Hyunyong Choi

List of Publications by Year
in descending order

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80	2,953	159358	168136
papers	citations	30 h-index	53 g-index

83	83	83	5494
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Terahertz-driven hot Dirac fermion and plasmon dynamics in the bulk-insulating topological insulator <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msub><mml:mi>Bi</mml:mi><mml:mn>2</mml:mn></mml:msub></mml:mrow></mml:math>. Physical Review B, 2022, 105, .	1.1	2
2	Reconfigurable photo-induced doping of two-dimensional van der Waals semiconductors using different photon energies. Nature Electronics, 2021, 4, 38-44.	13.1	42
3	Opposite behavior of ultrafast dynamics of exciton shift and linewidth broadening in bilayer <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi>Re</mml:mi><mml:msub><mml:mi mathvariant="normal">S</mml:mi><mml:mn>2</mml:mn></mml:msub></mml:mrow></mml:math>. Physical Review B, 2021, 103, .	1.1	11
4	Ultrafast non-excitonic valley Hall effect in MoS2/WTe2 heterobilayers. Nature Communications, 2021, 12, 1635.	5.8	8
5	Light Absorption and Emission Dominated by Trions in the Type-I van der Waals Heterostructures. ACS Photonics, 2021, 8, 1972-1978.	3.2	10
6	Heteroepitaxial van der Waals semiconductor superlattices. Nature Nanotechnology, 2021, 16, 1092-1098.	15.6	54
7	Dirac Fermion and Plasmon Dynamics in Graphene and 3D Topological Insulators. Advanced Optical Materials, 2020, 8, 1801334.	3.6	13
8	Selfâ€Powered Gas Sensors: 2D Transition Metal Dichalcogenide Heterostructures for pâ€•and nâ€Type Photovoltaic Selfâ€Powered Gas Sensor (Adv. Funct. Mater. 43/2020). Advanced Functional Materials, 2020, 30, 2070284.	7.8	1
9	2D Transition Metal Dichalcogenide Heterostructures for pâ€•and nâ€Type Photovoltaic Selfâ€Powered Gas Sensor. Advanced Functional Materials, 2020, 30, 2003360.	7.8	102
10	Polarization Selective Color Filter Based on Plasmonic Nanograting Embedded Etalon Structures. Nano Letters, 2020, 20, 6344-6350.	4.5	31
11	Role of weak interlayer coupling in ultrafast exciton-exciton annihilation in two-dimensional rhenium dichalcogenides. Physical Review B, 2020, 101, .	1.1	21
12	Picosecond Competing Dynamics of Apparent Semiconducting-Metallic Phase Transition in the Topological Insulator Bi₂Se₃. ACS Photonics, 2020, 7, 759-764.	3.2	19
13	Near-field sub-diffraction photolithography with an elastomeric photomask. Nature Communications, 2020, 11, 805.	5.8	36
14	Electrical detection of the surface spin polarization of the candidate topological Kondo insulator <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi>Sm</mml:mi><mml:msub><mml:mi mathvariant="normal">B</mml:mi><mml:mn>6</mml:mn></mml:msub></mml:mrow></mml:math>. Physical Review B, 2019, 99, .	1.1	13
15	Light Polarization-Controlled Conversion of Ultrafast Coherentâ€“Incoherent Exciton Dynamics in Few-Layer ReS₂. Nano Letters, 2019, 19, 7464-7469.	4.5	20
16	Analysis of Defect Recovery in Reduced Graphene Oxide and Its Application as a Heater for Self-Healing Polymers. ACS Applied Materials & Interfaces, 2019, 11, 16804-16814.	4.0	19
17	Carrier multiplication in van der Waals layered transition metal dichalcogenides. Nature Communications, 2019, 10, 5488.	5.8	41
18	Lowering the Schottky Barrier Height by Graphene/Ag Electrodes for Highâ€Mobility MoS₂ Fieldâ€Effect Transistors. Advanced Materials, 2019, 31, e1804422.	11.1	165

