Hyoung Joon Choi

List of Publications by Year in descending order

102 papers	10,012 citations	66315 42 h-index	33869 99 g-index
107 all docs	107 docs citations	107 times ranked	11865 citing authors

#	Article	IF	Citations
1	Crossed Nanotube Junctions. Science, 2000, 288, 494-497.	6.0	1,135
2	The origin of the anomalous superconducting properties of MgB2. Nature, 2002, 418, 758-760.	13.7	867
3	Observation of tunable band gap and anisotropic Dirac semimetal state in black phosphorus. Science, 2015, 349, 723-726.	6.0	749
4	Mechanically controlled binary conductance switching of a single-molecule junction. Nature Nanotechnology, 2009, 4, 230-234.	15.6	609
5	Anomalous Behaviors of Visible Luminescence from Graphene Quantum Dots: Interplay between Size and Shape. ACS Nano, 2012, 6, 8203-8208.	7.3	563
6	Defects, Quasibound States, and Quantum Conductance in Metallic Carbon Nanotubes. Physical Review Letters, 2000, 84, 2917-2920.	2.9	522
7	Amineâ^'Gold Linked Single-Molecule Circuits:â€‰ Experiment and Theory. Nano Letters, 2007, 7, 3477-3482.	4.5	447
8	Broken symmetry and pseudogaps in ropes of carbon nanotubes. Nature, 1998, 391, 466-468.	13.7	348
9	Origin of Anomalous Electronic Structures of Epitaxial Graphene on Silicon Carbide. Physical Review Letters, 2008, 100, 176802.	2.9	347
10	First-principles calculation of the superconducting transition inMgB2within the anisotropic Eliashberg formalism. Physical Review B, 2002, 66, .	1.1	323
11	Graphyne: Hexagonal network of carbon with versatile Dirac cones. Physical Review B, 2012, 86, .	1.1	307
12	Ab initiopseudopotential method for the calculation of conductance in quantum wires. Physical Review B, 1999, 59, 2267-2275.	1.1	231
13	Conductance and Geometry of Pyridine-Linked Single-Molecule Junctions. Journal of the American Chemical Society, 2010, 132, 6817-6821.	6.6	186
14	Length Dependence of Conductance in Aromatic Single-Molecule Junctions. Nano Letters, 2009, 9, 3949-3953.	4.5	151
15	Chalcogen-Height Dependent Magnetic Interactions and Magnetic Order Switching in<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mi>FeSe</mml:mi><mml:mi>x</mml:mi></mml:msub><mml:msub><mml:mi>Te</mml:mi><mml:mi> Physical Review Letters, 2010, 104, 057003.	2.9	131
16	Chiral Orbital-Angular Momentum in the Surface States of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mi>Bi</mml:mi><mml:mn>2</mml:mn></mml:msub><mml:msub><mml:mi>Se</mml:mi><mml:mn Physical Review Letters, 2012, 108, 046805.	2.9	127
17	Homogeneous 2D MoTe₂ pâ€“n Junctions and CMOS Inverters formed by Atomicâ€Layerâ€Depositionâ€Induced Doping. Advanced Materials, 2017, 29, 1701798.	11.1	117
18	Strong electron-phonon coupling, electron-hole asymmetry, and nonadiabaticity in magic-angle twisted bilayer graphene. Physical Review B, 2018, 98, .	1.1	116

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19	Band Structure and Fermi Surface of Electron-Doped C60 Monolayers. Science, 2003, 300, 303-307.	6.0	102
20	Electronic Energy Levels of Weakly Coupled Nanostructures:<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mi mathvariant="normal">C</mml:mi><mml:mn>60</mml:mn></mml:msub></mml:math>-Metal Interfaces. Physical Review Letters, 2008, 101, 026804.	2.9	102
21	Structural Deformation and Intertube Conductance of Crossed Carbon Nanotube Junctions. Physical Review Letters, 2001, 86, 688-691.	2.9	98
22	Emergence of Two-Dimensional Massless Dirac Fermions, Chiral Pseudospins, and Berryâ€™s Phase in Potassium Doped Few-Layer Black Phosphorus. Nano Letters, 2015, 15, 7788-7793.	4.5	98
