

# Hongyi Yu

## List of Publications by Year in descending order

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55  
papers

9,602  
citations

185998

28  
h-index

174990

52  
g-index

55  
all docs

55  
docs citations

55  
times ranked

9186  
citing authors

#	ARTICLE	IF	CITATIONS
1	Valleytronics in 2D materials. <i>Nature Reviews Materials</i> , 2016, 1, .	23.3	1,712
2	Electrical control of neutral and charged excitons in a monolayer semiconductor. <i>Nature Communications</i> , 2013, 4, 1474.	5.8	1,246
3	Optical generation of excitonic valley coherence in monolayer WSe <sub>2</sub> . <i>Nature Nanotechnology</i> , 2013, 8, 634-638.	15.6	1,210
4	Signatures of moiré-trapped valley excitons in MoSe <sub>2</sub> /WSe <sub>2</sub> heterobilayers. <i>Nature</i> , 2019, 567, 66-70.	13.7	842
5	Valley-polarized exciton dynamics in a 2D semiconductor heterostructure. <i>Science</i> , 2016, 351, 688-691.	6.0	606
6	Moiré excitons: From programmable quantum emitter arrays to spin-orbit-coupled artificial lattices. <i>Science Advances</i> , 2017, 3, e1701696.	4.7	427
7	Interlayer valley excitons in heterobilayers of transition metal dichalcogenides. <i>Nature Nanotechnology</i> , 2018, 13, 1004-1015.	15.6	373
8	Magnetoelectric effects and valley-controlled spin quantum gates in transition metal dichalcogenide bilayers. <i>Nature Communications</i> , 2013, 4, 2053.	5.8	302
9	Spin-layer locking effects in optical orientation of exciton spin in bilayer WSe <sub>2</sub> . <i>Nature Physics</i> , 2014, 10, 130-134.	6.5	297
10	Dirac cones and Dirac saddle points of bright excitons in monolayer transition metal dichalcogenides. <i>Nature Communications</i> , 2014, 5, 3876.	5.8	262
11	Valley excitons in two-dimensional semiconductors. <i>National Science Review</i> , 2015, 2, 57-70.	4.6	254
12	Interlayer Exciton Optoelectronics in a 2D Heterostructure p-n Junction. <i>Nano Letters</i> , 2017, 17, 638-643.	4.5	253
13	Topological mosaics in moiré superlattices of van der Waals heterobilayers. <i>Nature Physics</i> , 2017, 13, 356-362.	6.5	205
14	Anomalous Light Cones and Valley Optical Selection Rules of Interlayer Excitons in Twisted Heterobilayers. <i>Physical Review Letters</i> , 2015, 115, 187002.	2.9	194
15	Excitonic luminescence upconversion in a two-dimensional semiconductor. <i>Nature Physics</i> , 2016, 12, 323-327.	6.5	187
16	Interlayer coupling in commensurate and incommensurate bilayer structures of transition-metal dichalcogenides. <i>Physical Review B</i> , 2017, 95, .	1.1	128
17	Valley phonons and exciton complexes in a monolayer semiconductor. <i>Nature Communications</i> , 2020, 11, 618.	5.8	128
18	Brightened spin-triplet interlayer excitons and optical selection rules in van der Waals heterobilayers. <i>2D Materials</i> , 2018, 5, 035021.	2.0	107