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19	Electrical Control of Electromagnetically Induced Transparency by Terahertz Metamaterial Funneling. Advanced Optical Materials, 2019, 7, 1801205.	3.6	55
20	Electric Control over 2D Dirac Plasmon Resonances in Topological Insulator Bi2Se3 in Proximity Contact with Graphene. , 2019, , .		0
21	Terahertz Spectroscopy of Dirac Plasmons: Graphene and Topological Insulators. , 2019, , .		0
22	Spin and charge dynamics across topological heterojunction in monolayer 1T`-WTe2. , 2019, , .		0
23	Optoelectronic valley-locked spin photocurrent generation using WSe2-Bi2Se3 heterostructure. , 2019, , .		0
24	Highly efficient computer algorithm for identifying layer thickness of atomically thin 2D materials. Journal Physics D: Applied Physics, 2018, 51, 11LT03.	1.3	6
25	Control over Electronâ€“Phonon Interaction by Dirac Plasmon Engineering in the Bi₂Se₃ Topological Insulator. Nano Letters, 2018, 18, 734-739.	4.5	39
26	Ultrafast quantum beats of anisotropic excitons in atomically thin ReS2. Nature Communications, 2018, 9, 351.	5.8	49
27	Time-Resolved Observations of Photo-Generated Charge-Carrier Dynamics in Sb₂Se₃ Photocathodes for Photoelectrochemical Water Splitting. ACS Nano, 2018, 12, 11088-11097.	7.3	94
28	Photocurrent Engineering of Silicon Nanowire Fieldâ€Effect Transistors by Ultrathin Poly(3â€hexylthiophene). Advanced Materials Interfaces, 2018, 5, 1801270.	1.9	2
29	Writing monolithic integrated circuits on a two-dimensional semiconductor with a scanning light probe. Nature Electronics, 2018, 1, 512-517.	13.1	74
30	Terahertz Investigation of Dirac Materials: Graphene and Topological Insulators. Journal of the Korean Physical Society, 2018, 72, 1484-1490.	0.3	3
31	Role of Spin Hall Effect in the Topological Side Surface Conduction. ACS Photonics, 2018, 5, 3347-3352.	3.2	8
32	Generation, transport and detection of valley-locked spin photocurrent in WSe2â€“grapheneâ€“Bi2Se3 heterostructures. Nature Nanotechnology, 2018, 13, 910-914.	15.6	33
33	Fully Transparent pâ€MoTe₂ 2D Transistors Using Ultrathin MoO_x/Pt Contact Media for Indiumâ€Tinâ€Oxide Source/Drain. Advanced Functional Materials, 2018, 28, 1801204.	7.8	25
34	Terahertz Metamaterials: Electrically Controllable Molecularization of Terahertz Meta-Atoms (Adv.) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50	11.1	0
35	Electrically Controllable Molecularization of Terahertz Metaâ€Atoms. Advanced Materials, 2018, 30, e1802760.	11.1	42
36	Ultrafast Hot-Carrier Photovoltaics of Type-I Monolayer Heterojunctions in the Broad Spectral Ranges. ACS Photonics, 2017, 4, 429-434.	3.2	6

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37	Highly Sensitive, Gate-Tunable, Room-Temperature Mid-Infrared Photodetection Based on Grapheneâ€“Bi₂Se₃ Heterostructure. ACS Photonics, 2017, 4, 482-488.	3.2	70
38	Ultrafast Manipulation of Terahertz Waves using Graphene Metamaterials. , 2017, , 295-322.		0
39	Sulfur vacancy-induced reversible doping of transition metal disulfides via hydrazine treatment. Nanoscale, 2017, 9, 9333-9339.	2.8	66
40	Designing Two-Dimensional Dirac Heterointerfaces of Few-Layer Graphene and Tetradymite-Type Sb₂Te₃ for Thermoelectric Applications. ACS Applied Materials & Interfaces, 2017, 9, 42050-42057.	4.0	14
41	Photoinduced Nonlinear Mixing of Terahertz Dipole Resonances in Graphene Metadevices. Advanced Materials, 2016, 28, 1495-1500.	11.1	13
42	1s-intraexcitonic dynamics in monolayer MoS2 probed by ultrafast mid-infrared spectroscopy. Nature Communications, 2016, 7, 10768.	5.8	72
43	Comparison of hydrogen sulfide gas and sulfur powder for synthesis of molybdenum disulfide nanosheets. Current Applied Physics, 2016, 16, 691-695.	1.1	15
44	Metamaterials: Electromagnetically Induced Transparency Analogue by Self-Complementary Terahertz Meta-Atom (Advanced Optical Materials 4/2016). Advanced Optical Materials, 2016, 4, 490-490.	3.6	0
45	Solvent-Assisted Gel Printing for Micropatterning Thin Organicâ€“Inorganic Hybrid Perovskite Films. ACS Nano, 2016, 10, 9026-9035.	7.3	95
46	Selectively tunable optical Stark effect of anisotropic excitons in atomically thin ReS2. Nature Communications, 2016, 7, 13569.	5.8	76
47	Unusually efficient photocurrent extraction in monolayer van der Waals heterostructure by tunnelling through discretized barriers. Nature Communications, 2016, 7, 13278.	5.8	120
48	Composition Control of Plasmonâ€“Phonon Interaction Using Topological Quantum-Phase Transition in Photoexcited (Bi_{1â€“x}In_x)₂Se₃. ACS Photonics, 2016, 3, 1426-1431.	3.2	12
49	Electromagnetically Induced Transparency Analogue by Selfâ€Complementary Terahertz Metaâ€Atom. Advanced Optical Materials, 2016, 4, 627-633.	3.6	20
50	Hybridization of anti-dipole plasmon oscillation and phonon in the topological insulator Bi2Se3. , 2016, , .		0
51	Ultrafast optical control of plasmon-phonon interaction using topological phase transition in (Bi1-xInx)2Se3. , 2016, , .		0
52	Observation of the mid-infrared 1s intraexcitonic dynamics in monolayer MoS<inf>2</inf>. , 2015, , .		0
53	Tunable Fano quantum-interference dynamics using a topological phase transition in<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msub><mml:mrow><mml:mo>(</mml:mo><mml:mrow><mml:mi>	1.1	37
54	Rotationâ€Misfitâ€Free Heteroepitaxial Stacking and Stitching Growth of Hexagonal Transitionâ€Metal Dichalcogenide Monolayers by Nucleation Kinetics Controls. Advanced Materials, 2015, 27, 3803-3810.	11.1	113

