Heechae Choi

List of Publications by Year in Descending Order

93 papers	1,648 citations	21 h-index	38 g-index
98 ext. papers	2,063 ext. citations	7.4 avg, IF	4.89 L-index

#	Paper	IF	Citations
93	Alkaline oxygen evolution: exploring synergy between fcc and hcp cobalt nanoparticles entrapped in N-doped graphene. *Materials Today Chemistry*, **2022**, 23, 100668	6.2	3
92	Fluorine-doped graphene oxide prepared by direct plasma treatment for supercapacitor application. *Chemical Engineering Journal*, **2022**, 428, 132086	14.7	5
91	Rational nanopositioning of homogeneous amorphous phase on crystalline tungsten oxide for boosting solar water oxidation. *Chemical Engineering Journal*, **2022**, 438, 135532	14.7	3
90	Near surface electric field enhancement: Pyridinic-N rich few-layer graphene encapsulating cobalt catalysts as highly active and stable bifunctional ORR/OER catalyst for seawater batteries. *Applied Catalysis B: Environmental*, **2022**, 310, 121361	21.8	3
89	Chemical Processing of Mixed-Cation Hybrid Perovskites: Stabilizing Effects of Configurational Entropy **2021**, 1-31		0
88	Defect engineering of TiNb2O7 compound for enhanced Li-ion battery anode performances. *Electrochimica Acta*, **2021**, 139603	6.7	2
87	Theoretical Approach toward Optimum Anion-Doping on MXene Catalysts for Hydrogen Evolution Reaction: an Ab Initio Thermodynamics Study. *ACS Applied Materials & Interfaces*, **2021**, 13, 37035-37043	9.5	6
86	Electric field-driven one-step formation of vertical p□ junction TiO2 nanotubes exhibiting strong photocatalytic hydrogen production. *Journal of Materials Chemistry A*, **2021**, 9, 2239-2247	13	6
85	Revisiting surface chemistry in TiO2: A critical role of ionic passivation for pH-independent and anti-corrosive photoelectrochemical water oxidation. *Chemical Engineering Journal*, **2021**, 407, 126929	14.7	7
84	Ultrasonic Plasma Engineering Toward Facile Synthesis of Single-Atom M-N/N-Doped Carbon (M = Fe, Co) as Superior Oxygen Electrocatalyst in Rechargeable Zinc-Air Batteries. *Nano-Micro Letters*, **2021**, 13, 60	19.5	26
83	Triple-Vertex Linkage of (BO)-Tetrahedra in a Borosulfate: Synthesis, Crystal Structure, and Quantum-Chemical Investigation of Sr[B O(SO) (SO H)]. *Angewandte Chemie - International Edition*, **2021**, 60, 19740-19743	16.4	3
82	C-doped ZnS-ZnO/Rh nanosheets as multijunctioned photocatalysts for effective H2 generation from pure water under solar simulating light. *Applied Catalysis B: Environmental*, **2021**, 297, 120473	21.8	10
81	Partial Dehydration in Hydrated Tungsten Oxide Nanoplates Leads to Excellent and Robust Bifunctional Oxygen Reduction and Hydrogen Evolution Reactions in Acidic Media. *ACS Sustainable Chemistry and Engineering*, **2020**, 8, 9507-9518	8.3	13
80	Electronic structure, thermodynamic stability and high-temperature sensing properties of Er-□SiAlON ceramics. *Scientific Reports*, **2020**, 10, 4952	4.9	8
79	Understanding the interplay of stability and efficiency in A-site engineered lead halide perovskites. *APL Materials*, **2020**, 8, 070901	5.7	35
78	Insights on boosting oxygen evolution reaction performance via boron incorporation into nitrogen-doped carbon electrocatalysts. *Applied Surface Science*, **2020**, 528, 146979	6.7	11
77	Rationally designed CuSb1-xBixS2 as a promising photovoltaic material: Theoretical and experimental study. *Scripta Materialia*, **2020**, 179, 107-112	5.6	0

