Ji-Sang Park

List of Publications by Year
in descending order

72 papers	4,686 citations	186265 28 h-index	98798 67 g-index
75 all docs	75 docs citations	75 times ranked	6908 citing authors

#	Article	IF	Citations
1	Stabilizing Perovskite Structures by Tuning Tolerance Factor: Formation of Formamidinium and Cesium Lead Iodide Solid-State Alloys. Chemistry of Materials, 2016, 28, 284-292.	6.7	1,606
2	Engineering Solar Cell Absorbers by Exploring the Band Alignment and Defect Disparity: The Case of Cuâ€• and Agâ€Based Kesterite Compounds. Advanced Functional Materials, 2015, 25, 6733-6743.	14.9	284
3	Enhanced Charge Transport in 2D Perovskites via Fluorination of Organic Cation. Journal of the American Chemical Society, 2019, 141, 5972-5979.	13.7	274
4	Performance-limiting nanoscale trap clusters at grain junctions in halide perovskites. Nature, 2020, 580, 360-366.	27.8	255
5	Electronic Structure and Optical Properties of Î±-CH₃NH₃PbBr₃ Perovskite Single Crystal. Journal of Physical Chemistry Letters, 2015, 6, 4304-4308.	4.6	136
6	Identification of Killer Defects in Kesterite Thin-Film Solar Cells. ACS Energy Letters, 2018, 3, 496-500.	17.4	130
7	300% Enhancement of Carrier Mobility in Uniaxialâ€Oriented Perovskite Films Formed by Topotacticâ€Oriented Attachment. Advanced Materials, 2017, 29, 1606831.	21.0	120
8	Accumulation of Deep Traps at Grain Boundaries in Halide Perovskites. ACS Energy Letters, 2019, 4, 1321-1327.	17.4	117
9	Naâ€Diffusion Enhanced pâ€type Conductivity in Cu(In,Ga)Se₂: A New Mechanism for Efficient Doping in Semiconductors. Advanced Energy Materials, 2016, 6, 1601191.	19.5	115
10	Review on first-principles study of defect properties of CdTe as a solar cell absorber. Semiconductor Science and Technology, 2016, 31, 083002.	2.0	109
11	Effect of oxygen deficiency on the excited state kinetics of WO₃ and implications for photocatalysis. Chemical Science, 2019, 10, 5667-5677.	7.4	97
12	In situ observation of picosecond polaron self-localisation in Î±-Fe2O3 photoelectrochemical cells. Nature Communications, 2019, 10, 3962.	12.8	93
13	Sustainable lead management in halide perovskite solar cells. Nature Sustainability, 2020, 3, 1044-1051.	23.7	87
14	Fast self-diffusion of ions in CH₃NH₃PbI₃: the interstiticaly mechanism versus vacancy-assisted mechanism. Journal of Materials Chemistry A, 2016, 4, 13105-13112.	10.3	74
15	Tuning the Fermi level beyond the equilibrium doping limit through quenching: The case of CdTe. Physical Review B, 2014, 90, .	3.2	66
16	Effect of hydrogen incorporation on the negative bias illumination stress instability in amorphous In-Ga-Zn-O thin-film-transistors. Journal of Applied Physics, 2013, 113, .	2.5	62
17	Transition metal-substituted lead halide perovskite absorbers. Journal of Materials Chemistry A, 2017, 5, 3578-3588.	10.3	62
18	Enhanced p-type dopability of P and As in CdTe using non-equilibrium thermal processing. Journal of Applied Physics, 2015, 118, .	2.5	60

