

Byungha Shin

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75
papers

2,424
citations

27
h-index

48
g-index

78
ext. papers

2,910
ext. citations

11.4
avg, IF

5.27
L-index

#	Paper	IF	Citations
75	Efficient, stable silicon tandem cells enabled by anion-engineered wide-bandgap perovskites. <i>Science</i> , 2020 , 368, 155-160	33.3	240
74	An Ultrahigh-Performance Photodetector based on a Perovskite-Transition-Metal-Dichalcogenide Hybrid Structure. <i>Advanced Materials</i> , 2016 , 28, 7799-806	24	201
73	The Role of Sodium as a Surfactant and Suppressor of Non-Radiative Recombination at Internal Surfaces in Cu ₂ ZnSnS ₄ . <i>Advanced Energy Materials</i> , 2015 , 5, 1400849	21.8	155
72	A Distributed Model for Border Traps in $\text{Al}_2\text{O}_3\text{-InGaAs}$ MOS Devices. <i>IEEE Electron Device Letters</i> , 2011 , 32, 485-487	4.4	147
71	Origin and passivation of fixed charge in atomic layer deposited aluminum oxide gate insulators on chemically treated InGaAs substrates. <i>Applied Physics Letters</i> , 2010 , 96, 152908	3.4	134
70	Laser Crystallization of Organic-Inorganic Hybrid Perovskite Solar Cells. <i>ACS Nano</i> , 2016 , 10, 7907-14	16.7	95
69	Effects of a SnO ₂ hole blocking layer in a BiVO ₄ -based photoanode on photoelectrocatalytic water oxidation. <i>Journal of Materials Chemistry A</i> , 2017 , 5, 6905-6913	13	76
68	Stability of Halide Perovskite Solar Cell Devices: In Situ Observation of Oxygen Diffusion under Biasing. <i>Advanced Materials</i> , 2018 , 30, e1802769	24	72
67	Extremely Low Contact Resistance on Graphene through n-Type Doping and Edge Contact Design. <i>Advanced Materials</i> , 2016 , 28, 864-70	24	58
66	Pre-atomic layer deposition surface cleaning and chemical passivation of (100) In _{0.2} Ga _{0.8} As and deposition of ultrathin Al ₂ O ₃ gate insulators. <i>Applied Physics Letters</i> , 2008 , 93, 052911	3.4	58
65	Unbiased biocatalytic solar-to-chemical conversion by FeOOH/BiVO/perovskite tandem structure. <i>Nature Communications</i> , 2018 , 9, 4208	17.4	58
64	Hybrid Perovskites: Effective Crystal Growth for Optoelectronic Applications. <i>Advanced Energy Materials</i> , 2017 , 7, 1602596	21.8	54
63	Continuous 3D Titanium Nitride Nanoshell Structure for Solar-Driven Unbiased Biocatalytic CO ₂ Reduction. <i>Advanced Energy Materials</i> , 2019 , 9, 1900029	21.8	54
62	Improving the open-circuit voltage of Cu ₂ ZnSnSe ₄ thin film solar cells via interface passivation. <i>Progress in Photovoltaics: Research and Applications</i> , 2017 , 25, 308-317	6.8	49
61	Effects of the incorporation of alkali elements on Cu(In,Ga)Se ₂ thin film solar cells. <i>Solar Energy Materials and Solar Cells</i> , 2016 , 157, 695-702	6.4	48
60	Atomic-Scale Observation of Oxygen Substitution and Its Correlation with Hole-Transport Barriers in Cu ₂ ZnSnSe ₄ Thin-Film Solar Cells. <i>Advanced Energy Materials</i> , 2016 , 6, 1501902	21.8	46
59	Improving Uniformity and Reproducibility of Hybrid Perovskite Solar Cells via a Low-Temperature Vacuum Deposition Process for NiO Hole Transport Layers. <i>ACS Applied Materials & Interfaces</i> , 2018 , 10, 534-540	9.5	43

