

HeeChae Choi

List of Publications by Year in descending order

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236925

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docs citations

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times ranked

4166
citing authors

| # | ARTICLE | IF | CITATIONS |
|----|--|------|-----------|
| 1 | Advantageous crystalline–amorphous phase boundary for enhanced electrochemical water oxidation. <i>Energy and Environmental Science</i> , 2019, 12, 2443-2454. | 30.8 | 315 |
| 2 | Si/Ge Double-Layered Nanotube Array as a Lithium Ion Battery Anode. <i>ACS Nano</i> , 2012, 6, 303-309. | 14.6 | 225 |
| 3 | Unusual Na ⁺ Ion Intercalation/Deintercalation in Metal-Rich Cu _{1.8} S for Na-Ion Batteries. <i>ACS Nano</i> , 2018, 12, 2827-2837. | 14.6 | 123 |
| 4 | Parallelized Reaction Pathway and Stronger Internal Band Bending by Partial Oxidation of Metal Sulfide–Graphene Composites: Important Factors of Synergistic Oxygen Evolution Reaction Enhancement. <i>ACS Catalysis</i> , 2018, 8, 4091-4102. | 11.2 | 116 |
| 5 | Simultaneously Controllable Doping Sites and the Activity of a W–N Codoped TiO ₂ Photocatalyst. <i>ACS Catalysis</i> , 2016, 6, 2745-2753. | 11.2 | 84 |
| 6 | Electrochemically activated cobalt nickel sulfide for an efficient oxygen evolution reaction: partial amorphization and phase control. <i>Journal of Materials Chemistry A</i> , 2019, 7, 3592-3602. | 10.3 | 81 |
| 7 | Chemical and structural engineering of transition metal boride towards excellent and sustainable hydrogen evolution reaction. <i>Nano Energy</i> , 2020, 67, 104245. | 16.0 | 79 |
| 8 | Electronically Double-Layered Metal Boride Hollow Nanoprism as an Excellent and Robust Water Oxidation Electrocatalysts. <i>Advanced Energy Materials</i> , 2019, 9, 1803799. | 19.5 | 74 |
| 9 | Improving Electrochemical Pb ²⁺ Detection Using a Vertically Aligned 2D MoS ₂ Nanofilm. <i>Analytical Chemistry</i> , 2019, 91, 11770-11777. | 6.5 | 73 |
| 10 | Hierarchically assembled tubular shell-core-shell heterostructure of hybrid transition metal chalcogenides for high-performance supercapacitors with ultrahigh cyclability. <i>Nano Energy</i> , 2017, 37, 15-23. | 16.0 | 72 |
| 11 | Ultrasonic Plasma Engineering Toward Facile Synthesis of Single-Atom M-N ₄ /N-Doped Carbon (M = Fe, Co, Ni, Cu, Pt, Pd, Ag, Au). <i>ACS Nano</i> , 2017, 11, 13, 60. | 27.0 | 63 |
| 12 | Defect engineering toward strong photocatalysis of Nb-doped anatase TiO ₂ : Computational predictions and experimental verifications. <i>Applied Catalysis B: Environmental</i> , 2017, 206, 520-530. | 20.2 | 62 |
| 13 | Self-assembled heterojunction of metal sulfides for improved photocatalysis. <i>Chemical Engineering Journal</i> , 2020, 395, 125092. | 12.7 | 62 |
| 14 | Effect of nitrogen induced defects in Li dispersed graphene on hydrogen storage. <i>International Journal of Hydrogen Energy</i> , 2013, 38, 4611-4617. | 7.1 | 59 |
| 15 | Understanding the interplay of stability and efficiency in A-site engineered lead halide perovskites. <i>APL Materials</i> , 2020, 8, . | 5.1 | 57 |
| 16 | C-doped ZnS-ZnO/Rh nanosheets as multijunctioned photocatalysts for effective H ₂ generation from pure water under solar simulating light. <i>Applied Catalysis B: Environmental</i> , 2021, 297, 120473. | 20.2 | 45 |
| 17 | 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. <i>Applied Catalysis B: Environmental</i> , 2022, 310, 121361. | 20.2 | 44 |
| 18 | TiO ₂ nanotube branched tree on a carbon nanofiber nanostructure as an anode for high energy and power lithium ion batteries. <i>Nano Research</i> , 2014, 7, 491-501. | 10.4 | 42 |

