

Tonio Buonassisi

List of Publications by Year in descending order

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198
papers

16,402
citations

22548

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h-index

18944

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203
all docs

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docs citations

203
times ranked

20126
citing authors

#	ARTICLE	IF	CITATIONS
1	Tailoring capping-layer composition for improved stability of mixed-halide perovskites. <i>Journal of Materials Chemistry A</i> , 2022, 10, 2957-2965.	5.2	5
2	A Machine Learning and Computer Vision Approach to Rapidly Optimize Multiscale Droplet Generation. <i>ACS Applied Materials & Interfaces</i> , 2022, 14, 4668-4679.	4.0	20
3	An invertible crystallographic representation for general inverse design of inorganic crystals with targeted properties. <i>Matter</i> , 2022, 5, 314-335.	5.0	59
4	Environmental Stability of Crystals: A Greedy Screening. <i>Chemistry of Materials</i> , 2022, 34, 2545-2552.	3.2	9
5	Discovering equations that govern experimental materials stability under environmental stress using scientific machine learning. <i>Npj Computational Materials</i> , 2022, 8, .	3.5	6
6	Machine learning with knowledge constraints for process optimization of open-air perovskite solar cell manufacturing. <i>Joule</i> , 2022, 6, 834-849.	11.7	69
7	Opportunities for machine learning to accelerate halide-perovskite commercialization and scale-up. <i>Matter</i> , 2022, 5, 1353-1366.	5.0	8
8	Interpretable and Explainable Machine Learning for Materials Science and Chemistry. <i>Accounts of Materials Research</i> , 2022, 3, 597-607.	5.9	60
9	Voltage- and flow-controlled electro dialysis batch operation: Flexible and optimized brackish water desalination. <i>Desalination</i> , 2021, 500, 114837.	4.0	9
10	Representative identification of spectra and environments (RISE) using k-means. <i>Progress in Photovoltaics: Research and Applications</i> , 2021, 29, 200-211.	4.4	9
11	Enhanced charge carrier lifetime and mobility as a result of Rb and Cs incorporation in hybrid perovskite. <i>Applied Physics Letters</i> , 2021, 118, .	1.5	12
12	A data fusion approach to optimize compositional stability of halide perovskites. <i>Matter</i> , 2021, 4, 1305-1322.	5.0	75
13	Discovery of temperature-induced stability reversal in perovskites using high-throughput robotic learning. <i>Nature Communications</i> , 2021, 12, 2191.	5.8	77
14	Two-step machine learning enables optimized nanoparticle synthesis. <i>Npj Computational Materials</i> , 2021, 7, .	3.5	86
15	How changes in worldwide operating conditions affect solar cell performance. <i>Solar Energy</i> , 2021, 220, 671-679.	2.9	3
16	An Open Combinatorial Diffraction Dataset Including Consensus Human and Machine Learning Labels with Quantified Uncertainty for Training New Machine Learning Models. <i>Integrating Materials and Manufacturing Innovation</i> , 2021, 10, 311-318.	1.2	5
17	Transfer Learning-Based Artificial Intelligence-Integrated Physical Modeling to Enable Failure Analysis for 3 Nanometer and Smaller Silicon-Based CMOS Transistors. <i>ACS Applied Nano Materials</i> , 2021, 4, 6903-6915.	2.4	25
18	Multi-Fidelity High-Throughput Optimization of Electrical Conductivity in P3HT-CNT Composites. <i>Advanced Functional Materials</i> , 2021, 31, 2102606.	7.8	20