23	Graphene Versus Ohmic Metal as Sourceâ€Drain Electrode for MoS₂ Nanosheet Transistor Channel. Small, 2014, 10, 2356-2361.	5.2	89
24	Electrical Switching in Metallic Carbon Nanotubes. Physical Review Letters, 2005, 95, 216602.	2.9	88
25	Thermopower of Amineâ^'Gold-Linked Aromatic Molecular Junctions from First Principles. ACS Nano, 2011, 5, 551-557.	7.3	87
26	Anisotropic Eliashberg theory of MgB2: Tc, isotope effects, superconducting energy gaps, quasiparticles, and specific heat. Physica C: Superconductivity and Its Applications, 2003, 385, 66-74.	0.6	85
27	Nanosheet thickness-modulated MoS₂dielectric property evidenced by field-effect transistor performance. Nanoscale, 2013, 5, 548-551.	2.8	83
28	Metal Semiconductor Field-Effect Transistor with MoS₂/Conducting NiO_x van der Waals Schottky Interface for Intrinsic High Mobility and Photoswitching Speed. ACS Nano, 2015, 9, 8312-8320.	7.3	82
29	Thickness dependence of work function, ionization energy, and electron affinity of Mo and W dichalcogenides from DFT and GW calculations. Physical Review B, 2021, 103, .	1.1	80
30	Identifying Defects in Nanoscale Materials. Physical Review Letters, 2004, 93, 196803.	2.9	78
31	Variations of ferroelectric off-centering distortion and<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mn>3</mml:mn><mml:mi>d</mml:mi><mml:mtext>â^'</mml:mtext><mml:mn>4</mml:mn><mml:mi mixing in La-doped<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mtext>BiFeO</mml:mtext></mml:mrow><mml:mn>3</mml:mn></mml:msub></mml:mrow></mml:math>. Physical Review B, 2010, 82, .	1.1	74
32	Enhanced device performances of WSe₂â€“MoS₂ van der Waals junction pâ€“n diode by fluoropolymer encapsulation. Journal of Materials Chemistry C, 2015, 3, 2751-2758.	2.7	74
33	Quantitative Currentâ€“Voltage Characteristics in Molecular Junctions from First Principles. Nano Letters, 2012, 12, 6250-6254.	4.5	72
34	Two-Dimensional Dirac Fermions Protected by Space-Time Inversion Symmetry in Black Phosphorus. Physical Review Letters, 2017, 119, 226801.	2.9	72
35	Broken symmetry and pseudogaps in ropes of carbon nanotubes. Physical Review B, 1999, 60, 7899-7904.	1.1	67
36	Electronic structure of detwinned BaFe<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow /><mml:mrow><mml:mn>2</mml:mn></mml:mrow></mml:msub></mml:mrow></mml:math>As<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow /><mml:mrow><mml:mn>2</mml:mn></mml:mro	1.1	56

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37	Intrinsic band gap and electrically tunable flat bands in twisted double bilayer graphene. Physical Review B, 2019, 100, .	1.1	55
38	First-principles scattering-state approach for nonlinear electrical transport in nanostructures. Physical Review B, 2007, 76, .	1.1	53
39	Î³-GeSe: A New Hexagonal Polymorph from Group IVâ€“VI Monochalcogenides. Nano Letters, 2021, 21, 4305-4313.	4.5	52
40	Rhombohedralâ€“orthorhombic morphotropic phase boundary in BiFeO3-based multiferroics: first-principles prediction. Journal of Materials Chemistry, 2012, 22, 1667-1672.	6.7	51
41	In-plane strain control of the magnetic remanence and cation-charge redistribution inCoFe2O4thin film grown on a piezoelectric substrate. Physical Review B, 2010, 81, .	1.1	47
42	Possible explanation for the conductance of a single quantum unit in metallic carbon nanotubes. Physical Review B, 1999, 60, R14009-R14011.	1.1	42