58	Microstructural Evolution of Hybrid Perovskites Promoted by Chlorine and its Impact on the Performance of Solar Cell. <i>Scientific Reports</i> , 2019 , 9, 4803	4.9	40
57	Carrier-resolved photo-Hall effect. <i>Nature</i> , 2019 , 575, 151-155	50.4	40
56	Compositional engineering of solution-processed BiVO ₄ photoanodes toward highly efficient photoelectrochemical water oxidation. <i>Nano Energy</i> , 2018 , 43, 244-252	17.1	39
55	Preparation of single-phase SnSe thin-films and modification of electrical properties via stoichiometry control for photovoltaic application. <i>Journal of Alloys and Compounds</i> , 2017 , 722, 474-481	5.7	36
54	Understanding effects of precursor solution aging in triple cation lead perovskite.. <i>RSC Advances</i> , 2018 , 8, 21551-21557	3.7	34
53	Arsenic decapping and half cycle reactions during atomic layer deposition of Al ₂ O ₃ on In _{0.53} Ga _{0.47} As(001). <i>Applied Physics Letters</i> , 2010 , 96, 252907	3.4	33
52	Reduced Graphene Oxide as a Catalyst Binder: Greatly Enhanced Photoelectrochemical Stability of Cu(In,Ga)Se ₂ Photocathode for Solar Water Splitting. <i>Advanced Functional Materials</i> , 2018 , 28, 1705136	15.6	32
51	Tailoring Photoelectrochemical Performance and Stability of Cu(In,Ga)Se Photocathode via TiO ₂ -Coupled Buffer Layers. <i>ACS Applied Materials & Interfaces</i> , 2017 , 9, 5279-5287	9.5	28
50	Passivation of Deep-Level Defects by Cesium Fluoride Post-Deposition Treatment for Improved Device Performance of Cu(In,Ga)Se Solar Cells. <i>ACS Applied Materials & Interfaces</i> , 2019 , 11, 35653-35660	9.5	28
49	Effects of temperature and coating speed on the morphology of solution-sheared halide perovskite thin-films. <i>Journal of Materials Chemistry A</i> , 2018 , 6, 24911-24919	13	27
48	Strategies to reduce the open-circuit voltage deficit in Cu ₂ ZnSn(S,Se) ₄ thin film solar cells. <i>Electronic Materials Letters</i> , 2017 , 13, 373-392	2.9	25
47	Uniform Cs ₂ SnI ₆ Thin Films for Lead-Free and Stable Perovskite Optoelectronics via Hybrid Deposition Approaches. <i>Electronic Materials Letters</i> , 2019 , 15, 192-200	2.9	25
46	Bias-Free In Situ H ₂ O ₂ Generation in a Photovoltaic-Photoelectrochemical Tandem Cell for Biocatalytic Oxyfunctionalization. <i>ACS Catalysis</i> , 2019 , 9, 10562-10566	13.1	24
45	Unassisted Water Splitting Exceeding 9% Solar-to-Hydrogen Conversion Efficiency by Cu(In, Ga)(S, Se) ₂ Photocathode with Modified Surface Band Structure and Halide Perovskite Solar Cell. <i>ACS Applied Energy Materials</i> , 2020 , 3, 2296-2303	6.1	22
44	Aminosilane-Modified CuGaO ₂ Nanoparticles Incorporated with CuSCN as a Hole-Transport Layer for Efficient and Stable Perovskite Solar Cells. <i>Advanced Materials Interfaces</i> , 2019 , 6, 1901372	4.6	21
43	Understanding the Origin of Ultrasharp Sub-bandgap Luminescence from Zero-Dimensional Inorganic Perovskite Cs ₄ PbBr ₆ . <i>ACS Applied Energy Materials</i> , 2020 , 3, 192-199	6.1	21
42	Effects of Postsynthesis Thermal Conditions on Methylammonium Lead Halide Perovskite: Band Bending at Grain Boundaries and Its Impacts on Solar Cell Performance. <i>Journal of Physical Chemistry C</i> , 2016 , 120, 21330-21335	3.8	21
41	Wet Pretreatment-Induced Modification of Cu(In,Ga)Se/Cd-Free ZnTiO Buffer Interface. <i>ACS Applied Materials & Interfaces</i> , 2018 , 10, 20920-20928	9.5	21