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19	Using automated serendipity to discover how trace water promotes and inhibits lead halide perovskite crystal formation. <i>Applied Physics Letters</i> , 2021, 119, .	1.5	12
20	A robust low data solution: Dimension prediction of semiconductor nanorods. <i>Computers and Chemical Engineering</i> , 2021, 150, 107315.	2.0	7
21	Autonomous experimentation systems for materials development: A community perspective. <i>Matter</i> , 2021, 4, 2702-2726.	5.0	143
22	Predicting Antimicrobial Activity of Conjugated Oligoelectrolyte Molecules via Machine Learning. <i>Journal of the American Chemical Society</i> , 2021, 143, 18917-18931.	6.6	17
23	Benchmarking the performance of Bayesian optimization across multiple experimental materials science domains. <i>Npj Computational Materials</i> , 2021, 7, .	3.5	62
24	Design of domestic photovoltaics manufacturing systems under global constraints and uncertainty. <i>Renewable Energy</i> , 2020, 148, 1174-1189.	4.3	10
25	Perovskite PV-Powered RFID: Enabling Low-Cost Self-Powered IoT Sensors. <i>IEEE Sensors Journal</i> , 2020, 20, 471-478.	2.4	46
26	Revisiting thin silicon for photovoltaics: a technoeconomic perspective. <i>Energy and Environmental Science</i> , 2020, 13, 12-23.	15.6	85
27	Roadmap for cost-effective, commercially-viable perovskite silicon tandems for the current and future PV market. <i>Sustainable Energy and Fuels</i> , 2020, 4, 852-862.	2.5	58
28	Field demonstration of a cost-optimized solar powered electro dialysis reversal desalination system in rural India. <i>Desalination</i> , 2020, 476, 114217.	4.0	24
29	How Much Physics is in a Current-Voltage Curve? Inferring Defect Properties From Photovoltaic Device Measurements. <i>IEEE Journal of Photovoltaics</i> , 2020, 10, 1532-1537.	1.5	5
30	Quantitative Specifications to Avoid Degradation during E-Beam and Induced Current Microscopy of Halide Perovskite Devices. <i>Journal of Physical Chemistry C</i> , 2020, 124, 18961-18967.	1.5	4
31	AI Applications through the Whole Life Cycle of Material Discovery. <i>Matter</i> , 2020, 3, 393-432.	5.0	86
32	How machine learning can help select capping layers to suppress perovskite degradation. <i>Nature Communications</i> , 2020, 11, 4172.	5.8	75
33	The Impact of COVID-19-Related Measures on the Solar Resource in Areas with High Levels of Air Pollution. <i>Joule</i> , 2020, 4, 1681-1687.	11.7	17
34	Economically Sustainable Growth of Perovskite Photovoltaics Manufacturing. <i>Joule</i> , 2020, 4, 822-839.	11.7	59
35	Embedding physics domain knowledge into a Bayesian network enables layer-by-layer process innovation for photovoltaics. <i>Npj Computational Materials</i> , 2020, 6, .	3.5	18
36	A Worldwide Theoretical Comparison of Outdoor Potential for Various Silicon-Based Tandem Module Architecture. <i>Cell Reports Physical Science</i> , 2020, 1, 100037.	2.8	22

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37	Technoeconomic model of second-life batteries for utility-scale solar considering calendar and cycle aging. Applied Energy, 2020, 269, 115127.	5.1	84
38	Analysis of CdTe photovoltaic cells for ambient light energy harvesting. Journal Physics D: Applied Physics, 2020, 53, 405501.	1.3	5
39	Detecting Microcracks in Photovoltaics Silicon Wafers using Variational Autoencoder. , 2020, , .		2
40	Tabula Rasa for n-Cz silicon-based photovoltaics. Progress in Photovoltaics: Research and Applications, 2019, 27, 136-143.	4.4	12
41	Self-Powered Sensors Enabled by Wide-Bandgap Perovskite Indoor Photovoltaic Cells. Advanced Functional Materials, 2019, 29, 1904072.	7.8	83
42	Machine learning enables polymer cloud-point engineering via inverse design. Npj Computational Materials, 2019, 5, .	3.5	56
43	The effect of structural dimensionality on carrier mobility in lead-halide perovskites. Journal of Materials Chemistry A, 2019, 7, 23949-23957.	5.2	38
44	The Value of Efficiency in Photovoltaics. Joule, 2019, 3, 2732-2747.	11.7	49
45	Tuning Electrical, Optical, and Thermal Properties through Cation Disorder in $\text{Cu}_2\text{ZnSnS}_4$. Chemistry of Materials, 2019, 31, 8402-8412.	3.2	11
46	Accelerated Development of Perovskite-Inspired Materials via High-Throughput Synthesis and Machine-Learning Diagnosis. Joule, 2019, 3, 1437-1451.	11.7	187
47	An interface stabilized perovskite solar cell with high stabilized efficiency and low voltage loss. Energy and Environmental Science, 2019, 12, 2192-2199.	15.6	542
48	Fast and interpretable classification of small X-ray diffraction datasets using data augmentation and deep neural networks. Npj Computational Materials, 2019, 5, .	3.5	177
49	Technology and Market Perspective for Indoor Photovoltaic Cells. Joule, 2019, 3, 1415-1426.	11.7	316
50	Long Range Battery-Less PV-Powered RFID Tag Sensors. IEEE Internet of Things Journal, 2019, 6, 6989-6996.	5.5	41
51	Halide Heterogeneity Affects Local Charge Carrier Dynamics in Mixed-Ion Lead Perovskite Thin Films. Chemistry of Materials, 2019, 31, 3712-3721.	3.2	27
52	Meeting global cooling demand with photovoltaics during the 21st century. Energy and Environmental Science, 2019, 12, 2706-2716.	15.6	33
53	Triplet-Sensitization by Lead Halide Perovskite Thin Films for Near-Infrared-to-Visible Upconversion. ACS Energy Letters, 2019, 4, 888-895.	8.8	117
54	How far does the defect tolerance of lead-halide perovskites range? The example of Bi impurities introducing efficient recombination centers. Journal of Materials Chemistry A, 2019, 7, 23838-23853.	5.2	57