#	ARTICLE	IF	CITATIONS
19	Directional interlayer spin-valley transfer in two-dimensional heterostructures. Nature Communications, 2016, 7, 13747.	5.8	106
20	Unusual Exciton-Phonon Interactions at van der Waals Engineered Interfaces. Nano Letters, 2017, 17, 1194-1199.	4.5	81
21	Nonlinear Valley and Spin Currents from Fermi Pocket Anisotropy in 2D Crystals. Physical Review Letters, 2014, 113, 156603.	2.9	80
22	Spin-valley qubit in nanostructures of monolayer semiconductors: Optical control and hyperfine interaction. Physical Review B, 2016, 93, .	1.1	56
23	Observation of intervalley quantum interference in epitaxial monolayer tungsten diselenide. Nature Communications, 2015, 6, 8180.	5.8	55
24	Phonon-assisted oscillatory exciton dynamics in monolayer MoSe <sub>2</sub> . Npj 2D Materials and Applications, 2017, 1, .	3.9	50
25	Giant magnetic field from moiré induced Berry phase in homobilayer semiconductors. National Science Review, 2020, 7, 12-20.	4.6	40
26	Many-body effects in nonlinear optical responses of 2D layered semiconductors. 2D Materials, 2017, 4, 025024.	2.0	35
27	Realization of Valley and Spin Pumps by Scattering at Nonmagnetic Disorders. Physical Review Letters, 2017, 118, 096602.	2.9	30
28	Room-Temperature Valley Polarization in Atomically Thin Semiconductors <i>via</i> Chalcogenide Alloying. ACS Nano, 2020, 14, 9873-9883.	7.3	30
29	Intrinsic donor-bound excitons in ultraclean monolayer semiconductors. Nature Communications, 2021, 12, 871.	5.8	29
30	Interface excitons at lateral heterojunctions in monolayer semiconductors. Physical Review B, 2018, 98, .	1.1	28
31	Population Pulsation Resonances of Excitons in Monolayer $\text{MoSe}_2$ Sub-Monolayer $\text{WSe}_2$ Heterostructures. Physical Review Letters, 2015, 114, 137402.	2.9	25
32	Nanoscale Trapping of Interlayer Excitons in a 2D Semiconductor Heterostructure. Nano Letters, 2021, 21, 5641-5647.	4.5	25
33	Optical selection rules for excitonic Rydberg series in the massive Dirac cones of hexagonal two-dimensional materials. Physical Review B, 2017, 95, .	1.1	23
34	Symmetry-Controlled Electron-Phonon Interactions in van der Waals Heterostructures. ACS Nano, 2019, 13, 552-559.	7.3	20
35	Temperature dependent moiré trapping of interlayer excitons in MoSe <sub>2</sub> -WSe <sub>2</sub> heterostructures. Npj 2D Materials and Applications, 2021, 5, .	3.9	20
36	An ultrafast terahertz probe of the transient evolution of the charged and neutral phase of photo-excited electron-hole gas in a monolayer semiconductor. 2D Materials, 2016, 3, 014001.	2.0	18

#	ARTICLE	IF	CITATIONS
37	Interferences of electrostatic moiré potentials and bichromatic superlattices of electrons and excitons in transition metal dichalcogenides. 2D Materials, 2021, 8, 025007.	2.0	17
38	Magnetization without polarization. Nature Materials, 2017, 16, 876-877.	13.3	14
39	Electrically tunable topological transport of moiré polaritons. Science Bulletin, 2020, 65, 1555-1562.	4.3	14
40	Strong Moiré Excitons in High-Angle Twisted Transition Metal Dichalcogenide Homobilayers with Robust Commensuration. Nano Letters, 2022, 22, 203-210.	4.5	12
41	Luminescence Anomaly of Dipolar Valley Excitons in Homobilayer Semiconductor Moiré Superlattices. Physical Review X, 2021, 11, .	2.8	10
42	Generating coherent states of entangled spins. Physical Review A, 2011, 84, .	1.0	8
43	Deterministic preparation of Dicke states of donor nuclear spins in silicon by cooperative pumping. Physical Review B, 2012, 85, .	1.1	7
44	Entanglement detection and quantum metrology by Raman photon-diffraction imaging. Physical Review A, 2013, 87, .	1.0	7
45	Non-adiabatic Hall effect at Berry curvature hot spot. 2D Materials, 2020, 7, 045004.	2.0	6
46	Monolayer Semiconductor Auger Detector. Nano Letters, 2020, 20, 5538-5543.	4.5	5
47	Probing the exciton k-space dynamics in monolayer tungsten diselenides. 2D Materials, 2019, 6, 025035.	2.0	4
48	Nonlinear optics in the electron-hole continuum in 2D semiconductors: two-photon transition, second harmonic generation and valley current injection. Science Bulletin, 2019, 64, 1036-1043.	4.3	4
49	Chiral Excitonics in Monolayer Semiconductors on Patterned Dielectrics. Physical Review Letters, 2022, 128, .	2.9	4
50	Waveguiding valley excitons in monolayer transition metal dichalcogenides by dielectric interfaces in the substrate. Physical Review B, 2021, 104, .	1.1	3
51	Valley-Spin Physics in 2D Semiconducting Transition Metal Dichalcogenides. , 2017, , 279-294.		1
52	Valley excitons: From monolayer semiconductors to moiré superlattices. Semiconductors and Semimetals, 2020, 105, 269-303.	0.4	1
53	Moiré excitons at line defects in transition metal dichalcogenides heterobilayers. Comptes Rendus Physique, 2021, 22, 53-68.	0.3	1
54	Nanometrology of field gradient using donor spins in silicon. Journal of Physics Condensed Matter, 2018, 30, 425301.	0.7	0

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55	Nonlinear Spectroscopy of Valley Excitons in 2D Semiconductors and Heterostructures. , 2016, , .		0