

# Yuan Liu

## 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.

117 papers	14,231 citations	47 h-index	119 g-index
120 ext. papers	17,283 ext. citations	16.8 avg, IF	6.76 L-index

#	Paper	IF	Citations
117	Efficient modulation of MoS <sub>2</sub> /WSe <sub>2</sub> interlayer excitons via uniaxial strain. <i>Applied Physics Letters</i> , <b>2022</b> , 120, 053107	3.4	4
116	2D Heterostructures for Ubiquitous Electronics and Optoelectronics: Principles, Opportunities, and Challenges.. <i>Chemical Reviews</i> , <b>2022</b> ,	68.1	28
115	Strain-Plasmonic Coupled Broadband Photodetector Based on Monolayer MoS <sub>2</sub> . <i>Small</i> , <b>2022</b> , e2107104	11	3
114	Visualizing Band Profiles of Gate-Tunable Junctions in MoS <sub>2</sub> /WSe <sub>2</sub> Heterostructure Transistors. <i>ACS Nano</i> , <b>2021</b> , 15, 16314-16321	16.7	3
113	Reconfigurable electronics by disassembling and reassembling van der Waals heterostructures. <i>Nature Communications</i> , <b>2021</b> , 12, 1825	17.4	10
112	Van der Waals epitaxial growth of air-stable CrSe nanosheets with thickness-tunable magnetic order. <i>Nature Materials</i> , <b>2021</b> , 20, 818-825	27	68
111	High-order superlattices by rolling up van der Waals heterostructures. <i>Nature</i> , <b>2021</b> , 591, 385-390	50.4	47
110	Promises and prospects of two-dimensional transistors. <i>Nature</i> , <b>2021</b> , 591, 43-53	50.4	143
109	Transferred van der Waals metal electrodes for sub-1-nm MoS <sub>2</sub> vertical transistors. <i>Nature Electronics</i> , <b>2021</b> , 4, 342-347	28.4	36
108	Electronic Fluctuation of Graphene Nanoribbon MOSFETs Under a Full Quantum Dynamics Framework. <i>IEEE Transactions on Electron Devices</i> , <b>2021</b> , 68, 1980-1985	2.9	0
107	High-Density Reconfigurable Synaptic Transistors Targeting a Minimalist Neural Network. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2021</b> , 13, 28564-28573	9.5	2
106	High-Resolution Van der Waals Stencil Lithography for 2D Transistors. <i>Small</i> , <b>2021</b> , 17, e2101209	11	4
105	Gate-tunable linear magnetoresistance in molybdenum disulfide field-effect transistors with graphene insertion layer. <i>Nano Research</i> , <b>2021</b> , 14, 1814-1818	10	3
104	Recent progresses of NMOS and CMOS logic functions based on two-dimensional semiconductors. <i>Nano Research</i> , <b>2021</b> , 14, 1768-1783	10	8
103	In-plane epitaxial growth of 2D CoSe-WSe <sub>2</sub> metal-semiconductor lateral heterostructures with improved WSe <sub>2</sub> transistors performance. <i>Information Materials</i> , <b>2021</b> , 3, 222-228	23.1	11
102	Highly Selective Synthesis of Monolayer or Bilayer WSe <sub>2</sub> Single Crystals by Pre-annealing the Solid Precursor. <i>Chemistry of Materials</i> , <b>2021</b> , 33, 1307-1313	9.6	6
101	Origin of low-temperature negative transconductance in multilayer MoS <sub>2</sub> transistors. <i>Applied Physics Letters</i> , <b>2021</b> , 119, 043502	3.4	1

