

R V Gorbachev

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.

94
papers

19,643
citations

46
h-index

103
g-index

103
ext. papers

22,346
ext. citations

14
avg, IF

6.27
L-index

#	Paper	IF	Citations
94	Ghost anti-crossings caused by interlayer umklapp hybridization of bands in 2D heterostructures. <i>2D Materials</i> , 2021 , 8, 015016	5.9	2
93	In Situ TEM Imaging of Solution-Phase Chemical Reactions Using 2D-Heterostructure Mixing Cells. <i>Advanced Materials</i> , 2021 , 33, e2100668	24	1
92	Magic under the microscope. <i>Nature Materials</i> , 2021 , 20, 908-909	27	
91	Raman spectroscopy of GaSe and InSe post-transition metal chalcogenides layers. <i>Faraday Discussions</i> , 2021 , 227, 163-170	3.6	11
90	Nanometre imaging of FeGeTe ferromagnetic domain walls. <i>Nanotechnology</i> , 2021 , 32, 205703	3.4	0
89	Ion exchange in atomically thin clays and micas. <i>Nature Materials</i> , 2021 , 20, 1677-1682	27	7
88	Harnessing the Electron Beam to Study Reactions in Graphene Liquid Cells and Degradation in Sensitive 2D Materials. <i>Microscopy and Microanalysis</i> , 2020 , 26, 538-541	0.5	
87	Control of electron-electron interaction in graphene by proximity screenings. <i>Nature Communications</i> , 2020 , 11, 2339	17.4	17
86	Ultra-thin van der Waals crystals as semiconductor quantum wells. <i>Nature Communications</i> , 2020 , 11, 125	17.4	22
85	Design of van der Waals interfaces for broad-spectrum optoelectronics. <i>Nature Materials</i> , 2020 , 19, 299-304	17.4	64
84	Atomic reconstruction in twisted bilayers of transition metal dichalcogenides. <i>Nature Nanotechnology</i> , 2020 , 15, 592-597	28.7	110
83	Long-range ballistic transport of Brown-Zak fermions in graphene superlattices. <i>Nature Communications</i> , 2020 , 11, 5756	17.4	10
82	Twist and Bend in Van Der Waals Materials and 2D Stacked Heterostructures. <i>Microscopy and Microanalysis</i> , 2020 , 26, 856-858	0.5	
81	Atomic Resolution Imaging of CrBr Using Adhesion-Enhanced Grids. <i>Nano Letters</i> , 2020 , 20, 6582-6589	11.5	8
80	Enhanced Superconductivity in Few-Layer TaS due to Healing by Oxygenation. <i>Nano Letters</i> , 2020 , 20, 3808-3818	11.5	10
79	Field-induced insulating states in a graphene superlattice. <i>Physical Review B</i> , 2019 , 99,	3.3	2
78	Indirect to Direct Gap Crossover in Two-Dimensional InSe Revealed by Angle-Resolved Photoemission Spectroscopy. <i>ACS Nano</i> , 2019 , 13, 2136-2142	16.7	40

77	Resonantly hybridized excitons in moiré superlattices in van der Waals heterostructures. <i>Nature</i> , 2019 , 567, 81-86	50.4	367
76	Formation and Healing of Defects in Atomically Thin GaSe and InSe. <i>ACS Nano</i> , 2019 , 13, 5112-5123	16.7	23
75	Liquid-Phase STEM-EDS in Graphene and Silicon Nitride Cells. <i>Microscopy and Microanalysis</i> , 2019 , 25, 1500-1501	0.5	0
74	Niobium diselenide superconducting photodetectors. <i>Applied Physics Letters</i> , 2019 , 114, 251103	3.4	13
73	Composite super-moiré lattices in double-aligned graphene heterostructures. <i>Science Advances</i> , 2019 , 5, eaay8897	14.3	36
72	Micromagnetometry of two-dimensional ferromagnets. <i>Nature Electronics</i> , 2019 , 2, 457-463	28.4	46
71	Graphene as a local probe to investigate near-field properties of plasmonic nanostructures. <i>Physical Review B</i> , 2018 , 97,	3.3	9
70	Nanometer Resolution Elemental Mapping in Graphene-Based TEM Liquid Cells. <i>Nano Letters</i> , 2018 , 18, 1168-1174	11.5	67
69	Observation of Spin and Valley Splitting of Landau Levels under Magnetic Tunneling in Graphene/Boron Nitride/Graphene Structures. <i>JETP Letters</i> , 2018 , 107, 238-242	1.2	1
68	Large tunable valley splitting in edge-free graphene quantum dots on boron nitride. <i>Nature Nanotechnology</i> , 2018 , 13, 392-397	28.7	40
67	Unusual Suppression of the Superconducting Energy Gap and Critical Temperature in Atomically Thin NbSe. <i>Nano Letters</i> , 2018 , 18, 2623-2629	11.5	39
66	Evaluating arbitrary strain configurations and doping in graphene with Raman spectroscopy. <i>2D Materials</i> , 2018 , 5, 015016	5.9	71
65	Scalable Patterning of Encapsulated Black Phosphorus. <i>Nano Letters</i> , 2018 , 18, 5373-5381	11.5	30
64	Magnetotransport and lateral confinement in an InSe van der Waals Heterostructure. <i>2D Materials</i> , 2018 , 5, 035040	5.9	6
63	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
62	Optical second harmonic generation in encapsulated single-layer InSe. <i>AIP Advances</i> , 2018 , 8, 105120	1.5	15
61	Anomalous twin boundaries in two dimensional materials. <i>Nature Communications</i> , 2018 , 9, 3597	17.4	30
60	Infrared-to-violet tunable optical activity in atomic films of GaSe, InSe, and their heterostructures. <i>2D Materials</i> , 2018 , 5, 041009	5.9	39