40	Modulation of Growth Kinetics of Vacuum-Deposited CsPbBr Films for Efficient Light-Emitting Diodes. <i>ACS Applied Materials & Interfaces</i> , 2020 , 12, 1944-1952	9.5	20
39	Tailoring the Mesoscopic TiO Layer: Concomitant Parameters for Enabling High-Performance Perovskite Solar Cells. <i>Nanoscale Research Letters</i> , 2017 , 12, 57	5	19
38	Meniscus-Guided Control of Supersaturation for the Crystallization of High Quality Metal Organic Framework Thin Films. <i>Chemistry of Materials</i> , 2019 , 31, 7377-7385	9.6	19
37	Densely packed hybrid films comprising SnO ₂ and reduced graphite oxide for high-density electrochemical capacitors. <i>Journal of Materials Chemistry A</i> , 2016 , 4, 16175-16183	13	17
36	Extraordinary Enhancement of UV Absorption in TiO ₂ Nanoparticles Enabled by Low-Oxidized Graphene Nanodots. <i>Journal of Physical Chemistry C</i> , 2018 , 122, 12114-12121	3.8	17
35	Sn _{1-x} Se thin films with low thermal conductivity: role of stoichiometric deviation in thermal transport. <i>Journal of Materials Chemistry C</i> , 2018 , 6, 10083-10087	7.1	16
34	Low-dimensional formamidinium lead perovskite architectures via controllable solvent intercalation. <i>Journal of Materials Chemistry C</i> , 2019 , 7, 3945-3951	7.1	15
33	Surface passivation and point defect control in Cu(In,Ga)Se ₂ films with a Na ₂ S post deposition treatment for higher than 19% CIGS cell performance. <i>Sustainable Energy and Fuels</i> , 2019 , 3, 709-716	5.8	14
32	Amorphizing noble metal chalcogenide catalysts at the single-layer limit towards hydrogen production. <i>Nature Catalysis</i> , 2022 , 5, 212-221	36.5	14
31	Robust FeOOH/BiVO ₄ /Cu(In, Ga)Se ₂ tandem structure for solar-powered biocatalytic CO ₂ reduction. <i>Journal of Materials Chemistry A</i> , 2020 , 8, 8496-8502	13	12
30	Analysis of vertical phase distribution in reactively sputtered zinc oxysulfide thin films. <i>Applied Surface Science</i> , 2019 , 486, 555-560	6.7	11
29	Tuning the wettability of the blade enhances solution-sheared perovskite solar cell performance. <i>Nano Energy</i> , 2020 , 74, 104830	17.1	11
28	Chemical Consequences of Alkali Inhomogeneity in Cu ₂ ZnSnS ₄ Thin-Film Solar Cells. <i>Advanced Energy Materials</i> , 2015 , 5, 1500922	21.8	11
27	Enhanced sulfurization reaction of molybdenum using a thermal cracker for forming two-dimensional MoS layers. <i>Physical Chemistry Chemical Physics</i> , 2018 , 20, 16193-16201	3.6	11
26	CO -Reductive, Copper Oxide-Based Photobiocathode for Z-Scheme Semi-Artificial Leaf Structure. <i>ChemSusChem</i> , 2020 , 13, 2940-2944	8.3	10
25	Aging of a Vanadium Precursor Solution: Influencing Material Properties and Photoelectrochemical Water Oxidation Performance of Solution-Processed BiVO ₄ Photoanodes. <i>Advanced Functional Materials</i> , 2020 , 30, 1806662	15.6	10
24	Influence of hydrogen and oxygen on the structure and properties of sputtered magnesium zirconium oxynitride thin films. <i>Journal of Materials Chemistry A</i> , 2020 , 8, 9364-9372	13	8
23	Highly Efficient Vacuum-Evaporated CsPbBr Perovskite Light-Emitting Diodes with an Electrical Conductivity Enhanced Polymer-Assisted Passivation Layer. <i>ACS Applied Materials & Interfaces</i> , 2021 , 13, 37323-37330	9.5	8