43	Low-velocity anisotropic Dirac fermions on the side surface of topological insulators. Physical Review B, 2011, 84, .	1.1	41
44	First-principles study of perpendicular magnetic anisotropy in CoFe/MgO and CoFe/Mg<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mn>3</mml:mn></mml:msub></mml:math>B<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>O<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:	1.1	37
45	Prediction of superconducting properties of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mtext>CaB</mml:mtext></mml:mrow><mml:mn>2</mml:mn></mml:msub></mml:mrow></mml:math>in the anisotropic Eliashberg theory. Physical Review B, 2009, 80, .	1.1	35
46	<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mn>4</mml:mn><mml:mi>d</mml:mi><mml:mtext mathvariant="normal">â^’</mml:mtext><mml:mn>5</mml:mn><mml:mi>p</mml:mi></mml:math>Orbital Mixing and Asymmetric In<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mn>4</mml:mn><mml:mi>d</mml:mi><mml:mo>â€“</mml:mo><mml:mi mathvariant="normal">O</mml:mi></mml:math><mml:math xmlns:mml="http://www.w3.org/1998/Math/	2.9	35
47	Dichotomy of Electron-Phonon Coupling in Graphene MoirÃ© Flat Bands. Physical Review Letters, 2021, 127, 167001.	2.9	35
48	Orientation-DependentC60Electronic Structures Revealed by Photoemission Spectroscopy. Physical Review Letters, 2004, 93, 197601.	2.9	33
49	Work Function Tuning in Two-Dimensional MoS2 Field-Effect-Transistors with Graphene and Titanium Source-Drain Contacts. Scientific Reports, 2017, 7, 45546.	1.6	33
50	Strong Orbital-Dependentd-Band Hybridization and Fermi-Surface Reconstruction in MetallicCa2â^’xSrxRuO4. Physical Review Letters, 2007, 98, 226401.	2.9	32
51	Effect of Linear Density of States on the Quasiparticle Dynamics and Small Electron-Phonon Coupling in Graphite. Physical Review Letters, 2008, 100, 016802.	2.9	29
52	Band-gap opening in graphene: A reverse-engineering approach. Physical Review B, 2015, 92, .	1.1	28
53	Exact solutions to the tight-binding model for the conductance of carbon nanotubes. Solid State Communications, 1999, 111, 385-390.	0.9	27
54	Anisotropic Eliashberg theory and the two-band model for the superconducting properties ofMgB2. Physical Review B, 2006, 73, .	1.1	27

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55	Percolation of carriers through low potential channels in thickAlxGa1âˆ’xAs (x<0.35) barriers. Physical Review B, 1996, 54, 14580-14588.	1.1	26
56	Intrinsic Correlation between Electronic Structure and Degradation: From Fewâ€Layer to Bulk Black Phosphorus. Angewandte Chemie - International Edition, 2019, 58, 3754-3758.	7.2	26
57	Single-Impurity Scattering and Carrier Mobility in Doped Ge/Si Coreâˆ’Shell Nanowires. Nano Letters, 2010, 10, 2207-2210.	4.5	25
58	Role of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>d</mml:mi></mml:math>orbitals in the Rashba-type spin splitting for noble-metal surfaces. Physical Review B, 2012, 86, .	1.1	25
59	Orbital angular momentum analysis for giant spin splitting in solids and nanostructures. Scientific Reports, 2017, 7, 2024.	1.6	25
60	Dirac-semimetal phase diagram of two-dimensional black phosphorus. 2D Materials, 2017, 4, 025071.	2.0	24
61	Tunneling properties versus electronic structures in Si/SiO<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>/Si junctions from first principles. Physical Review B, 2013, 88, .	1.1	21
62	Direct Momentum-Resolved Observation of One-Dimensional Confinement of Externally Doped Electrons within a Single Subnanometer-Scale Wire. Nano Letters, 2015, 15, 281-288.	4.5	20