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55	Phosphonic Acid Modification of the Electron Selective Contact: Interfacial Effects in Perovskite Solar Cells. ACS Applied Energy Materials, 2019, 2, 2402-2408.	2.5	23
56	Detection of sub-500- μ m cracks in multicrystalline silicon wafer using edge-illuminated dark-field imaging to enable thin solar cell manufacturing. Solar Energy Materials and Solar Cells, 2019, 196, 70-77.	3.0	15
57	Bayesim: A tool for adaptive grid model fitting with Bayesian inference. Computer Physics Communications, 2019, 239, 161-165.	3.0	8
58	Homogenized halides and alkali cation segregation in alloyed organic-inorganic perovskites. Science, 2019, 363, 627-631.	6.0	258
59	Technoeconomic Analysis of Photovoltaics Module Manufacturing with Thin Silicon Wafers. , 2019, , .		1
60	Optimization and design of a low-cost, village-scale, photovoltaic-powered, electro dialysis reversal desalination system for rural India. Desalination, 2019, 452, 265-278.	4.0	33
61	Developing a Robust Recombination Contact to Realize Monolithic Perovskite Tandems With Industrially Common p-Type Silicon Solar Cells. IEEE Journal of Photovoltaics, 2018, 8, 1023-1028.	1.5	27
62	Energy Yield Limits for Single-Junction Solar Cells. Joule, 2018, 2, 1160-1170.	11.7	38
63	High-performance p-type multicrystalline silicon (mc-Si): Its characterization and projected performance in PERC solar cells. Solar Energy, 2018, 175, 68-74.	2.9	17
64	Solubility and Diffusivity: Important Metrics in the Search for the Root Cause of Light- and Elevated Temperature-Induced Degradation. IEEE Journal of Photovoltaics, 2018, 8, 448-455.	1.5	23
65	Advantages of operation flexibility and load sizing for PV-powered system design. Solar Energy, 2018, 162, 132-139.	2.9	27
66	Global Prediction of Photovoltaic Field Performance Differences Using Open-Source Satellite Data. Joule, 2018, 2, 307-322.	11.7	40
67	Solvent-Engineering Method to Deposit Compact Bismuth-Based Thin Films: Mechanism and Application to Photovoltaics. Chemistry of Materials, 2018, 30, 336-343.	3.2	87
68	Sustainable silicon photovoltaics manufacturing in a global market: A techno-economic, tariff and transportation framework. Applied Energy, 2018, 212, 704-719.	5.1	17
69	Economic viability of thin-film tandem solar modules in the United States. Nature Energy, 2018, 3, 387-394.	19.8	68
70	Distribution and Charge State of Iron Impurities in Intentionally Contaminated Lead Halide Perovskites. IEEE Journal of Photovoltaics, 2018, 8, 156-161.	1.5	8
71	Electrically-inactive phosphorus re-distribution during low temperature annealing. Journal of Applied Physics, 2018, 123, 161535.	1.1	3
72	Characterization of high-quality kerfless epitaxial silicon for solar cells: Defect sources and impact on minority-carrier lifetime. Journal of Crystal Growth, 2018, 483, 57-64.	0.7	5