22	Color tuning in Cu(In,Ga)Se ₂ thin-film solar cells by controlling optical interference in transparent front layers. <i>Progress in Photovoltaics: Research and Applications</i> , 2020 , 28, 798-807	6.8	7
21	Lignin-fueled photoelectrochemical platform for light-driven redox biotransformation. <i>Green Chemistry</i> , 2020 , 22, 5151-5160	10	7
20	Determining the Chemical Origin of the Photoluminescence of CesiumBismuthBromide Perovskite Nanocrystals and Improving the Luminescence via Metal Chloride Additives. <i>ACS Applied Energy Materials</i> , 2020 , 3, 4650-4657	6.1	7
19	Atomistic consideration of earth-abundant chalcogenide materials for photovoltaics: Kesterite and beyond. <i>Journal of Materials Research</i> , 2018 , 33, 3986-3998	2.5	7
18	Enhanced electrical conductivity of transparent electrode using metal microfiber networks for gridless thin-film solar cells. <i>Solar Energy Materials and Solar Cells</i> , 2019 , 200, 109998	6.4	6
17	Photoluminescence study of high energy proton irradiation on Cu(In,Ga)Se ₂ thin films. <i>Thin Solid Films</i> , 2016 , 603, 134-138	2.2	5
16	Universal Passivation Strategy for the Hole Transport Layer/Perovskite Interface via an Alkali Treatment for High-Efficiency Perovskite Solar Cells. <i>Solar Rrl</i> , 2021 , 5, 2000793	7.1	5
15	Potassium Hydroxide Mixed with Lithium Hydroxide: An Advanced Electrolyte for Oxygen Evolution Reaction. <i>Solar Rrl</i> , 2019 , 3, 1900195	7.1	4
14	Importance of Fine Control of Se Flux for Improving Performances of Sb ₂ Se ₃ Solar Cells Prepared by Vapor Transport Deposition. <i>Solar Rrl</i> , 2021 , 5, 2100327	7.1	4
13	Rationally Designed Window Layers for High Efficiency Perovskite/Si Tandem Solar Cells. <i>Advanced Optical Materials</i> , 2021 , 9, 2100788	8.1	4
12	Operando Injection of Oxygen Ions to Organometal Halide Perovskite (CH ₃ NH ₃ PM ₃) under In-Situ Electrical Biasing STEM-EELS. <i>Microscopy and Microanalysis</i> , 2017 , 23, 1976-1977	0.5	3
11	Improving Uniformity and Reproducibility of Photoelectrochemical Water Oxidation Performance of BiVO ₄ Photoanodes via Selective Removal of Excess V ₂ O ₅ by Electrochemical Etching. <i>ACS Applied Energy Materials</i> , 2020 , 3, 7756-7763	6.1	2
10	Graphene: Extremely Low Contact Resistance on Graphene through n-Type Doping and Edge Contact Design (Adv. Mater. 5/2016). <i>Advanced Materials</i> , 2016 , 28, 975-975	24	2
9	Enhancement mode In _{0.53} Ga _{0.47} As MOSFET with self-aligned epitaxial source/drain regrowth 2009 ,		2
8	Highly Efficient and Stable Iridium Oxygen Evolution Reaction Electrocatalysts Based on Porous Nickel Nanotube Template Enabling Tandem Devices with Solar-to-Hydrogen Conversion Efficiency Exceeding 10.. <i>Advanced Science</i> , 2022 , e2104938	13.6	2
7	Drop-casted Platinum Nanocube Catalysts for Hydrogen Evolution Reaction with Ultrahigh Mass Activity. <i>ChemSusChem</i> , 2021 , 14, 2585-2590	8.3	2
6	Emerging Earth-Abundant Solar Absorbers. <i>ACS Energy Letters</i> , 2022 , 7, 1553-1557	20.1	2
5	Thin-Film Solar Cells: Atomic-Scale Observation of Oxygen Substitution and Its Correlation with Hole-Transport Barriers in Cu ₂ ZnSnSe ₄ Thin-Film Solar Cells (Adv. Energy Mater. 6/2016). <i>Advanced Energy Materials</i> , 2016 , 6,	21.8	1

- 4 Monodisperse Carbon Nitride Nanosheets as Multifunctional Additives for Efficient and Durable Perovskite Solar Cells.. *ACS Applied Materials & Interfaces*, **2021**, 13, 61215-61226 9.5 1
- 3 Review on light absorbing materials for unassisted photoelectrochemical water splitting and systematic classifications of device architectures. *Discover Materials*, **2022**, 2, 1
- 2 CZTS-Based Thin-Film Solar Cells Prepared via Coevaporation **2015**, 335-361
- 1 Indentation-induced cracking behavior of a Cu(In,Ga)Se₂ films on Mo substrate. *Journal of Materials Research and Technology*, **2021**, 13, 1132-1138 5.5