76	Manipulatable Interface Electric Field and Charge Transfer in a 2D/2D Heterojunction Photocatalyst via Oxygen Intercalation. *Catalysts*, **2020**, 10, 469	4	3
75	Self-assembled heterojunction of metal sulfides for improved photocatalysis. *Chemical Engineering Journal*, **2020**, 395, 125092	14.7	27
74	Chemical and structural engineering of transition metal boride towards excellent and sustainable hydrogen evolution reaction. *Nano Energy*, **2020**, 67, 104245	17.1	41
73	Shape change of submicron nickel particles under hydrogen and nickel chloride vapor. *Applied Surface Science*, **2020**, 509, 145274	6.7	3
72	Theoretical dopant screening and processing optimization for vanadium disulfide as cathode material for Li-air batteries: A density functional theory study. *Applied Surface Science*, **2020**, 508, 145276	6.7	7
71	ALD-assisted synthesis of V2O5 nanoislands on SnO2 nanowires for improving NO2 sensing performance. *Applied Surface Science*, **2020**, 509, 144821	6.7	12
70	Boosting nitrogen-doping and controlling interlayer spacing in pre-reduced graphene oxides. *Nano Energy*, **2020**, 78, 105286	17.1	11
69	Fundamental Understanding of the Formation Mechanism for Graphene Quantum Dots Fabricated by Pulsed Laser Fragmentation in Liquid: Experimental and Theoretical Insight. *Small*, **2020**, 16, e2003538	11	6
68	Mapping Point Defects of Brookite TiO2 for Photocatalytic Activity Beyond Anatase and P25. *Journal of Physical Chemistry C*, **2020**, 124, 10376-10384	3.8	5
67	Unsymmetrical Small Molecules for Broad-Band Photoresponse and Efficient Charge Transport in Organic Phototransistors. *ACS Applied Materials & Interfaces*, **2020**, 12, 25066-25074	9.5	14
66	Electrochemically activated cobalt nickel sulfide for an efficient oxygen evolution reaction: partial amorphization and phase control. *Journal of Materials Chemistry A*, **2019**, 7, 3592-3602	13	51
65	In situ reduction and exfoliation of g-C3N4 nanosheets with copious active sites via a thermal approach for effective water splitting. *Catalysis Science and Technology*, **2019**, 9, 1004-1012	5.5	23
64	Understanding of relationship between dopant and substitutional site to develop novel phase-change materials based on In3SbTe2. *Japanese Journal of Applied Physics*, **2019**, 58, SBBB02	1.4	6
63	Material design for Ge2Sb2Te5 phase-change material with thermal stability and lattice distortion. *Scripta Materialia*, **2019**, 170, 16-19	5.6	5
62	Advantageous crystalline□amorphous phase boundary for enhanced electrochemical water oxidation. *Energy and Environmental Science*, **2019**, 12, 2443-2454	35.4	172
61	Electronically-Coupled Phase Boundaries in □Fe2O3/Fe3O4 Nanocomposite Photoanodes for Enhanced Water Oxidation. *ACS Applied Nano Materials*, **2019**, 2, 334-342	5.6	23
60	Interface-Driven Phase Transition of Phase-Change Material. *Crystal Growth and Design*, **2019**, 19, 2123-2130	3.9	2
59	p-Type Conductivity of Hydrated Amorphous V2O5 and Its Enhanced Photocatalytic Performance in ZnO/V2O5/rGO. *ACS Applied Electronic Materials*, **2019**, 1, 1881-1889	4	5

58	Improving Electrochemical Pb Detection Using a Vertically Aligned 2D MoS Nanofilm. *Analytical Chemistry*, **2019**, 91, 11770-11777	7.8	32
57	Structural Evolutions of Vertically Aligned Two-Dimensional MoS2 Layers Revealed by in Situ Heating Transmission Electron Microscopy. *Journal of Physical Chemistry C*, **2019**, 123, 27843-27853	3.8	7
56	Electronically Double-Layered Metal Boride Hollow Nanoprism as an Excellent and Robust Water Oxidation Electrocatalysts. *Advanced Energy Materials*, **2019**, 9, 1803799	21.8	52
55	Laser-engineered oxygen vacancies for improving the NO2 sensing performance of SnO2 nanowires. *Journal of Materials Chemistry A*, **2019**, 7, 27205-27211	13	16
54	Unusual Na Ion Intercalation/Deintercalation in Metal-Rich CuS for Na-Ion Batteries. *ACS Nano*, **2018**, 12, 2827-2837	16.7	103
53	Parallelized Reaction Pathway and Stronger Internal Band Bending by Partial Oxidation of Metal Sulfide□raphene Composites: Important Factors of Synergistic Oxygen Evolution Reaction Enhancement. *ACS Catalysis*, **2018**, 8, 4091-4102	13.1	79
52	Hydrogen-free defects in hydrogenated black TiO. *Physical Chemistry Chemical Physics*, **2018**, 20, 19871-19876	3.8	3
51	Defect engineering toward strong photocatalysis of Nb-doped anatase TiO2: Computational predictions and experimental verifications. *Applied Catalysis B: Environmental*, **2017**, 206, 520-530	21.8	48
50	Dissimilar anisotropy of electron versus hole bulk transport in anatase TiO2: Implications for photocatalysis. *Physical Review B*, **2017**, 95,	3.3	17
49	Hierarchically assembled tubular shell-core-shell heterostructure of hybrid transition metal chalcogenides for high-performance supercapacitors with ultrahigh cyclability. *Nano Energy*, **2017**, 37, 15-23	17.1	60
48	Impact of Mg-Doping Site Control in the Performance of Li4Ti5O12 Li-Ion Battery Anode: First-Principles Predictions and Experimental Verifications. *Journal of Physical Chemistry C*, **2017**, 121, 14994-15001	3.8	12
47	Synergetic control of band gap and structural transformation for optimizing TiO2 photocatalysts. *Applied Catalysis B: Environmental*, **2017**, 210, 513-521	21.8	27
46	Unexpected Roles of Interstitially Doped Lithium in Blue and Green Light Emitting YO:Bi: A Combined Experimental and Computational Study. *Inorganic Chemistry*, **2017**, 56, 12139-12147	5.1	12
45	Few-layered metallic 1T-MoS/TiO with exposed (001) facets: two-dimensional nanocomposites for enhanced photocatalytic activities. *Physical Chemistry Chemical Physics*, **2017**, 19, 28207-28215	3.6	24
44	Effects of Y Dopant on Lattice Distortion and Electrical Properties of In3SbTe2 Phase-Change Material. *Physica Status Solidi - Rapid Research Letters*, **2017**, 11, 1700275	2.5	3
43	Effects of Y Dopant on Lattice Distortion and Electrical Properties of In3SbTe2 Phase-Change Material (Phys. Status Solidi RRL 11/2017). *Physica Status Solidi - Rapid Research Letters*, **2017**, 11, 1770356	2.5	
42	Effects of an in vacancy on local distortion of fast phase transition in Bi-doped In3SbTe2. *Journal of the Korean Physical Society*, **2017**, 71, 946-949	0.6	1
41	Microstructural control of new intercalation layered titanoniobates with large and reversible d-spacing for easy Na ion uptake. *Science Advances*, **2017**, 3, e1700509	14.3	32