100	Dry Exfoliation of Large-Area 2D Monolayer and Heterostructure Arrays. <i>ACS Nano</i> , <b>2021</b> ,	16.7	5
99	Ultra-high current gain tunneling hot-electron transfer amplifier based on vertical van der Waals heterojunctions. <i>Nano Research</i> , <b>2020</b> , 13, 2085-2090	10	2
98	Stretchable synaptic transistors with tunable synaptic behavior. <i>Nano Energy</i> , <b>2020</b> , 75, 104952	17.1	40
97	Vapor phase growth of two-dimensional PdSe <sub>2</sub> nanosheets for high-photoresponsivity near-infrared photodetectors. <i>Nano Research</i> , <b>2020</b> , 13, 2091-2097	10	26
96	Reliable Patterning, Transfer Printing and Post-Assembly of Multiscale Adhesion-Free Metallic Structures for Nanogap Device Applications. <i>Advanced Functional Materials</i> , <b>2020</b> , 30, 2002549	15.6	9
95	General synthesis of two-dimensional van der Waals heterostructure arrays. <i>Nature</i> , <b>2020</b> , 579, 368-374	50.4	195
94	Efficient strain modulation of 2D materials via polymer encapsulation. <i>Nature Communications</i> , <b>2020</b> , 11, 1151	17.4	81
93	Highly Reliable Low-Voltage Memristive Switching and Artificial Synapse Enabled by van der Waals Integration. <i>Matter</i> , <b>2020</b> , 2, 965-976	12.7	22
92	An Electrically Controlled Wavelength-Tunable Nanoribbon Laser. <i>ACS Nano</i> , <b>2020</b> , 14, 3397-3404	16.7	17
91	Sensitive pressure sensors based on conductive microstructured air-gap gates and two-dimensional semiconductor transistors. <i>Nature Electronics</i> , <b>2020</b> , 3, 59-69	28.4	69
90	Microfluidic solution-processed organic and perovskite nanowires fabricated for field-effect transistors and photodetectors. <i>Journal of Materials Chemistry C</i> , <b>2020</b> , 8, 2353-2362	7.1	9
89	Possible Luttinger liquid behavior of edge transport in monolayer transition metal dichalcogenide crystals. <i>Nature Communications</i> , <b>2020</b> , 11, 659	17.4	12
88	Programmable devices based on reversible solid-state doping of two-dimensional semiconductors with superionic silver iodide. <i>Nature Electronics</i> , <b>2020</b> , 3, 630-637	28.4	26
87	A paper-based SERS assay for sensitive duplex cytokine detection towards the atherosclerosis-associated disease diagnosis. <i>Journal of Materials Chemistry B</i> , <b>2020</b> , 8, 3582-3589	7.3	10
86	Ultrafast growth of large single crystals of monolayer WS and WSe. <i>National Science Review</i> , <b>2020</b> , 7, 737-744	10.8	36
85	Ultrasensitive Organic-Modulated CsPbBr <sub>3</sub> Quantum Dot Photodetectors via Fast Interfacial Charge Transfer. <i>Advanced Materials Interfaces</i> , <b>2020</b> , 7, 1901741	4.6	17
84	High-Performance Organic Electrochemical Transistors with Nanoscale Channel Length and Their Application to Artificial Synapse. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2020</b> , 12, 49915-49925	9.5	18
83	Probing photoelectrical transport in lead halide perovskites with van der Waals contacts. <i>Nature Nanotechnology</i> , <b>2020</b> , 15, 768-775	28.7	23

82	Graphene-based vertical thin film transistors. <i>Science China Information Sciences</i> , <b>2020</b> , 63, 1	3.4	14
81	Electrically controllable laser frequency combs in graphene-fibre microresonators. <i>Light: Science and Applications</i> , <b>2020</b> , 9, 185	16.7	14
80	Rational design of AlO <sub>2</sub> /2D perovskite heterostructure dielectric for high performance MoS phototransistors. <i>Nature Communications</i> , <b>2020</b> , 11, 4266	17.4	21
79	Doping-free complementary WSe circuit via van der Waals metal integration. <i>Nature Communications</i> , <b>2020</b> , 11, 1866	17.4	68
78	In Situ Probing Molecular Intercalation in Two-Dimensional Layered Semiconductors. <i>Nano Letters</i> , <b>2019</b> , 19, 6819-6826	11.5	37
77	van der Waals Epitaxial Growth of Atomically Thin 2D Metals on Dangling-Bond-Free WSe <sub>2</sub> and WS <sub>2</sub> . <i>Advanced Functional Materials</i> , <b>2019</b> , 29, 1806611	15.6	60
76	A field-effect approach to directly profiling the localized states in monolayer MoS <sub>2</sub> . <i>Science Bulletin</i> , <b>2019</b> , 64, 1049-1055	10.6	5
75	van der Waals epitaxial growth of ultrathin metallic NiSe nanosheets on WSe <sub>2</sub> as high performance contacts for WSe <sub>2</sub> transistors. <i>Nano Research</i> , <b>2019</b> , 12, 1683-1689	10	20
74	Exploring and suppressing the kink effect of black phosphorus field-effect transistors operating in the saturation regime. <i>Nanoscale</i> , <b>2019</b> , 11, 10420-10428	7.7	4
73	Phase-Tunable Synthesis of Ultrathin Layered Tetragonal CoSe and Nonlayered Hexagonal CoSe Nanoplates. <i>Advanced Materials</i> , <b>2019</b> , 31, e1900901	24	37
72	Prediction of Stable and High-Performance Charge Transport in Zigzag Tellurene Nanoribbons. <i>IEEE Transactions on Electron Devices</i> , <b>2019</b> , 66, 2365-2369	2.9	8
71	Van der Waals integration before and beyond two-dimensional materials. <i>Nature</i> , <b>2019</b> , 567, 323-333	50.4	530
70	Interface engineering for two-dimensional semiconductor transistors. <i>Nano Today</i> , <b>2019</b> , 25, 122-134	17.9	20
69	Direct van der Waals epitaxial growth of 1D/2D Sb <sub>2</sub> Se <sub>3</sub> /WS <sub>2</sub> mixed-dimensional p-n heterojunctions. <i>Nano Research</i> , <b>2019</b> , 12, 1139-1145	10	28
68	Perovskite/Black Phosphorus/MoS Photogate Reversed Photodiodes with Ultrahigh Light On/Off Ratio and Fast Response. <i>ACS Nano</i> , <b>2019</b> , 13, 4804-4813	16.7	53
67	Self-Assembled Molecular-Electronic Films Controlled by Room Temperature Quantum Interference. <i>Chem</i> , <b>2019</b> , 5, 474-484	16.2	28
66	Band-Offset Degradation in van der Waals Heterojunctions. <i>Physical Review Applied</i> , <b>2019</b> , 12,	4.3	7
65	Quest for p-Type Two-Dimensional Semiconductors. <i>ACS Nano</i> , <b>2019</b> , 13, 12294-12300	16.7	36

