Lei Wang

List of Publications by Year
in descending order

74 papers	20,745 citations	76326 40 h-index	88630 70 g-index
76 all docs	76 docs citations	76 times ranked	22008 citing authors

#	Article	IF	Citations
1	Boron nitride substrates for high-quality graphene electronics. Nature Nanotechnology, 2010, 5, 722-726.	31.5	5,794
2	One-Dimensional Electrical Contact to a Two-Dimensional Material. Science, 2013, 342, 614-617.	12.6	2,236
3	Piezoelectricity of single-atomic-layer MoS2 for energy conversion and piezotronics. Nature, 2014, 514, 470-474.	27.8	1,762
4	Hofstadterâ€™s butterfly and the fractal quantum Hall effect in moirÃ© superlattices. Nature, 2013, 497, 598-602.	27.8	1,404
5	Multi-terminal transport measurements of MoS2 using a van der Waals heterostructure device platform. Nature Nanotechnology, 2015, 10, 534-540.	31.5	1,099
6	The Role of Surface Oxygen in the Growth of Large Single-Crystal Graphene on Copper. Science, 2013, 342, 720-723.	12.6	977
7	Probing Layer Number and Stacking Order of Fewâ€Layer Graphene by Raman Spectroscopy. Small, 2010, 6, 195-200.	10.0	650
8	Correlated electronic phases in twisted bilayer transition metal dichalcogenides. Nature Materials, 2020, 19, 861-866.	27.5	544
9	The hot pick-up technique for batch assembly of van der Waals heterostructures. Nature Communications, 2016, 7, 11894.	12.8	446
10	Multicomponent fractional quantum Hall effect inÂgraphene. Nature Physics, 2011, 7, 693-696.	16.7	405
11	Fundamental limits to graphene plasmonics. Nature, 2018, 557, 530-533.	27.8	401
12	Chemical Vapor Deposition-Derived Graphene with Electrical Performance of Exfoliated Graphene. Nano Letters, 2012, 12, 2751-2756.	9.1	365
13	Ultrafast optical switching of infrared plasmon polaritons in high-mobility graphene. Nature Photonics, 2016, 10, 244-247.	31.4	312
14	Spin and valley quantum Hall ferromagnetism inÂgraphene. Nature Physics, 2012, 8, 550-556.	16.7	307
15	Oxygen-activated growth and bandgap tunability of large single-crystal bilayer graphene. Nature Nanotechnology, 2016, 11, 426-431.	31.5	287
16	Tailoring the Electronic Structure in Bilayer Molybdenum Disulfide via Interlayer Twist. Nano Letters, 2014, 14, 3869-3875.	9.1	278
17	Electron optics with p-n junctions in ballistic graphene. Science, 2016, 353, 1522-1525.	12.6	253
18	Piezophototronic Effect in Singleâ€Atomicâ€Layer MoS₂ for Strainâ€Gated Flexible Optoelectronics. Advanced Materials, 2016, 28, 8463-8468.	21.0	187