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|----|--|------|-----------|
| 19 | Microstructural control of new intercalation layered titanoniobates with large and reversible d-spacing for easy Na ⁺ ion uptake. <i>Science Advances</i> , 2017, 3, e1700509. | 10.3 | 42 |
| 20 | Fluorine-doped graphene oxide prepared by direct plasma treatment for supercapacitor application. <i>Chemical Engineering Journal</i> , 2022, 428, 132086. | 12.7 | 41 |
| 21 | Synergetic control of band gap and structural transformation for optimizing TiO ₂ photocatalysts. <i>Applied Catalysis B: Environmental</i> , 2017, 210, 513-521. | 20.2 | 37 |
| 22 | <i>In situ</i> reduction and exfoliation of g-C ₃ N ₄ nanosheets with copious active sites <i>via</i> a thermal approach for effective water splitting. <i>Catalysis Science and Technology</i> , 2019, 9, 1004-1012. | 4.1 | 33 |
| 23 | Laser-engineered oxygen vacancies for improving the NO ₂ sensing performance of SnO ₂ nanowires. <i>Journal of Materials Chemistry A</i> , 2019, 7, 27205-27211. | 10.3 | 33 |
| 24 | Electronically-Coupled Phase Boundaries in $\text{Fe}_2\text{O}_3/\text{Fe}_3\text{O}_4$ Nanocomposite Photoanodes for Enhanced Water Oxidation. <i>ACS Applied Nano Materials</i> , 2019, 2, 334-342. | 5.0 | 32 |
| 25 | Few-layered metallic 1T-MoS ₂ /TiO ₂ with exposed (001) facets: two-dimensional nanocomposites for enhanced photocatalytic activities. <i>Physical Chemistry Chemical Physics</i> , 2017, 19, 28207-28215. | 2.8 | 28 |
| 26 | Roles of an oxygen Frenkel pair in the photoluminescence of Bi ³⁺ -doped Y ₂ O ₃ : computational predictions and experimental verifications. <i>Journal of Materials Chemistry C</i> , 2014, 2, 6017-6024. | 5.5 | 25 |
| 27 | Boosting nitrogen-doping and controlling interlayer spacing in pre-reduced graphene oxides. <i>Nano Energy</i> , 2020, 78, 105286. | 16.0 | 24 |
| 28 | Dissimilar anisotropy of electron versus hole bulk transport in anatase TiO ₂ : Implications for photocatalysis. <i>Physical Review B</i> , 2017, 95, . | 3.2 | 23 |
| 29 | Partial Dehydration in Hydrated Tungsten Oxide Nanoplates Leads to Excellent and Robust Bifunctional Oxygen Reduction and Hydrogen Evolution Reactions in Acidic Media. <i>ACS Sustainable Chemistry and Engineering</i> , 2020, 8, 9507-9518. | 6.7 | 23 |
| 30 | Correlated Visible-Light Absorption and Intrinsic Magnetism of SrTiO ₃ Due to Oxygen Deficiency: Bulk or Surface Effect?. <i>Inorganic Chemistry</i> , 2015, 54, 3759-3765. | 4.0 | 21 |
| 31 | Alkaline oxygen evolution: exploring synergy between fcc and hcp cobalt nanoparticles entrapped in N-doped graphene. <i>Materials Today Chemistry</i> , 2022, 23, 100668. | 3.5 | 20 |
| 32 | ALD-assisted synthesis of V ₂ O ₅ nanoislands on SnO ₂ nanowires for improving NO ₂ sensing performance. <i>Applied Surface Science</i> , 2020, 509, 144821. | 6.1 | 18 |
| 33 | Insights on boosting oxygen evolution reaction performance via boron incorporation into nitrogen-doped carbon electrocatalysts. <i>Applied Surface Science</i> , 2020, 528, 146979. | 6.1 | 18 |
| 34 | Ferroelectric control of magnetic anisotropy of FePt/BaTiO ₃ magnetoelectric heterojunction: A density functional theory study. <i>Journal of Applied Physics</i> , 2013, 113, . | 2.5 | 17 |
| 35 | Lattice Distortion in In ₃ SbTe ₂ Phase Change Material with Substitutional Bi. <i>Scientific Reports</i> , 2015, 5, 12867. | 3.3 | 17 |
| 36 | Electronic structure, thermodynamic stability and high-temperature sensing properties of Er- δ -SiAlON ceramics. <i>Scientific Reports</i> , 2020, 10, 4952. | 3.3 | 17 |