64	Quantitative Surface Plasmon Interferometry via Upconversion Photoluminescence Mapping. <i>Research</i> , <b>2019</b> , 2019, 8304824	7.8	2
63	Kirigami-inspired multiscale patterning of metallic structures via predefined nanotrench templates. <i>Microsystems and Nanoengineering</i> , <b>2019</b> , 5, 54	7.7	11
62	Tunable Schottky barrier width and enormously enhanced photoresponsivity in Sb doped SnS <sub>2</sub> monolayer. <i>Nano Research</i> , <b>2019</b> , 12, 463-468	10	50
61	Long-Range Hierarchical Nanocrystal Assembly Driven by Molecular Structural Transformation. <i>Journal of the American Chemical Society</i> , <b>2019</b> , 141, 1498-1505	16.4	14
60	Maximizing the Current Output in Self-Aligned Graphene-InAs-Metal Vertical Transistors. <i>ACS Nano</i> , <b>2019</b> , 13, 847-854	16.7	14
59	High-performance asymmetric electrodes photodiode based on Sb/WSe <sub>2</sub> heterostructure. <i>Nano Research</i> , <b>2019</b> , 12, 339-344	10	25
58	High-Performance Photoinduced Memory with Ultrafast Charge Transfer Based on MoS <sub>2</sub> /SWCNTs Network Van Der Waals Heterostructure. <i>Small</i> , <b>2019</b> , 15, e1804661	11	17
57	All-Two-Dimensional-Material Hot Electron Transistor. <i>IEEE Electron Device Letters</i> , <b>2018</b> , 39, 634-637	4.4	14
56	On-Chip in Situ Monitoring of Competitive Interfacial Anionic Chemisorption as a Descriptor for Oxygen Reduction Kinetics. <i>ACS Central Science</i> , <b>2018</b> , 4, 590-599	16.8	19
55	Few-Layer GeAs Field-Effect Transistors and Infrared Photodetectors. <i>Advanced Materials</i> , <b>2018</b> , 30, e1705934	15.934	69
54	Aptamer-based multifunctional ligand-modified UCNP for targeted PDT and bioimaging. <i>Nanoscale</i> , <b>2018</b> , 10, 10986-10990	7.7	29
53	Two-dimensional transistors beyond graphene and TMDCs. <i>Chemical Society Reviews</i> , <b>2018</b> , 47, 6388-6408	38.5	193
52	Gate-tunable frequency combs in graphene-nitride microresonators. <i>Nature</i> , <b>2018</b> , 558, 410-414	50.4	101
51	Broadband gate-tunable terahertz plasmons in graphene heterostructures. <i>Nature Photonics</i> , <b>2018</b> , 12, 22-28	33.9	83
50	Highly-anisotropic optical and electrical properties in layered SnSe. <i>Nano Research</i> , <b>2018</b> , 11, 554-564	10	77
49	Chemical Vapor Deposition Growth of Single Crystalline CoTe <sub>2</sub> Nanosheets with Tunable Thickness and Electronic Properties. <i>Chemistry of Materials</i> , <b>2018</b> , 30, 8891-8896	9.6	30
48	Sub-kT/q switching in InO nanowire negative capacitance field-effect transistors. <i>Nanoscale</i> , <b>2018</b> , 10, 19131-19139	7.7	6
47	Solution-processable 2D semiconductors for high-performance large-area electronics. <i>Nature</i> , <b>2018</b> , 562, 254-258	50.4	404