59	Gate-Defined Quantum Confinement in InSe-Based van der Waals Heterostructures. <i>Nano Letters</i> , 2018 , 18, 3950-3955	11.5	33
58	Atomic Defects and Doping of Monolayer NbSe. <i>ACS Nano</i> , 2017 , 11, 2894-2904	16.7	46
57	Tuning the Pseudospin Polarization of Graphene by a Pseudomagnetic Field. <i>Nano Letters</i> , 2017 , 17, 2240-2245	11.5	38
56	Dual-Scattering Near-Field Microscope for Correlative Nanoimaging of SERS and Electromagnetic Hotspots. <i>Nano Letters</i> , 2017 , 17, 2667-2673	11.5	38
55	Understanding 2D Crystal Vertical Heterostructures at the Atomic Scale Using Advanced Scanning Transmission Electron Microscopy. <i>Microscopy and Microanalysis</i> , 2017 , 23, 1714-1715	0.5	
54	High Quality Factor Graphene-Based Two-Dimensional Heterostructure Mechanical Resonator. <i>Nano Letters</i> , 2017 , 17, 5950-5955	11.5	49
53	Gate-Defined One-Dimensional Channel and Broken Symmetry States in MoS van der Waals Heterostructures. <i>Nano Letters</i> , 2017 , 17, 5008-5011	11.5	33
52	High electron mobility, quantum Hall effect and anomalous optical response in atomically thin InSe. <i>Nature Nanotechnology</i> , 2017 , 12, 223-227	28.7	723
51	Observing Imperfection in Atomic Interfaces for van der Waals Heterostructures. <i>Nano Letters</i> , 2017 , 17, 5222-5228	11.5	39
50	Selective spectroscopy of tunneling transitions between the Landau levels in vertical double-gate graphene/boron nitride/graphene heterostructures. <i>JETP Letters</i> , 2016 , 104, 334-340	1.2	5
49	High resolution STEM imaging and analysis of 2D crystal heterostructure devices and nanoparticle catalysts 2016 , 773-774		
48	Non-destructive electron microscopy imaging and analysis of biological samples with graphene coating. <i>2D Materials</i> , 2016 , 3, 045004	5.9	23
47	Magnetotransport in single-layer graphene in a large parallel magnetic field. <i>Physical Review B</i> , 2016 , 94,	3.3	6
46	Electrostatically Confined Monolayer Graphene Quantum Dots with Orbital and Valley Splittings. <i>Nano Letters</i> , 2016 , 16, 5798-805	11.5	72
45	Quality Heterostructures from Two-Dimensional Crystals Unstable in Air by Their Assembly in Inert Atmosphere. <i>Nano Letters</i> , 2015 , 15, 4914-21	11.5	289
44	Nonlocal Response and Anamorphosis: The Case of Few-Layer Black Phosphorus. <i>Nano Letters</i> , 2015 , 15, 6991-5	11.5	36
43	Commensurate/incommensurate transition in graphene on hexagonal boron nitride. <i>Nature Physics</i> , 2014 , 10, 451-456	16.2	582
42	Electronic properties of graphene encapsulated with different two-dimensional atomic crystals. <i>Nano Letters</i> , 2014 , 14, 3270-6	11.5	345