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19	Graphene based heterostructures. Solid State Communications, 2012, 152, 1275-1282.	1.9	184
20	Largeâ€Scale Growth of Twoâ€Dimensional SnS₂ Crystals Driven by Screw Dislocations and Application to Photodetectors. Advanced Functional Materials, 2015, 25, 4255-4261.	14.9	184
21	Quantum criticality in twisted transition metal dichalcogenides. Nature, 2021, 597, 345-349.	27.8	163
22	Specular interband Andreev reflections at van der Waals interfaces between graphene and NbSe2. Nature Physics, 2016, 12, 328-332.	16.7	159
23	Evidence for a fractional fractal quantum Hall effect in graphene superlattices. Science, 2015, 350, 1231-1234.	12.6	155
24	Effect of surface morphology on friction of graphene on various substrates. Nanoscale, 2013, 5, 3063.	5.6	148
25	High-Speed Electro-Optic Modulator Integrated with Graphene-Boron Nitride Heterostructure and Photonic Crystal Nanocavity. Nano Letters, 2015, 15, 2001-2005.	9.1	142
26	Graphene Field-Effect Transistors Based on Boronâ€“Nitride Dielectrics. Proceedings of the IEEE, 2013, 101, 1609-1619.	21.3	137
27	Tunable fractional quantum Hall phases in bilayer graphene. Science, 2014, 345, 61-64.	12.6	137
28	Tunable excitons in bilayer graphene. Science, 2017, 358, 907-910.	12.6	126
29	Flexible Graphene Field-Effect Transistors Encapsulated in Hexagonal Boron Nitride. ACS Nano, 2015, 9, 8953-8959.	14.6	112
30	Ultrafast Graphene Light Emitters. Nano Letters, 2018, 18, 934-940.	9.1	109
31	Negligible Environmental Sensitivity of Graphene in a Hexagonal Boron Nitride/Graphene/h-BN Sandwich Structure. ACS Nano, 2012, 6, 9314-9319.	14.6	98
32	Graphene growth on h-BN by molecular beam epitaxy. Solid State Communications, 2012, 152, 975-978.	1.9	92
33	Renormalization of the Graphene Dispersion Velocity Determined from Scanning Tunneling Spectroscopy. Physical Review Letters, 2012, 109, 116802.	7.8	86
34	Direct measurement of discrete valley and orbital quantum numbers in bilayer graphene. Nature Communications, 2017, 8, 948.	12.8	71
35	Properties and applications of new superlattice: twisted bilayer graphene. Materials Today Physics, 2019, 9, 100099.	6.0	62
36	MoirÃ© metrology of energy landscapes in van der Waals heterostructures. Nature Communications, 2021, 12, 242.	12.8	60

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37	MoirÃ©less correlations in ABCA graphene. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.1	59
38	Physical Adsorption and Charge Transfer of Molecular Br₂ on Graphene. ACS Nano, 2014, 8, 2943-2950.	14.6	58
39	Direct Growth of Graphene on Silicon by Metal-Free Chemical Vapor Deposition. Nano-Micro Letters, 2018, 10, 20.	27.0	57
40	Measurement of collective dynamical mass of Dirac fermions in graphene. Nature Nanotechnology, 2014, 9, 594-599.	31.5	53
41	Structure effect on intrinsic piezoelectricity in septuple-atomic-layer <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si98.svg"><mml:mrow><mml:msub><mml:mrow><mml:mi mathvariant="normal">MSi</mml:mi></mml:mrow><mml:mrow><mml:mn>2</mml:mn></mml:mrow></mml:msub><mml:msub><mml mathvariant="normal">N</mml:mi></mml:mrow><mml:mrow><mml:mn>4</mml:mn></mml:mrow></mml:msub></mml:mrow></mml (M=Mo and W). Computational Materials Science, 2021, 188, 110223.	3.0	43
42	Multiple hot-carrier collection in photo-excited graphene MoirÃ© superlattices. Science Advances, 2016, 2, e1600002.	10.3	42
43	Self-powered skin electronics for energy harvesting and healthcare monitoring. Materials Today Energy, 2021, 21, 100786.	4.7	36
44	Slow Gold Adatom Diffusion on Graphene: Effect of Silicon Dioxide and Hexagonal Boron Nitride Substrates. Journal of Physical Chemistry B, 2013, 117, 4305-4312.	2.6	34
45	van der Waals epitaxy and photoresponse of two-dimensional CdSe plates. Nanoscale, 2016, 8, 11375-11379.	5.6	34
46	Graphene transistor based on tunable Dirac fermion optics. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 6575-6579.	7.1	34
47	Graphene on Selfâ€Assembled InGaN Quantum Dots Enabling Ultrahighly Sensitive Photodetectors. Advanced Optical Materials, 2019, 7, 1801792.	7.3	33
48	High-frequency performance of graphene field effect transistors with saturating IV-characteristics. , 2011, , .		32
49	van der Waals epitaxial two-dimensional CdS_xSe_(1â^'x)semiconductor alloys with tunable-composition and application to flexible optoelectronics. Nanoscale, 2017, 9, 13786-13793.	5.6	30
50	Deterministic and Etchingâ€Free Transfer of Largeâ€Scale 2D Layered Materials for Constructing Interlayer Coupled van der Waals Heterostructures. Advanced Materials Technologies, 2018, 3, 1700282.	5.8	26
51	Magnetic field detection limits for ultraclean graphene Hall sensors. Nature Communications, 2020, 11, 4163.	12.8	25
52	Topological phase transition in the Hofstadter-Hubbard model. Physical Review B, 2014, 90, .	3.2	21
53	Tailoring the thermal transport properties of monolayer hexagonal boron nitride by grain size engineering. 2D Materials, 2020, 7, 015031.	4.4	21
54	Frictional Magneto-Coulomb Drag in Graphene Double-Layer Heterostructures. Physical Review Letters, 2017, 119, 056802.	7.8	20