46	Quantum interference mediated vertical molecular tunneling transistors. <i>Science Advances</i> , <b>2018</b> , 4, eaat8237	18.3	43
45	Synthetic Control of Two-Dimensional NiTe Single Crystals with Highly Uniform Thickness Distributions. <i>Journal of the American Chemical Society</i> , <b>2018</b> , 140, 14217-14223	16.4	74
44	Two-dimensional plumbum-doped tin diselenide monolayer transistor with high on/off ratio. <i>Nanotechnology</i> , <b>2018</b> , 29, 474002	3.4	22
43	Approaching the Schottky-Mott limit in van der Waals metal-semiconductor junctions. <i>Nature</i> , <b>2018</b> , 557, 696-700	50.4	766
42	Ambipolar Barristors for Reconfigurable Logic Circuits. <i>Nano Letters</i> , <b>2017</b> , 17, 1448-1454	11.5	18
41	A self-powered high-performance graphene/silicon ultraviolet photodetector with ultra-shallow junction: breaking the limit of silicon?. <i>Npj 2D Materials and Applications</i> , <b>2017</b> , 1,	8.8	144
40	Molecular Recognition-Based DNA Nanoassemblies on the Surfaces of Nanosized Exosomes. <i>Journal of the American Chemical Society</i> , <b>2017</b> , 139, 5289-5292	16.4	134
39	Aptasensor with Expanded Nucleotide Using DNA Nanotetrahedra for Electrochemical Detection of Cancerous Exosomes. <i>ACS Nano</i> , <b>2017</b> , 11, 3943-3949	16.7	264
38	Solvent-Based Soft-Patterning of Graphene Lateral Heterostructures for Broadband High-Speed Metal-Semiconductor Metal Photodetectors. <i>Advanced Materials Technologies</i> , <b>2017</b> , 2, 1600241	6.8	43
37	Vertical Charge Transport and Negative Transconductance in Multilayer Molybdenum Disulfides. <i>Nano Letters</i> , <b>2017</b> , 17, 5495-5501	11.5	35
36	Aptamer/AuNP Biosensor for Colorimetric Profiling of Exosomal Proteins. <i>Angewandte Chemie - International Edition</i> , <b>2017</b> , 56, 11916-11920	16.4	281
35	Highly Sensitive Chemical Detection with Tunable Sensitivity and Selectivity from Ultrathin Platinum Nanowires. <i>Small</i> , <b>2017</b> , 13, 1602969	11	14
34	Three-dimensional graphene membrane cathode for high energy density rechargeable lithium-air batteries in ambient conditions. <i>Nano Research</i> , <b>2017</b> , 10, 472-482	10	23
33	Pushing the Performance Limit of Sub-100 nm Molybdenum Disulfide Transistors. <i>Nano Letters</i> , <b>2016</b> , 16, 6337-6342	11.5	91
32	Van der Waals heterostructures and devices. <i>Nature Reviews Materials</i> , <b>2016</b> , 1,	73.3	1262
31	Size-dependent phase transition in methylammonium lead iodide perovskite microplate crystals. <i>Nature Communications</i> , <b>2016</b> , 7, 11330	17.4	173
30	High-Current-Density Vertical-Tunneling Transistors from Graphene/Highly Doped Silicon Heterostructures. <i>Advanced Materials</i> , <b>2016</b> , 28, 4120-5	24	35
29	In situ development of highly concave and composition-confined PtNi octahedra with high oxygen reduction reaction activity and durability. <i>Nano Research</i> , <b>2016</b> , 9, 149-157	10	52