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55	2D Materials: Rotationâ€Misfitâ€Free Heteroepitaxial Stacking and Stitching Growth of Hexagonal Transitionâ€Metal Dichalcogenide Monolayers by Nucleation Kinetics Controls (Adv. Mater. 25/2015). Advanced Materials, 2015, 27, 3839-3839.	11.1	2
56	Ultrafast mid-infrared investigations on the surface Dirac fermions with topological phase transition. , 2015, , .		0
57	Giant modulation depth in the photoexcited topological surface plasmons exceeding 2,400 %. , 2015, , .		0
58	Photoinduced nonlinear mixing of terahertz dipole resonances in graphene metadevice. , 2015, , .		0
59	Controllable synthesis of molybdenum tungsten disulfide alloy for vertically composition-controlled multilayer. Nature Communications, 2015, 6, 7817.	5.8	188
60	Interlayer orientation-dependent light absorption and emission in monolayer semiconductor stacks. Nature Communications, 2015, 6, 7372.	5.8	154
61	Counterbalanced Effect of Surface Trap and Auger Recombination on the Transverse Terahertz Carrier Dynamics in Silicon Nanowires. IEEE Transactions on Terahertz Science and Technology, 2015, 5, 605-612.	2.0	5
62	Ultra-high modulation depth exceeding 2,400% in optically controlled topological surface plasmons. Nature Communications, 2015, 6, 8814.	5.8	76
63	Ultrafast mid-infrared intraexcitonic spectroscopy of monolayer MoS2. , 2015, , .		0
64	Terahertz induced transparency in single-layer graphene. Applied Physics Letters, 2014, 105, .	1.5	31
65	Observation of the Inverse Giant Piezoresistance Effect in Silicon Nanomembranes Probed by Ultrafast Terahertz Spectroscopy. Nano Letters, 2014, 14, 6942-6948.	4.5	11
66	Ultrafast terahertz dynamics of hot Dirac-electron surface scattering in the topological insulator<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mrow><mml:mi>Bi</mml:mi></mml:mrow><mml:mn>2</mml:mn></mml:msub><mml:msub><mml:mrow><mml:mi>Se</mml:mi></mml:mrow><mml:mn>3</mml:mn></mml:msub></mml:math>. Physical Review B, 2014, 89, .	1.1	85
67	Unconventional Terahertz Carrier Relaxation in Graphene Oxide: Observation of Enhanced Auger Recombination Due to Defect Saturation. ACS Nano, 2014, 8, 2486-2494.	7.3	33
68	Anisotropy Modeling of Terahertz Metamaterials: Polarization Dependent Resonance Manipulation by Meta-Atom Cluster. Scientific Reports, 2014, 4, 5217.	1.6	16
69	Ultrafast Spin-Resolved Spectroscopy Reveals Dominant Exciton Dynamics in Conducting Polymer Polyaniline. Journal of Physical Chemistry C, 2013, 117, 20371-20375.	1.5	8
70	Ultrafast zero balance of the oscillator-strength sum rule in graphene. Scientific Reports, 2013, 3, 2663.	1.6	8
71	Ultrafast refractive index control of terahertz graphene metamaterials. , 2013, , .		0
72	Terahertz time-domain measurement of non-Drude conductivity in silver nanowire thin films for transparent electrode applications. Applied Physics Letters, 2013, 102, 011109.	1.5	29

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73	Electromagnetic dipole coupling mechanism in layered terahertz metamaterials. Optics Express, 2013, 21, 16975.	1.7	4
74	Exciton dynamics in atomically thin MoS<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mn>2</mml:mn></mml:msub></mml:math>: Interexcitonic interaction and broadening kinetics. Physical Review B, 2013, 88, .	1.1	173
75	Gate-Controlled Nonlinear Conductivity of Dirac Fermion in Graphene Field-Effect Transistors Measured by Terahertz Time-Domain Spectroscopy. Nano Letters, 2012, 12, 551-555.	4.5	161
76	Ultrafast Rabi flopping and coherent pulse propagation in a quantum cascade laser. Nature Photonics, 2010, 4, 706-710.	15.6	58
77	Femtosecond dynamics of resonant tunneling and superlattice relaxation in quantum cascade lasers. Applied Physics Letters, 2008, 92, 122114.	1.5	27
78	Gain Recovery Dynamics and Photon-Driven Transport in Quantum Cascade Lasers. Physical Review Letters, 2008, 100, 167401.	2.9	85
79	Time-domain upconversion measurements of group-velocity dispersion in quantum cascade lasers. Optics Express, 2007, 15, 15898.	1.7	23
80	Ultrafast Electronic Dynamics in Unipolar n-Doped InGaAsâ€“GaAs Self-Assembled Quantum Dots. IEEE Journal of Quantum Electronics, 2007, 43, 486-496.	1.0	7