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19	Electronic Structure of Oxygen Interstitial Defects in Amorphous In-Ga-Zn-O Semiconductors and Implications for Device Behavior. Physical Review Applied, 2015, 3, .	3.8	58
20	Self-regulation of charged defect compensation and formation energy pinning in semiconductors. Scientific Reports, 2015, 5, 16977.	3.3	56
21	Lone-pair effect on carrier capture in Cu₂ZnSnS₄solar cells. Journal of Materials Chemistry A, 2019, 7, 2686-2693.	10.3	55
22	Defects Responsible for the Hole Gas in Ge/Si Coreâ˜Shell Nanowires. Nano Letters, 2010, 10, 116-121.	9.1	49
23	Intrinsic doping limit and defect-assisted luminescence in Cs₄PbBr₆. Journal of Materials Chemistry A, 2019, 7, 20254-20261.	10.3	48
24	First-principles study of roles of Cu and Cl in polycrystalline CdTe. Journal of Applied Physics, 2016, 119, .	2.5	44
25	Comprehensive Computational Study of Partial Lead Substitution in Methylammonium Lead Bromide. Chemistry of Materials, 2019, 31, 3599-3612.	6.7	37
26	First-principles multiple-barrier diffusion theory: The case study of interstitial diffusion in CdTe. Physical Review B, 2015, 91, .	3.2	33
27	Stability and electronic structure of the low-Î£grain boundaries in CdTe: a density functional study. New Journal of Physics, 2015, 17, 013027.	2.9	31
28	Effects of deposition termination on Cu2ZnSnSe4 device characteristics. Thin Solid Films, 2015, 582, 184-187.	1.8	29
29	Modeling Grain Boundaries in Polycrystalline Halide Perovskite Solar Cells. Annual Review of Condensed Matter Physics, 2021, 12, 95-109.	14.5	25
30	Quick-start guide for first-principles modelling of point defects in crystalline materials. JPhys Energy, 2020, 2, 036001.	5.3	22
31	Defect properties of Sb- and Bi-doped CuInSe2: The effect of the deep lone-pair s states. Applied Physics Letters, 2014, 105, .	3.3	21
32	Ordering-induced direct-to-indirect band gap transition in multication semiconductor compounds. Physical Review B, 2015, 91, .	3.2	20
33	Stability and Segregation of B and P Dopants in Si/SiO₂ Coreâ€“Shell Nanowires. Nano Letters, 2012, 12, 5068-5073.	9.1	19
34	Electronic Structure and Optical Properties of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mi>Cu</mml:mi></mml:mrow><mml:mrow><mml:mn>2</mml:mn></mml:mrow></mml:msub><mml:mrow><mml:mi>Sn</mml:mi></mml:mrow><mml:msub><mml:mrow><mml:mi>S</mml:mi></mml:mrow><mml:mrow><mml:mn>3</mml:mn></mml:mrow></mml:msub></mml:mrow></mml:math> First-Principles Calculations and Vacuum-Ultraviolet Spectroscopic Ellipsometric Studies. Physical Review Applied, 2015, 4, .	3.8	19
35	The Role of Water in the Reversible Optoelectronic Degradation of Hybrid Perovskites at Low Pressure. Journal of Physical Chemistry C, 2017, 121, 25659-25665.	3.1	19
36	Role of electron-phonon coupling and thermal expansion on band gaps, carrier mobility, and interfacial offsets in kesterite thin-film solar cells. Applied Physics Letters, 2018, 112, .	3.3	19

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37	Defect Energetics in Pseudo-Cubic Mixed Halide Lead Perovskites from First-Principles. Journal of Physical Chemistry C, 2020, 124, 16729-16738.	3.1	19
38	Open-circuit voltage deficit in Cu2ZnSnS4 solar cells by interface bandgap narrowing. Applied Physics Letters, 2018, 113, 212103.	3.3	16
39	Opposing effects of stacking faults and antisite domain boundaries on the conduction band edge in kesterite quaternary semiconductors. Physical Review Materials, 2018, 2, .	2.4	15
40	Embrace your defects. Nature Energy, 2019, 4, 95-96.	39.5	13
41	Period-doubling reconstructions of semiconductor partial dislocations. NPG Asia Materials, 2015, 7, e216-e216.	7.9	12
42	Mechanism of Na accumulation at extended defects in Si from first-principles. Journal of Applied Physics, 2018, 123, 161560.	2.5	12
43	Crystal Engineering of Bi₂WO₆ to Polar Aurivillius-Phase Oxyhalides. Journal of Physical Chemistry C, 2019, 123, 29155-29161.	3.1	12
44	Quick-start guide for first-principles modelling of semiconductor interfaces. JPhys Energy, 2019, 1, 016001.	5.3	12
45	Hexagonal Stacking Faults Act as Hole-Blocking Layers in Lead Halide Perovskites. ACS Energy Letters, 2020, 5, 2231-2233.	17.4	12
46	Wild band edges: The role of bandgap grading and band-edge fluctuations in high-efficiency chalcogenide devices. , 2016, , .		11
47	Evolutionary exploration of polytypism in lead halide perovskites. Chemical Science, 2021, 12, 12165-12173.	7.4	11
48	Diffusion and Stability of Hydrogen in Mg-Doped GaN: A Density Functional Study. Applied Physics Express, 2012, 5, 065601.	2.4	10
49	Examination of high-throughput hybrid calculations using coarser reciprocal space meshes. Current Applied Physics, 2020, 20, 379-383.	2.4	10
50	Hydrothermal Synthesis in Gap: Conformal Deposition of Textured Hematite Thin Films for Efficient Photoelectrochemical Water Splitting. ACS Applied Materials & Interfaces, 2022, , .	8.0	10
51	Effect of intermixing at CdS/CdTe interface on defect properties. Applied Physics Letters, 2016, 109, 042105.	3.3	9
52	Polymerization of defect states at dislocation cores in InAs. Journal of Applied Physics, 2016, 119, 045706.	2.5	8
53	Cost-Effective High-Throughput Calculation Based on Hybrid Density Functional Theory: Application to Cubic, Double, and Vacancy-Ordered Halide Perovskites. Journal of Physical Chemistry Letters, 2021, 12, 7885-7891.	4.6	8
54	Stability of Donor-Pair Defects in Si_{1â€“x}Ge_x Alloy Nanowires. Journal of Physical Chemistry C, 2011, 115, 10345-10350.	3.1	7