28	Plasmonic/Nonlinear Optical Material Core/Shell Nanorods as Nanoscale Plasmon Modulators and Optical Voltage Sensors. <i>Angewandte Chemie - International Edition</i> , <b>2016</b> , 55, 583-7	16.4	19
27	van der Waals Heterojunction Devices Based on Organohalide Perovskites and Two-Dimensional Materials. <i>Nano Letters</i> , <b>2016</b> , 16, 367-73	11.5	163
26	Aptamers against Cells Overexpressing Glypican 3 from Expanded Genetic Systems Combined with Cell Engineering and Laboratory Evolution. <i>Angewandte Chemie - International Edition</i> , <b>2016</b> , 55, 12372-5	16.4	60
25	Toward barrier free contact to molybdenum disulfide using graphene electrodes. <i>Nano Letters</i> , <b>2015</b> , 15, 3030-4	11.5	286
24	High-Performance Organic Vertical Thin Film Transistor Using Graphene as a Tunable Contact. <i>ACS Nano</i> , <b>2015</b> , 9, 11102-8	16.7	58
23	Wafer-scale growth of large arrays of perovskite microplate crystals for functional electronics and optoelectronics. <i>Science Advances</i> , <b>2015</b> , 1, e1500613	14.3	226
22	Large area growth and electrical properties of p-type WSe <sub>2</sub> atomic layers. <i>Nano Letters</i> , <b>2015</b> , 15, 709-13	11.5	287
21	51.4: Invited Paper: High Performance Flexible TFTs from Oxide/Carbon Heterostructures. <i>Digest of Technical Papers SID International Symposium</i> , <b>2015</b> , 46, 775-777	0.5	
20	Chemical vapor deposition growth of monolayer MoSe <sub>2</sub> nanosheets. <i>Nano Research</i> , <b>2014</b> , 7, 511-517	10	285
19	Solution processable colloidal nanoplates as building blocks for high-performance electronic thin films on flexible substrates. <i>Nano Letters</i> , <b>2014</b> , 14, 6547-53	11.5	60
18	High density catalytic hot spots in ultrafine wavy nanowires. <i>Nano Letters</i> , <b>2014</b> , 14, 3887-94	11.5	93
17	Highly flexible electronics from scalable vertical thin film transistors. <i>Nano Letters</i> , <b>2014</b> , 14, 1413-8	11.5	113
16	Electroluminescence and photocurrent generation from atomically sharp WSe <sub>2</sub> /MoS <sub>2</sub> heterojunction p-n diodes. <i>Nano Letters</i> , <b>2014</b> , 14, 5590-7	11.5	782
15	Few-layer molybdenum disulfide transistors and circuits for high-speed flexible electronics. <i>Nature Communications</i> , <b>2014</b> , 5, 5143	17.4	329
14	Metal-semiconductor transition in atomically thin Bi <sub>2</sub> Sr <sub>2</sub> Co <sub>2</sub> O <sub>8</sub> nanosheets. <i>APL Materials</i> , <b>2014</b> , 2, 092507	9.7	6
13	Real-time electrical detection of nitric oxide in biological systems with sub-nanomolar sensitivity. <i>Nature Communications</i> , <b>2013</b> , 4, 2225	17.4	96
12	Highly efficient gate-tunable photocurrent generation in vertical heterostructures of layered materials. <i>Nature Nanotechnology</i> , <b>2013</b> , 8, 952-8	28.7	866
11	Flexible solid-state supercapacitors based on three-dimensional graphene hydrogel films. <i>ACS Nano</i> , <b>2013</b> , 7, 4042-9	16.7	945

10	Chemical vapour deposition growth of large single crystals of monolayer and bilayer graphene. <i>Nature Communications</i> , <b>2013</b> , 4, 2096	17.4	422
9	High-capacity silicon-air battery in alkaline solution. <i>ChemSusChem</i> , <b>2012</b> , 5, 177-80	8.3	35
8	High-yield chemical vapor deposition growth of high-quality large-area AB-stacked bilayer graphene. <i>ACS Nano</i> , <b>2012</b> , 6, 8241-9	16.7	215
7	Graphene: an emerging electronic material. <i>Advanced Materials</i> , <b>2012</b> , 24, 5782-825	24	603
6	Domain wall motion in synthetic Co <sub>2</sub> Si nanowires. <i>Nano Letters</i> , <b>2012</b> , 12, 1972-6	11.5	12
5	Scalable fabrication of self-aligned graphene transistors and circuits on glass. <i>Nano Letters</i> , <b>2012</b> , 12, 2653-7	11.5	67
4	Plasmon resonance enhanced multicolour photodetection by graphene. <i>Nature Communications</i> , <b>2011</b> , 2, 579	17.4	546
3	High-speed graphene transistors with a self-aligned nanowire gate. <i>Nature</i> , <b>2010</b> , 467, 305-8	50.4	1031
2	Low voltage and robust InSe memristor using van der Waals electrodes integration. <i>International Journal of Extreme Manufacturing</i> ,	7.9	4
1	Ultimate dielectric scaling of 2D transistors via van der Waals metal integration. <i>Nano Research</i> , 1	10	4