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|----|--|------|-----------|
| 37 | 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. | 8.0 | 17 |
| 38 | Unsymmetrical Small Molecules for Broad-Band Photoresponse and Efficient Charge Transport in Organic Phototransistors. ACS Applied Materials & Interfaces, 2020, 12, 25066-25074. | 8.0 | 16 |
| 39 | Impact of Mg-Doping Site Control in the Performance of Li ₄ Ti ₅ O ₁₂ Li-Ion Battery Anode: First-Principles Predictions and Experimental Verifications. Journal of Physical Chemistry C, 2017, 121, 14994-15001. | 3.1 | 15 |
| 40 | Understanding of relationship between dopant and substitutional site to develop novel phase-change materials based on In ₃ SbTe ₂ . Japanese Journal of Applied Physics, 2019, 58, SBBB02. | 1.5 | 15 |
| 41 | Unexpected Roles of Interstitially Doped Lithium in Blue and Green Light Emitting Y ₂ O ₃ :Bi ³⁺ : A Combined Experimental and Computational Study. Inorganic Chemistry, 2017, 56, 12139-12147. | 4.0 | 14 |
| 42 | Rational nanopositioning of homogeneous amorphous phase on crystalline tungsten oxide for boosting solar water oxidation. Chemical Engineering Journal, 2022, 438, 135532. | 12.7 | 14 |
| 43 | p-Type Conductivity of Hydrated Amorphous V ₂ O ₅ and Its Enhanced Photocatalytic Performance in ZnO/V ₂ O ₅ /rGO. ACS Applied Electronic Materials, 2019, 1, 1881-1889. | 4.3 | 13 |
| 44 | Structural Evolutions of Vertically Aligned Two-Dimensional MoS ₂ Layers Revealed by in Situ Heating Transmission Electron Microscopy. Journal of Physical Chemistry C, 2019, 123, 27843-27853. | 3.1 | 13 |
| 45 | Fundamental Understanding of the Formation Mechanism for Graphene Quantum Dots Fabricated by Pulsed Laser Fragmentation in Liquid: Experimental and Theoretical Insight. Small, 2020, 16, 2003538. | 10.0 | 13 |
| 46 | Mapping Point Defects of Brookite TiO ₂ for Photocatalytic Activity Beyond Anatase and P25. Journal of Physical Chemistry C, 2020, 124, 10376-10384. | 3.1 | 12 |
| 47 | Layer Orientation-Engineered Two-Dimensional Platinum Ditelluride for High-Performance Direct Alcohol Fuel Cells. ACS Energy Letters, 2021, 6, 3481-3487. | 17.4 | 12 |
| 48 | <i>in situ</i> Raman spectroscopy of current-carrying graphene microbridge. Journal of Raman Spectroscopy, 2014, 45, 168-172. | 2.5 | 11 |
| 49 | Structural evolution of graphene in air at the electrical breakdown limit. Carbon, 2016, 99, 466-471. | 10.3 | 11 |
| 50 | Revisiting surface chemistry in TiO ₂ : A critical role of ionic passivation for pH-independent and anti-corrosive photoelectrochemical water oxidation. Chemical Engineering Journal, 2021, 407, 126929. | 12.7 | 11 |
| 51 | Defect engineering of TiNb ₂ O ₇ compound for enhanced Li-ion battery anode performances. Electrochimica Acta, 2022, 404, 139603. | 5.2 | 11 |
| 52 | 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. | 1.5 | 9 |
| 53 | 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 |
| 54 | Interface-Dependent Spin-Reorientation Energy Barrier in Fe/MgO(001) Thin Film. IEEE Electron Device Letters, 2011, 32, 1287-1289. | 3.9 | 8 |