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55	Layered boron nitride enabling high-performance AlGaN/GaN high electron mobility transistor. Journal of Alloys and Compounds, 2020, 829, 154542.	5.5	19
56	Evolution of Two-Dimensional Mo_{1â€“<i>x</i>}W_{<i>x</i>}S₂ Alloy-Based Vertical Heterostructures with Various Composition Ranges via Manipulating the Mo/W Precursors. Journal of Physical Chemistry C, 2018, 122, 28337-28346.	3.1	17
57	Dissipation-enabled hydrodynamic conductivity in a tunable bandgap semiconductor. Science Advances, 2022, 8, eabi8481.	10.3	15
58	Single- and bi-layer graphene grown on sapphire by molecular beam epitaxy. Solid State Communications, 2014, 189, 15-20.	1.9	13
59	Exceptionally large migration length of carbon and topographically-facilitated self-limiting molecular beam epitaxial growth of graphene on hexagonal boron nitride. Carbon, 2017, 114, 579-584.	10.3	12
60	Stimulated piezotronical decontamination using Cu2MgSnS4 modified BaTiO3. Materials Today Energy, 2021, 21, 100717.	4.7	11
61	Accurate Measurement of the Gap of <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mrow><mml:mi>Graphene</mml:mi><mml:mo>/</mml:mo><mml:mi>h</mml:mi></mml:mrow><m MoirÃ© Superlattice through Photocurrent Spectroscopy. Physical Review Letters, 2021, 126, 146402.	7.8	10
62	Unconventional valley-dependent optical selection rules and landau level mixing in bilayer graphene. Nature Communications, 2020, 11, 2941.	12.8	9
63	Graphene Plasmonic Tamm States with Ultracompact Footprint. Physical Review Applied, 2019, 12, .	3.8	8
64	Seeing Hofstadter's butterfly in atomic Fermi gases. Physical Review A, 2014, 89, .	2.5	7
65	A monolithically sculpted van der Waals nano-opto-electro-mechanical coupler. Light: Science and Applications, 2022, 11, 48.	16.6	7
66	Three-dimensional nanopores on monolayer graphene for hydrogen storage. Materials Chemistry and Physics, 2018, 209, 134-145.	4.0	6
67	Two-step fabrication of large-scale MoS₂ hollow flakes. CrystEngComm, 2018, 20, 5619-5624.	2.6	6
68	Strong in-plane scattering of acoustic graphene plasmons by surface atomic steps. Nature Communications, 2022, 13, 983.	12.8	6
69	Ferroelectricity in hBN intercalated double-layer graphene. Frontiers of Physics, 2022, 17, .	5.0	6
70	Tunable multi-bands in twisted double bilayer graphene. 2D Materials, 2022, 9, 034001.	4.4	2
71	Direct observation of widely tunable mid-infrared emission of graphene foam induced by modulated laser diode light. Carbon, 2021, 179, 486-492.	10.3	1
72	Grapheneâ€“BN Heterostructures. , 0, , 219-237.		0

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73	A top-down cutting method for construction of high-performance fiber-shaped quasi-solid-state asymmetric supercapacitors. Materials Today Energy, 2021, 21, 100758.	4.7	0
74	Even-denominator fractional quantum Hall state in bilayer graphene. Wuli Xuebao/Acta Physica Sinica, 2022, .	0.5	0