Waals Heterostructures. Nano Letters, 2017, 17, 5008-5011.	4.5	39
65	Quantum Transport Thermometry for Electrons in Graphene. Physical Review Letters, 2009, 102, 066801.	2.9	38
66	Field-effect control of tunneling barrier height by exploiting graphene's low density of states. Journal of Applied Physics, 2013, 113, .	1.1	35
67	Formation and Healing of Defects in Atomically Thin GaSe and InSe. ACS Nano, 2019, 13, 5112-5123.	7.3	35
68	CVDgraphenevs. highly ordered pyrolytic graphite for use in electroanalytical sensing. Analyst, The, 2012, 137, 833-839.	1.7	33
69	Ultra-thin van der Waals crystals as semiconductor quantum wells. Nature Communications, 2020, 11, 125.	5.8	33
70	Non-destructive electron microscopy imaging and analysis of biological samples with graphene coating. 2D Materials, 2016, 3, 045004.	2.0	32
71	Niobium diselenide superconducting photodetectors. Applied Physics Letters, 2019, 114, .	1.5	28
72	Total Ionizing Dose Effects on hBN Encapsulated Graphene Devices. IEEE Transactions on Nuclear Science, 2014, 61, 2868-2873.	1.2	27

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73	Long-range ballistic transport of Brown-Zak fermions in graphene superlattices. Nature Communications, 2020, 11, 5756.	5.8	25
74	Optical second harmonic generation in encapsulated single-layer InSe. AIP Advances, 2018, 8, .	0.6	24
75	Coexistence of electron and hole transport in graphene. Physical Review B, 2011, 84, .	1.1	23
76	Enhanced Superconductivity in Few-Layer TaS₂ due to Healing by Oxygenation. Nano Letters, 2020, 20, 3808-3818.	4.5	23
77	In Situ TEM Imaging of Solutionâ€Phase Chemical Reactions Using 2Dâ€Heterostructure Mixing Cells. Advanced Materials, 2021, 33, e2100668.	11.1	18
78	Quantum Hall activation gaps in bilayer graphene. Solid State Communications, 2010, 150, 2209-2211.	0.9	13
79	Atomic Resolution Imaging of CrBr3 Using Adhesion-Enhanced Grids. Nano Letters, 2020, 20, 6582-6589.	4.5	13
80	Graphene as a local probe to investigate near-field properties of plasmonic nanostructures. Physical Review B, 2018, 97, .	1.1	12
81	Magnetotransport in single-layer graphene in a large parallel magnetic field. Physical Review B, 2016, 94, .	1.1	11
82	Ghost anti-crossings caused by interlayer umklapp hybridization of bands in 2D heterostructures. 2D Materials, 2021, 8, 015016.	2.0	8
83	Selective spectroscopy of tunneling transitions between the Landau levels in vertical double-gate grapheneâ€“boron nitrideâ€“graphene heterostructures. JETP Letters, 2016, 104, 334-340.	0.4	7
84	Magnetotransport and lateral confinement in an InSe van der Waals Heterostructure. 2D Materials, 2018, 5, 035040.	2.0	7
85	Quantized coexisting electrons and holes in graphene measured using temperature-dependent magnetotransport. Physical Review B, 2013, 87, .	1.1	6
86	Nanometre imaging of Fe₃GeTe₂ ferromagnetic domain walls. Nanotechnology, 2021, 32, 205703.	1.3	6
87	MoirÃ© Superlattice Effects and Band Structure Evolution in Near-30-Degree Twisted Bilayer Graphene. ACS Nano, 2022, 16, 1954-1962.	7.3	6
88	Observation of Spin and Valley Splitting of Landau Levels under Magnetic Tunneling in Graphene/Boron Nitride/Graphene Structures. JETP Letters, 2018, 107, 238-242.	0.4	4
89	Chlorosulfuric acid-assisted production of functional 2D materials. Npj 2D Materials and Applications, 2021, 5, .	3.9	3
90	Liquid-Phase STEM-EDS in Graphene and Silicon Nitride Cells. Microscopy and Microanalysis, 2019, 25, 1500-1501.	0.2	2

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91	Field-induced insulating states in a graphene superlattice. Physical Review B, 2019, 99, .	1.1	2
92	Magic under the microscope. Nature Materials, 2021, 20, 908-909.	13.3	1
93	Understanding 2D Crystal Vertical Heterostructures at the Atomic Scale Using Advanced Scanning Transmission Electron Microscopy. Microscopy and Microanalysis, 2017, 23, 1714-1715.	0.2	0
94	Twist and Bend in Van Der Waals Materials and 2D Stacked Heterostructures. Microscopy and Microanalysis, 2020, 26, 856-858.	0.2	0
95	Harnessing the Electron Beam to Study Reactions in Graphene Liquid Cells and Degradation in Sensitive 2D Materials. Microscopy and Microanalysis, 2020, 26, 538-541.	0.2	0