40	Structural evolution of graphene in air at the electrical breakdown limit. *Carbon*, **2016**, 99, 466-471	10.4	11
39	Simultaneously Controllable Doping Sites and the Activity of a W□N Codoped TiO2 Photocatalyst. *ACS Catalysis*, **2016**, 6, 2745-2753	13.1	76
38	Correlated visible-light absorption and intrinsic magnetism of SrTiO3 due to oxygen deficiency: bulk or surface effect?. *Inorganic Chemistry*, **2015**, 54, 3759-65	5.1	17
37	Lattice Distortion in In3SbTe2 Phase Change Material with Substitutional Bi. *Scientific Reports*, **2015**, 5, 12867	4.9	12
36	Surface structure effect on the magnetic anisotropy of Co/Pd (001) thin film: A first principles study. *Thin Solid Films*, **2015**, 589, 252-257	2.2	2
35	Detecting gas molecules via atomic magnetization. *Dalton Transactions*, **2014**, 43, 13070-5	4.3	5
34	Roles of an oxygen Frenkel pair in the photoluminescence of Bi3+-doped Y2O3: computational predictions and experimental verifications. *Journal of Materials Chemistry C*, **2014**, 2, 6017-6024	7.1	20
33	TiO2 nanotube branched tree on a carbon nanofiber nanostructure as an anode for high energy and power lithium ion batteries. *Nano Research*, **2014**, 7, 491-501	10	38
32	In-situ Raman spectroscopy of current-carrying graphene microbridge. *Journal of Raman Spectroscopy*, **2014**, 45, 168-172	2.3	11
31	Magnetic Properties of Strained L10-ordered FePt and CoPt: An ab initio Study. *Applied Science and Convergence Technology*, **2014**, 23, 273-278	0.8	
30	Effect of nitrogen induced defects in Li dispersed graphene on hydrogen storage. *International Journal of Hydrogen Energy*, **2013**, 38, 4611-4617	6.7	50
29	Ferroelectric control of magnetic anisotropy of FePt/BaTiO3 magnetoelectric heterojunction: A density functional theory study. *Journal of Applied Physics*, **2013**, 113, 17C729	2.5	13
28	First-principles study on the atomic and electronic structures of graphene-protected magnetic Fe/Ni(111) thin film. *Current Applied Physics*, **2012**, 12, S37-S40	2.6	1
27	Si/Ge double-layered nanotube array as a lithium ion battery anode. *ACS Nano*, **2012**, 6, 303-9	16.7	209
26	Atomic behavior of carbon atoms on a Si removed 3C-SiC (111) surface during the early stage of epitaxial graphene growth. *Journal of Applied Physics*, **2012**, 111, 104324	2.5	4
25	Effects of uniaxial strains on the magnetic properties and the electronic structures of Fe/graphene system: An ab initio study. *Journal of Applied Physics*, **2012**, 111, 07C306	2.5	4
24	Magnesium-doped zinc oxide electrochemically grown on fluorine-doped tin oxide substrate. *Journal of Nanoscience and Nanotechnology*, **2012**, 12, 3677-81	1.3	8
23	Effects of biaxial strains on the magnetic properties of Co-graphene heterojunctions. *Journal of Applied Physics*, **2012**, 111, 113922	2.5	2