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73	Evaluating root cause: the distinct roles of hydrogen and firing in activating light- and elevated-temperature induced degradation. , 2018, , .		1
74	Ultra-Thin GaAs Double-Junction Solar Cell With Carbon-Doped Emitter. IEEE Journal of Photovoltaics, 2018, 8, 1627-1634.	1.5	2
75	Precursor Concentration Affects Grain Size, Crystal Orientation, and Local Performance in Mixed-Ion Lead Perovskite Solar Cells. ACS Applied Energy Materials, 2018, 1, 6801-6808.	2.5	65
76	Moving Beyond p-Type mc-Si: Quantified Measurements of Iron Content and Lifetime of Iron-Rich Precipitates in n-Type Silicon. IEEE Journal of Photovoltaics, 2018, 8, 1525-1530.	1.5	2
77	Design of a Submillimeter Crack-Detection Tool for Si Photovoltaic Wafers Using Vicinal Illumination and Dark-Field Scattering. IEEE Journal of Photovoltaics, 2018, 8, 1449-1456.	1.5	13
78	A³Sb²I⁹ Perovskite Influences Structural Dimensionality, Exciton Binding Energy, and Solar Cell Performance. Chemistry of Materials, 2018, 30, 3734-3742.	3.2	134
79	Structural and Chemical Features Giving Rise to Defect Tolerance of Binary Semiconductors. Chemistry of Materials, 2018, 30, 5583-5592.	3.2	36
80	Adaptive power consumption improves the reliability of solar-powered devices for internet of things. Applied Energy, 2018, 224, 322-329.	5.1	28
81	State-of-the-Art Electron-Selective Contacts in Perovskite Solar Cells. Advanced Materials Interfaces, 2018, 5, 1800408.	1.9	38
82	Vertically integrated modeling of light-induced defects: Process modeling, degradation kinetics and device impact. AIP Conference Proceedings, 2018, , .	0.3	0
83	Accelerating Materials Development via Automation, Machine Learning, and High-Performance Computing. Joule, 2018, 2, 1410-1420.	11.7	210
84	Perovskite-Inspired Photovoltaic Materials: Toward Best Practices in Materials Characterization and Calculations. Chemistry of Materials, 2017, 29, 1964-1988.	3.2	116
85	Highly tensile-strained Ge/InAlAs nanocomposites. Nature Communications, 2017, 8, 14204.	5.8	15
86	23.6%-efficient monolithic perovskite/silicon tandem solar cells with improved stability. Nature Energy, 2017, 2, .	19.8	1,204
87	Metal Grid Contact Design for Four-Terminal Tandem Solar Cells. IEEE Journal of Photovoltaics, 2017, 7, 934-940.	1.5	14
88	Predicting the outdoor performance of flat-plate III-V/Si tandem solar cells. Solar Energy, 2017, 149, 77-84.	2.9	18
89	Terawatt-scale photovoltaics: Trajectories and challenges. Science, 2017, 356, 141-143.	6.0	303
90	Microscopic Distributions of Defect Luminescence From Subgrain Boundaries in Multicrystalline Silicon Wafers. IEEE Journal of Photovoltaics, 2017, 7, 772-780.	1.5	16