63	Antiferromagnetâ€Based Spintronic Functionality by Controlling Isospin Domains in a Layered Perovskite Iridate. Advanced Materials, 2018, 30, e1805564.	11.1	20
64	Switching Magnetism and Superconductivity with Spin-Polarized Current in Iron-Based Superconductor. Physical Review Letters, 2017, 119, 227001.	2.9	20
65	Reply to â€œComment on â€˜First-principles calculation of the superconducting transition inMgB2within the anisotropic Eliashberg formalismâ€™ â€. Physical Review B, 2004, 69, .	1.1	19
66	Wafer-scale single-domain-like graphene by defect-selective atomic layer deposition of hexagonal ZnO. Nanoscale, 2015, 7, 17702-17709.	2.8	19
67	Anisotropic Eliashberg theory for superconductivity in compressed and doped<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mtext>MgB</mml:mtext></mml:mrow><mml:mn>2</mml:mn></mml:msub></mml:mrow></mml:math> Quasiparticle band structures of bulk and few-layer <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi mathvariant="normal">PdSe</mml:mi><mml:mn>2</mml:mn></mml:msub></mml:math> from first-principles <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi>G</mml:mi><mml:mi>W</mml:mi></mml:mrow></mml:math> calculations. Physical Review B, 2021, 103, .	1.1	17
68		1.1	17
69	Raman spectroscopic evidence of impurityâ€induced structural distortion in SmB₆. Journal of Raman Spectroscopy, 2019, 50, 1661-1671.	1.2	16
70	Quasiparticle band structures, spontaneous polarization, and spin-splitting in noncentrosymmetric few-layer and bulk Î³-GeSe. Journal of Materials Chemistry C, 2021, 9, 9683-9691.	2.7	15
71	Going beyond the mean-field approximations of alloys and alloy superlattices: a few puzzles solved?. Journal of the Optical Society of America B: Optical Physics, 1996, 13, 1210.	0.9	14
72	High-resolution angle-resolved photoemission studies of quasiparticle dynamics in graphite. Physical Review B, 2009, 79, .	1.1	14

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73	Dominant role of local-moment interactions in the magnetic ordering of iron pnictide superconductors: A comparative study of arsenides and antimonides from first principles. Physical Review B, 2009, 80, .	1.1	13
74	Contact dependence of the conductance of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mi mathvariant="normal">H</mml:mi><mml:mn>2</mml:mn></mml:msub></mml:math>molecular junctions from first principles. Physical Review B, 2008, 77, .	1.1	12
75	Stability, efficiency, and mechanism of <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi>n</mml:mi></mml:math> -type doping by hydrogen adatoms in two-dimensional transition metal dichalcogenides. Physical Review B, 2019, 100, .	1.1	12
76	Microscopic and electronic roles of B in CoFeB-based magnetic tunnel junctions. Journal of Materials Chemistry, 2011, 21, 14967.	6.7	11
77	Electronic structure of C and N co-doped TiO2: A combined hard x-ray photoemission spectroscopy and density functional theory study. Applied Physics Letters, 2014, 105, .	1.5	11
78	Impact of Hâ€Doping on nâ€Type TMD Channels for Lowâ€Temperature Bandâ€Like Transport. Small, 2019, 15, e1901793.	5.2	11
79	Enhanced spin-density wave in LaFeSbO from first principles. Physical Review B, 2008, 78, .	1.1	10
80	Field-induced recovery of massless Dirac fermions in epitaxial graphene on SiC. Carbon, 2011, 49, 2300-2305.	5.4	9
81	Interband Transitions in Monolayer and Few-Layer WSe₂ Probed Using Photoexcited Charge Collection Spectroscopy. ACS Applied Materials & Interfaces, 2018, 10, 20213-20218.	4.0	8