22	Magnetic Properties of Iron on Strained Graphene: Density Functional Theory Study. *Japanese Journal of Applied Physics*, **2012**, 51, 06FD13	1.4	
21	Magnetic anisotropy variation of Fe single atom on Ti/Al(001) surface by the change of Ti-Al surface phase. *Journal of Nanoscience and Nanotechnology*, **2011**, 11, 6364-7	1.3	1
20	Surface structures and magnetic anisotropies of a Fe/Pt (001) surface: An ab initio study. *Journal of Applied Physics*, **2011**, 109, 07B764	2.5	6
19	Interface-dependent magnetic anisotropy of Fe/BaTiO3: A first principles study. *Journal of Applied Physics*, **2011**, 109, 07D909	2.5	8
18	Surface diffusion coefficient determination by uniaxial tensile strain in Pb/Cu(111) surface systems. *Current Applied Physics*, **2011**, 11, S400-S403	2.6	4
17	Molecular dynamics simulation of film growth characterization of Fe and Cu on Cu(111) surface in the early stages of the deposition process. *Current Applied Physics*, **2011**, 11, S65-S68	2.6	5
16	Interface-Dependent Spin-Reorientation Energy Barrier in Fe/MgO(001) Thin Film. *IEEE Electron Device Letters*, **2011**, 32, 1287-1289	4.4	7
15	Atomic-Scale Simulations of Early Stage of Oxidation of Vicinal Si(001) Surfaces Using a Reactive Force-Field Potentials. *Japanese Journal of Applied Physics*, **2011**, 50, 10PF01	1.4	1
14	Electronic Structures and Magnetism of Al/Fe(001) Thin-Film Systems: First-Principles Calculations. *Japanese Journal of Applied Physics*, **2011**, 50, 01BF03	1.4	
13	Atomic-Scale Investigation on the Ti/Fe(001) Interface Structure: Molecular Dynamics Simulations andAb initioCalculations. *Japanese Journal of Applied Physics*, **2011**, 50, 01BE07	1.4	1
12	Electron Accumulation in LaAlO$_{3}$/SrTiO$_{3}$ Interfaces by the Broken Symmetry of Crystal Field. *Japanese Journal of Applied Physics*, **2011**, 50, 10PF03	1.4	
11	Stress-induced wurtzite to hexagonal phase transformation in zinc oxide nanowires. *Journal of Nanoscience and Nanotechnology*, **2011**, 11, 10595-8	1.3	
10	Atomic-Scale Investigation on the Ti/Fe(001) Interface Structure: Molecular Dynamics Simulations andAb initioCalculations. *Japanese Journal of Applied Physics*, **2011**, 50, 01BE07	1.4	
9	Electronic Structures and Magnetism of Al/Fe(001) Thin-Film Systems: First-Principles Calculations. *Japanese Journal of Applied Physics*, **2011**, 50, 01BF03	1.4	
8	Shape-Dependent Magnetic Moment and Formation Energy of Fe Heterostructures on Cu(111): AnAb initioStudy. *Japanese Journal of Applied Physics*, **2010**, 49, 06GH14	1.4	4
7	Atomic structures and behaviors of a fcc Cu(111) surface with submonolayer Pb coverage. *Computational Materials Science*, **2010**, 47, 693-697	3.2	3
6	The role of structural variations in the magnetism of Fe/Cu(111): First-principles calculations. *Computational Materials Science*, **2010**, 49, S291-S296	3.2	5
5	Energetics of Pb heterostructures formation on the Cu (111) in the early stage of the deposition process. *Journal of Applied Physics*, **2010**, 107, 114315	2.5	3

4	Effect of nucleated Cu phase on magnetic properties and electronic structures in bcc Fe: Ab initio study. *Journal of Applied Physics*, **2009**, 106, 083910	2.5	9
3	Electronic Structures and Atomic Surface Diffusion in Cr/Fe(001) and Fe/Cr(001) Systems: First-Principles Study. *Japanese Journal of Applied Physics*, **2008**, 47, 5076-5078	1.4	9
2	Strategy to utilize amorphous phase of semiconductor toward excellent and reliable photochemical water splitting performance: Roles of interface dipole moment and reaction parallelization. *International Journal of Energy Research*,	4.5	0
1	Layer Orientation-Engineered Two-Dimensional Platinum Ditelluride for High-Performance Direct Alcohol Fuel Cells. *ACS Energy Letters*,3481-3487	20.1	3