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55	Comparison study of exchange-correlation functionals on prediction of ground states and structural properties. Current Applied Physics, 2021, 22, 61-64.	2.4	7
56	Stabilization and self-passivation of symmetrical grain boundaries by mirror symmetry breaking. Physical Review Materials, 2019, 3, .	2.4	7
57	Stability and electronic properties of planar defects in quaternary I2-II-IV-VI4 semiconductors. Journal of Applied Physics, 2018, 124, 165705.	2.5	5
58	Effect of chemical substitution on polytypes and extended defects in chalcopyrites: A density functional theory study. Journal of Applied Physics, 2021, 129, 025703.	2.5	5
59	Cost-Effective Hybrid Density Functional Theory Calculation of Three-Dimensional Band Structure and Search of Band Edge Positions. Journal of Physical Chemistry A, 2021, 125, 8514-8518.	2.5	5
60	Stabilization and Self-Passivation of Grain Boundaries in Halide Perovskite by Rigid Body Translation. Journal of Physical Chemistry Letters, 2022, 13, 4628-4633.	4.6	5
61	Finite-size supercell correction scheme for charged defects in one-dimensional systems. Physical Review B, 2014, 90, .	3.2	4
62	First-principles Study of Intrinsic and Extrinsic Point Defects in Lead-Based Hybrid Perovskites. , 2018, , .		3
63	Hole Gas Induced by Defects in Geâˆ•Si Core-Shell Nanowires. , 2011, , .		2
64	Nonisovalent Si-III-V and Si-II-VI alloys: Covalent, ionic, and mixed phases. Physical Review B, 2017, 96, .	3.2	2
65	The Holey Grail of Transparent Electronics. Matter, 2020, 3, 604-606.	10.0	2
66	Calculation of the Stacking Fault Energy by Using the Anisotropic Next-Nearest Neighbor Ising Model. New Physics: Sae Mulli, 2020, 70, 630-636.	0.1	2
67	Hybrid density functional theory calculation of orthorhombic CsPbI3â^'3Br3 and CsPbBr3â^'3Cl3. Current Applied Physics, 2022, 36, 93-96.	2.4	2
68	Site preference of Mg acceptors and improvement of p-type doping efficiency in nitride alloys. Journal of Physics Condensed Matter, 2013, 25, 245801.	1.8	1
69	Stability and electronic structure of stacking faults and polytypes in $${hbox {ZnSnN}_2}$$, $${hbox {ZnGeN}_2}$$, and $${hbox {ZnSiN}_2}$$. Journal of the Korean Physical Society, 2021, 79, 309-314.	0.7	1
70	Screening of II-IV-V2 Materials for Photovoltaic Applications Based on Density Functional Theory Calculations. Crystals, 2021, 11, 883.	2.2	1
71	Cost-effective calculation of defects in Si using hybrid density functional with downsampled reciprocal grids. Current Applied Physics, 2022, 39, 51-55.	2.4	1
72	Search of chalcopyrite materials based on hybrid density functional theory calculation. Journal of Physics Communications, 2022, 6, 065001.	1.2	1