41	Twist-controlled resonant tunnelling in graphene/boron nitride/graphene heterostructures. <i>Nature Nanotechnology</i> , 2014 , 9, 808-13	28.7	341
40	Detecting topological currents in graphene superlattices. <i>Science</i> , 2014 , 346, 448-51	33.3	481
39	Stacking boundaries and transport in bilayer graphene. <i>Nano Letters</i> , 2014 , 14, 2052-7	11.5	55
38	Photothermoelectric and photoelectric contributions to light detection in metal-graphene-metal photodetectors. <i>Nano Letters</i> , 2014 , 14, 3733-42	11.5	124
37	Hierarchy of Hofstadter states and replica quantum Hall ferromagnetism in graphene superlattices. <i>Nature Physics</i> , 2014 , 10, 525-529	16.2	137
36	Total Ionizing Dose Effects on hBN Encapsulated Graphene Devices. <i>IEEE Transactions on Nuclear Science</i> , 2014 , 61, 2868-2873	1.7	24
35	Raman fingerprint of aligned graphene/h-BN superlattices. <i>Nano Letters</i> , 2013 , 13, 5242-6	11.5	83
34	Giant magnetodrag in graphene at charge neutrality. <i>Physical Review Letters</i> , 2013 , 111, 166601	7.4	53
33	Singular phase nano-optics in plasmonic metamaterials for label-free single-molecule detection. <i>Nature Materials</i> , 2013 , 12, 304-9	27	311
32	Vertical field-effect transistor based on graphene-WS ₂ heterostructures for flexible and transparent electronics. <i>Nature Nanotechnology</i> , 2013 , 8, 100-3	28.7	1342
31	Resonant tunnelling and negative differential conductance in graphene transistors. <i>Nature Communications</i> , 2013 , 4, 1794	17.4	451
30	Strong light-matter interactions in heterostructures of atomically thin films. <i>Science</i> , 2013 , 340, 1311-4	33.3	1850
29	Cloning of Dirac fermions in graphene superlattices. <i>Nature</i> , 2013 , 497, 594-7	50.4	884
28	Quantized coexisting electrons and holes in graphene measured using temperature-dependent magnetotransport. <i>Physical Review B</i> , 2013 , 87,	3.3	6
27	Field-effect control of tunneling barrier height by exploiting graphene's low density of states. <i>Journal of Applied Physics</i> , 2013 , 113, 136502	2.5	31
26	Cross-sectional imaging of individual layers and buried interfaces of graphene-based heterostructures and superlattices. <i>Nature Materials</i> , 2012 , 11, 764-7	27	664
25	How close can one approach the Dirac point in graphene experimentally?. <i>Nano Letters</i> , 2012 , 12, 4629-34	11.5	136
24	Strong Coulomb drag and broken symmetry in double-layer graphene. <i>Nature Physics</i> , 2012 , 8, 896-901	16.2	303

23	Field-effect tunneling transistor based on vertical graphene heterostructures. <i>Science</i> , 2012 , 335, 947-50	33.3	1991
22	CVD graphene vs. highly ordered pyrolytic graphite for use in electroanalytical sensing. <i>Analyst, The</i> , 2012 , 137, 833-9	5	32
21	Electron tunneling through ultrathin boron nitride crystalline barriers. <i>Nano Letters</i> , 2012 , 12, 1707-10	11.5	579
20	Dirac cones reshaped by interaction effects in suspended graphene. <i>Nature Physics</i> , 2011 , 7, 701-704	16.2	577
19	Micrometer-scale ballistic transport in encapsulated graphene at room temperature. <i>Nano Letters</i> , 2011 , 11, 2396-9	11.5	1203
18	Coexistence of electron and hole transport in graphene. <i>Physical Review B</i> , 2011 , 84,	3.3	21
17	Graphene bubbles with controllable curvature. <i>Applied Physics Letters</i> , 2011 , 99, 093103	3.4	143
16	Tunable metal-insulator transition in double-layer graphene heterostructures. <i>Nature Physics</i> , 2011 , 7, 958-961	16.2	417
15	Giant nonlocality near the Dirac point in graphene. <i>Science</i> , 2011 , 332, 328-30	33.3	217
14	Strong plasmonic enhancement of photovoltage in graphene. <i>Nature Communications</i> , 2011 , 2, 458	17.4	679
13	Giant spin-Hall effect induced by the Zeeman interaction in graphene. <i>Physical Review Letters</i> , 2011 , 107, 096601	7.4	47
12	Hunting for monolayer boron nitride: optical and Raman signatures. <i>Small</i> , 2011 , 7, 465-8	11	791
11	Interaction-driven spectrum reconstruction in bilayer graphene. <i>Science</i> , 2011 , 333, 860-3	33.3	226
10	Limits on charge carrier mobility in suspended graphene due to flexural phonons. <i>Physical Review Letters</i> , 2010 , 105, 266601	7.4	297
9	Density of states and zero Landau Level probed through capacitance of graphene. <i>Physical Review Letters</i> , 2010 , 105, 136801	7.4	172
8	Quantum Hall activation gaps in bilayer graphene. <i>Solid State Communications</i> , 2010 , 150, 2209-2211	1.6	10
7	Quantum transport thermometry for electrons in graphene. <i>Physical Review Letters</i> , 2009 , 102, 066801	7.4	36
6	Transition between electron localization and antilocalization in graphene. <i>Physical Review Letters</i> , 2009 , 103, 226801	7.4	296

5	Weak localization in graphene flakes. <i>Physical Review Letters</i> , 2008 , 100, 056802	7.4	377
4	Conductance of p-n-p graphene structures with "air-bridge" top gates. <i>Nano Letters</i> , 2008 , 8, 1995-9	11.5	155
3	Weak localization in monolayer and bilayer graphene. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2008 , 366, 245-50	3	36
2	Weak localization in bilayer graphene. <i>Physical Review Letters</i> , 2007 , 98, 176805	7.4	185
1	Interfacial ferroelectricity in marginally twisted 2D semiconductors		2