82	First-principles calculation of atomic force in the<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mtext>LSDA</mml:mtext><mml:mo>+</mml:mo><mml:mi>U</mml:mi></mml:mrow></mml:math> Physical Review B, 2009, 80, .	1.1	7
83	Fermi surfaces and quantum oscillations in the underdoped high-Tcsuperconductors YBa2Cu3O6.5and YBa2Cu4O8. Physical Review B, 2011, 84, .	1.1	7
84	Effects of interfacial suboxides and dangling bonds on tunneling current through nanometer-thick SiO<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>layers. Physical Review B, 2011, 84, .	1.1	7
85	Effect of Diffused B During Annealing on the Electronic Structure of the MgO Barrier in CoFeB/MgO/CoFeB Magnetic Tunnel Junctions. Applied Physics Express, 2012, 5, 033001.	1.1	7
86	Role of Electric Fields on Enhanced Electron Correlation in Surface-Doped FeSe. Physical Review Letters, 2019, 122, 046401.	2.9	7
87	Nanometer-Scale Loop Currents and Induced Magnetic Dipoles in Carbon Nanotubes with Defects. Nano Letters, 2011, 11, 1418-1422.	4.5	6
88	Intrinsic Correlation between Electronic Structure and Degradation: From Fewâ€Layer to Bulk Black Phosphorus. Angewandte Chemie, 2019, 131, 3794-3798.	1.6	6
89	Single-Crystalline Metallic Films Induced by van der Waals Epitaxy on Black Phosphorus. Chemistry of Materials, 2021, 33, 3593-3601.	3.2	6
90	Time-resolved energy transduction in a quantum capacitor. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 13973-13977.	3.3	5

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91	Minimal single-particle Hamiltonian for charge carriers in epitaxial graphene on 4H-SiC(0001): Broken-symmetry states at Dirac points. Solid State Communications, 2013, 175-176, 83-89.	0.9	5
92	Anisotropic pseudospin tunneling in two-dimensional black phosphorus junctions. 2D Materials, 2021, 8, 035024.	2.0	5
93	Low-energy structures of K atoms in expandedK3C60monolayers:Ab initiopseudopotential density-functional calculations. Physical Review B, 2008, 77, .	1.1	3
94	InnenrÃ¼cktitelbild: Intrinsic Correlation between Electronic Structure and Degradation: From Fewâ€Layer to Bulk Black Phosphorus (Angew. Chem. 12/2019). Angewandte Chemie, 2019, 131, 4107-4107.	1.6	3
95	Tunneling Properties of the Charge Carriers through Sub-2-nm-Thick Oxide in Ge/a - GeO2/Ge Structures Using the First-Principles Scattering-State Method. Physical Review Applied, 2019, 11, .	1.5	3
96	Anomalous real space charge transfer through thick barriers in asymmetric double quantum wells: AlxGa1âˆ’xAs as a percolating barrier. Solid State Communications, 1996, 100, 231-235.	0.9	2
97	Thick AlxGa1âˆ’xAs: An intrinsically percolating barrier owing to its microscopic structural inhomogeneity. Applied Physics Letters, 1996, 69, 2513-2515.	1.5	2
98	Publisher's Note: Graphyne: Hexagonal network of carbon with versatile Dirac cones [Phys. Rev. B86, 115435 (2012)]. Physical Review B, 2013, 87, .	1.1	2
99	The Role of Atomic Hydrogen in Ge/Si Coreâ€“Shell Nanowires. Journal of Physical Chemistry C, 2014, 118, 20710-20715.	1.5	2
100	Causal optimization method for imaginary-time Green's functions in interacting electron systems. Physical Review B, 2021, 104, .	1.1	2
101	Antiferromagnetic exchange interactions among dopant electrons in Si nanowires. Physical Review B, 2014, 90, .	1.1	1
102	First-principles calculation of stress tensor in the LSDA+U formalism. Physical Review B, 2016, 94, .	1.1	0