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| 55 | Interface-dependent magnetic anisotropy of Fe/BaTiO ₃ : A first principles study. Journal of Applied Physics, 2011, 109, 07D909. | 2.5 | 8 |
| 56 | Magnesium-Doped Zinc Oxide Electrochemically Grown on Fluorine-Doped Tin Oxide Substrate. Journal of Nanoscience and Nanotechnology, 2012, 12, 3677-3681. | 0.9 | 8 |
| 57 | 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. | 6.1 | 8 |
| 58 | Electric field-driven one-step formation of vertical p-n junction TiO ₂ nanotubes exhibiting strong photocatalytic hydrogen production. Journal of Materials Chemistry A, 2021, 9, 2239-2247. | 10.3 | 8 |
| 59 | Triple-Vertex Linkage of (BO ₄) Tetrahedra in a Borosulfate: Synthesis, Crystal Structure, and Quantum-Chemical Investigation of Sr[B ₃ O(SO ₄) ₄ (SO ₄ H)]. Angewandte Chemie - International Edition, 2021, 60, 19740-19743. | 13.8 | 8 |
| 60 | Shape-Dependent Magnetic Moment and Formation Energy of Fe Heterostructures on Cu(111): An Ab initio Study. Japanese Journal of Applied Physics, 2010, 49, 06GH14. | 1.5 | 7 |
| 61 | Surface structures and magnetic anisotropies of a Fe/Pt (001) surface: An ab initio study. Journal of Applied Physics, 2011, 109, 07B764. | 2.5 | 7 |
| 62 | Material design for Ge ₂ Sb ₂ Te ₅ phase-change material with thermal stability and lattice distortion. Scripta Materialia, 2019, 170, 16-19. | 5.2 | 7 |
| 63 | 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 | 6 |
| 64 | Effects of Y Dopant on Lattice Distortion and Electrical Properties of In ₃ SbTe ₂ Phase-Change Material. Physica Status Solidi - Rapid Research Letters, 2017, 11, 1700275. | 2.4 | 6 |
| 65 | Hydrogen-free defects in hydrogenated black TiO ₂ . Physical Chemistry Chemical Physics, 2018, 20, 19871-19876. | 2.8 | 6 |
| 66 | The role of structural variations in the magnetism of Fe/Cu(111): First-principles calculations. Computational Materials Science, 2010, 49, S291-S296. | 3.0 | 5 |
| 67 | 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. | 2.4 | 5 |
| 68 | Detecting gas molecules via atomic magnetization. Dalton Transactions, 2014, 43, 13070-13075. | 3.3 | 5 |
| 69 | Interface-Driven Phase Transition of Phase-Change Material. Crystal Growth and Design, 2019, 19, 2123-2130. | 3.0 | 5 |
| 70 | Manipulatable Interface Electric Field and Charge Transfer in a 2D/2D Heterojunction Photocatalyst via Oxygen Intercalation. Catalysts, 2020, 10, 469. | 3.5 | 5 |
| 71 | 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, 2022, 46, 3674-3685. | 4.5 | 5 |
| 72 | Surface diffusion coefficient determination by uniaxial tensile strain in Pb/Cu(111) surface systems. Current Applied Physics, 2011, 11, S400-S403. | 2.4 | 4 |