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91	Determining interface properties limiting open-circuit voltage in heterojunction solar cells. Journal of Applied Physics, 2017, 121, .	1.1	24
92	Analysis of loss mechanisms in Ag ₂ ZnSnSe ₄ Schottky barrier photovoltaics. Journal of Applied Physics, 2017, 121, .	1.1	12
93	Searching for "Defect-Tolerant" Photovoltaic Materials: Combined Theoretical and Experimental Screening. Chemistry of Materials, 2017, 29, 4667-4674.	3.2	275
94	Evolution of LeTID Defects in p-Type Multicrystalline Silicon During Degradation and Regeneration. IEEE Journal of Photovoltaics, 2017, 7, 980-987.	1.5	62
95	Increased Throughput and Sensitivity of Synchrotron-Based Characterization for Photovoltaic Materials. IEEE Journal of Photovoltaics, 2017, 7, 763-771.	1.5	10
96	Applications of novel effects derived from Si ingot growth inside Si melt without contact with crucible wall using noncontact crucible method to high-efficiency solar cells. Journal of Crystal Growth, 2017, 468, 705-709.	0.7	9
97	Crack detection in crystalline silicon solar cells using dark-field imaging. Energy Procedia, 2017, 124, 526-531.	1.8	10
98	Thin silicon solar cells: Pathway to cost-effective and defect-tolerant cell design. Energy Procedia, 2017, 124, 706-711.	1.8	24
99	Improving the Carrier Lifetime of Tin Sulfide via Prediction and Mitigation of Harmful Point Defects. Journal of Physical Chemistry Letters, 2017, 8, 3661-3667.	2.1	22
100	Strongly Enhanced Photovoltaic Performance and Defect Physics of Air-Stable Bismuth Oxyiodide (BiOI). Advanced Materials, 2017, 29, 1702176.	11.1	139
101	Ohmic shunts in two-terminal dual-junction solar cells with current mismatch. Japanese Journal of Applied Physics, 2017, 56, 08MA05.	0.8	10
102	Promises and challenges of perovskite solar cells. Science, 2017, 358, 739-744.	6.0	1,510
103	High Tolerance to Iron Contamination in Lead Halide Perovskite Solar Cells. ACS Nano, 2017, 11, 7101-7109.	7.3	90
104	The influence of nitrogen doping on the electrical and vibrational properties of Cu ₂ O. Physica Status Solidi (B): Basic Research, 2017, 254, 1600421.	0.7	18
105	Rapid Photovoltaic Device Characterization through Bayesian Parameter Estimation. Joule, 2017, 1, 843-856.	11.7	47
106	Persistent and adaptive power system for solar powered sensors of Internet of Things (IoT). Energy Procedia, 2017, 143, 739-741.	1.8	16
107	Do grain boundaries matter? Electrical and elemental identification at grain boundaries in LeTID-affected p-type multicrystalline silicon. , 2017, , .		4
108	Methylammonium Bismuth Iodide as a Lead-Free, Stable Hybrid Organic-Inorganic Solar Absorber. Chemistry - A European Journal, 2016, 22, 2605-2610.	1.7	312