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|----|---|-----|-----------|
| 73 | 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 |
| 74 | Shape change of submicron nickel particles under hydrogen and nickel chloride vapor. Applied Surface Science, 2020, 509, 145274. | 6.1 | 4 |
| 75 | 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 |
| 76 | Atomic structures and behaviors of a fcc Cu(111) surface with submonolayer Pb coverage. Computational Materials Science, 2010, 47, 693-697. | 3.0 | 3 |
| 77 | Effects of biaxial strains on the magnetic properties of Co-graphene heterojunctions. Journal of Applied Physics, 2012, 111, . | 2.5 | 3 |
| 78 | Surface structure effect on the magnetic anisotropy of Co/Pd (001) thin film: A first principles study. Thin Solid Films, 2015, 589, 252-257. | 1.8 | 2 |
| 79 | 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, 6364-6367. | 0.9 | 1 |
| 80 | 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. | 1.5 | 1 |
| 81 | Atomic-Scale Investigation on the Ti/Fe(001) Interface Structure: Molecular Dynamics Simulations and Ab initio Calculations. Japanese Journal of Applied Physics, 2011, 50, 01BE07. | 1.5 | 1 |
| 82 | 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. | 2.4 | 1 |
| 83 | Effects of an in vacancy on local distortion of fast phase transition in Bi-doped In ₃ SbTe ₂ . Journal of the Korean Physical Society, 2017, 71, 946-949. | 0.7 | 1 |
| 84 | Rationally designed CuSb ₁ -Bi S ₂ as a promising photovoltaic material: Theoretical and experimental study. Scripta Materialia, 2020, 179, 107-112. | 5.2 | 1 |
| 85 | Electronic structures and atomic surface diffusion in Cr/Fe(001) and Fe/Cr(001) systems: First-principles study. , 2007, , . | | 0 |
| 86 | Electronic Structures and Magnetism of Al/Fe(001) Thin-Film Systems: First-Principles Calculations. Japanese Journal of Applied Physics, 2011, 50, 01BF03. | 1.5 | 0 |
| 87 | Electron Accumulation in LaAlO ₃ /SrTiO ₃ Interfaces by the Broken Symmetry of Crystal Field. Japanese Journal of Applied Physics, 2011, 50, 10PF03. | 1.5 | 0 |
| 88 | Stress-Induced Wurtzite to Hexagonal Phase Transformation in Zinc Oxide Nanowires. Journal of Nanoscience and Nanotechnology, 2011, 11, 10595-10598. | 0.9 | 0 |
| 89 | Configuration Dependency of Attached Epoxy Groups on Graphene Oxide Reduction: A Molecular Dynamics Simulation. Japanese Journal of Applied Physics, 2012, 51, 06FD14. | 1.5 | 0 |
| 90 | Magnetic Properties of Iron on Strained Graphene: Density Functional Theory Study. Japanese Journal of Applied Physics, 2012, 51, 06FD13. | 1.5 | 0 |

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| 91 | Effects of Y Dopant on Lattice Distortion and Electrical Properties of In ₃ SbTe ₂ Phase-Change Material (Phys. Status Solidi RRL 11/2017). Physica Status Solidi - Rapid Research Letters, 2017, 11, 1770356. | 2.4 | 0 |
| 92 | Atomic-Scale Investigation on the Ti/Fe(001) Interface Structure: Molecular Dynamics Simulations and Ab initio Calculations. Japanese Journal of Applied Physics, 2011, 50, 01BE07. | 1.5 | 0 |
| 93 | Electronic Structures and Magnetism of Al/Fe(001) Thin-Film Systems: First-Principles Calculations. Japanese Journal of Applied Physics, 2011, 50, 01BF03. | 1.5 | 0 |
| 94 | Magnetic Properties of Iron on Strained Graphene: Density Functional Theory Study. Japanese Journal of Applied Physics, 2012, 51, 06FD13. | 1.5 | 0 |
| 95 | Magnetic Properties of Strained L1 ₀ -ordered FePt and CoPt: An ab initio Study. Applied Science and Convergence Technology, 2014, 23, 273-278. | 0.9 | 0 |