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109	Synchrotron-based investigation of transition-metal getterability in <i>n</i> -type multicrystalline silicon. <i>Applied Physics Letters</i> , 2016, 108, .	1.5	22
110	Identification of lifetime limiting defects by temperature- and injection-dependent photoluminescence imaging. <i>Journal of Applied Physics</i> , 2016, 120, .	1.1	20
111	Effect of layer thickness on device response of silicon heavily supersaturated with sulfur. <i>AIP Advances</i> , 2016, 6, .	0.6	5
112	Optimizing phosphorus diffusion for photovoltaic applications: Peak doping, inactive phosphorus, gettering, and contact formation. <i>Journal of Applied Physics</i> , 2016, 119, .	1.1	45
113	A Framework for Process-to-Module Modeling of a-Si/c-Si (HIT) Heterojunction Solar Cells to Investigate the Cell-to-Module Efficiency Gap. <i>IEEE Journal of Photovoltaics</i> , 2016, 6, 875-887.	1.5	12
114	Engineering Solutions and Root-Cause Analysis for Light-Induced Degradation in <i>p</i> -Type Multicrystalline Silicon PERC Modules. <i>IEEE Journal of Photovoltaics</i> , 2016, 6, 860-868.	1.5	129
115	High-Performance and Traditional Multicrystalline Silicon: Comparing Gettering Responses and Lifetime-Limiting Defects. <i>IEEE Journal of Photovoltaics</i> , 2016, 6, 632-640.	1.5	36
116	Three-Dimensional TCAD Modeling of Grain Boundaries in High-Efficiency Silicon Solar Cells. <i>IEEE Journal of Photovoltaics</i> , 2016, 6, 817-822.	1.5	7
117	Solar Cell Efficiency and High Temperature Processing of <i>n</i> -type Silicon Grown by the Noncontact Crucible Method. <i>Energy Procedia</i> , 2016, 92, 815-821.	1.8	11
118	Exceeding 3 ms Minority Carrier Lifetime in <i>n</i> -type Non-contact Crucible Silicon. <i>Energy Procedia</i> , 2016, 92, 779-784.	1.8	6
119	Using Atom-Probe Tomography to Understand ZnO Defects in ZnO Nanowire Solar Cells. <i>Physical Review Applied</i> , 2016, 6, .	1.5	7
120	Lifetime Spectroscopy Investigation of Light-Induced Degradation in <i>p</i> -type Multicrystalline Silicon PERC. <i>IEEE Journal of Photovoltaics</i> , 2016, 6, 1466-1472.	1.5	70
121	A Two-Step Absorber Deposition Approach To Overcome Shunt Losses in Thin-Film Solar Cells: Using Tin Sulfide as a Proof-of-Concept Material System. <i>ACS Applied Materials & Interfaces</i> , 2016, 8, 22664-22670.	4.0	22
122	Energy-yield prediction for <i>VI</i> -based thin-film tandem solar cells. <i>Energy and Environmental Science</i> , 2016, 9, 2644-2653.	15.6	43
123	Economically sustainable scaling of photovoltaics to meet climate targets. <i>Energy and Environmental Science</i> , 2016, 9, 2122-2129.	15.6	68
124	On the methodology of energy yield assessment for one-Sun tandem solar cells. <i>Solar Energy</i> , 2016, 135, 598-604.	2.9	24
125	Nanohole Structuring for Improved Performance of Hydrogenated Amorphous Silicon Photovoltaics. <i>ACS Applied Materials & Interfaces</i> , 2016, 8, 15169-15176.	4.0	15
126	Material requirements for the adoption of unconventional silicon crystal and wafer growth techniques for high-efficiency solar cells. <i>Progress in Photovoltaics: Research and Applications</i> , 2016, 24, 122-132.	4.4	24

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127	Solar research not finished. Nature Photonics, 2016, 10, 141-142.	15.6	11
128	Identifying defect-tolerant semiconductors with high minority-carrier lifetimes: beyond hybrid lead halide perovskites. MRS Communications, 2015, 5, 265-275.	0.8	662
129	Stress effects on the Raman spectrum of an amorphous material: Theory and experiment on α -Si:H. Physical Review B, 2015, 92, .	1.1	30
130	Spontaneous lateral phase separation of AlInP during thin film growth and its effect on luminescence. Journal of Applied Physics, 2015, 118, .	1.1	15
131	Making Record-efficiency SnS Solar Cells by Thermal Evaporation and Atomic Layer Deposition. Journal of Visualized Experiments, 2015, , e52705.	0.2	19
132	Building intuition of iron evolution during solar cell processing through analysis of different process models. Applied Physics A: Materials Science and Processing, 2015, 120, 1357-1373.	1.1	25
133	Hybrid Organic-Inorganic Perovskites (HOIPs): Opportunities and Challenges. Advanced Materials, 2015, 27, 5102-5112.	11.1	372
134	Single-Phase Filamentary Cellular Breakdown Via Laser-Induced Solute Segregation. Advanced Functional Materials, 2015, 25, 4642-4649.	7.8	23
135	High-temperature diffusion processes in ultrafine-grained aluminum and its composites containing multi-walled carbon nanotubes. Journal of Composite Materials, 2015, 49, 2705-2711.	1.2	1
136	Non-cubic solar cell materials. Nature Photonics, 2015, 9, 355-357.	15.6	73
137	Process-to-panel modeling of a-Si/c-Si heterojunction solar cells. , 2015, , .		0
138	Combined Impact of Heterogeneous Lifetime and Gettering on Solar Cell Performance. Energy Procedia, 2015, 77, 119-128.	1.8	2
139	Sensitivity Analysis of Optical Metrics for Spectral Splitting Photovoltaic Systems: A Case Study. IEEE Journal of Photovoltaics, 2015, 5, 1380-1388.	1.5	2
140	Device Architecture and Lifetime Requirements for High Efficiency Multicrystalline Silicon Solar Cells. Energy Procedia, 2015, 77, 225-230.	1.8	8
141	Pathways for solar photovoltaics. Energy and Environmental Science, 2015, 8, 1200-1219.	15.6	385
142	Targeted Search for Effective Intermediate Band Solar Cell Materials. IEEE Journal of Photovoltaics, 2015, 5, 212-218.	1.5	44
143	Numerical Analysis of Radiative Recombination and Reabsorption in GaAs/Si Tandem. IEEE Journal of Photovoltaics, 2015, 5, 1079-1086.	1.5	32
144	Open-Circuit Voltage Deficit, Radiative Sub-Bandgap States, and Prospects in Quantum Dot Solar Cells. Nano Letters, 2015, 15, 3286-3294.	4.5	223

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145	A 2-terminal perovskite/silicon multijunction solar cell enabled by a silicon tunnel junction. Applied Physics Letters, 2015, 106, .	1.5	488
146	The realistic energy yield potential of GaAs-on-Si tandem solar cells: a theoretical case study. Optics Express, 2015, 23, A382.	1.7	72
147	Two-Step Annealing Study of Cuprous Oxide for Photovoltaic Applications. IEEE Journal of Photovoltaics, 2015, 5, 1476-1481.	1.5	5
148	Phase transition-induced band edge engineering of BiVO ₄ to split pure water under visible light. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 13774-13778.	3.3	116
149	Synchrotron-based analysis of chromium distributions in multicrystalline silicon for solar cells. Applied Physics Letters, 2015, 106, .	1.5	24
150	Assessing the Device-performance Impacts of Structural Defects with TCAD Modeling. Energy Procedia, 2015, 77, 8-14.	1.8	7
151	Investigation of Bismuth Triiodide (BiI ₃) for Photovoltaic Applications. Journal of Physical Chemistry Letters, 2015, 6, 4297-4302.	2.1	176
152	The capital intensity of photovoltaics manufacturing: barrier to scale and opportunity for innovation. Energy and Environmental Science, 2015, 8, 3395-3408.	15.6	133
153	Framework to predict optimal buffer layer pairing for thin film solar cell absorbers: A case study for tin sulfide/zinc oxysulfide. Journal of Applied Physics, 2015, 118, .	1.1	29
154	Semi-transparent perovskite solar cells for tandems with silicon and CIGS. Energy and Environmental Science, 2015, 8, 956-963.	15.6	630
155	Co-optimization of SnS absorber and Zn(O,S) buffer materials for improved solar cells. Progress in Photovoltaics: Research and Applications, 2015, 23, 901-908.	4.4	132
156	Band offsets of <i>n</i> -type electron-selective contacts on cuprous oxide (Cu ₂ O) for photovoltaics. Applied Physics Letters, 2014, 105, .	1.5	96
157	Sorting Metrics for Customized Phosphorus Diffusion Gettering. IEEE Journal of Photovoltaics, 2014, 4, 1421-1428.	1.5	19
158	Variations of ionization potential and electron affinity as a function of surface orientation: The case of orthorhombic SnS. Applied Physics Letters, 2014, 104, .	1.5	52
159	X-ray absorption spectroscopy elucidates the impact of structural disorder on electron mobility in amorphous zinc-tin-oxide thin films. Applied Physics Letters, 2014, 104, .	1.5	19
160	Darwin at High Temperature: Advancing Solar Cell Material Design Using Defect Kinetics Simulations and Evolutionary Optimization. Advanced Energy Materials, 2014, 4, 1400459.	10.2	12
161	In situ PL imaging toward real-time plating process control. , 2014, , .		0
162	Dislocation formation in seeds for quasi-monocrystalline silicon for solar cells. Acta Materialia, 2014, 67, 199-206.	3.8	39

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163	Improved Cu ₂ O-Based Solar Cells Using Atomic Layer Deposition to Control the Cu Oxidation State at the p-n Junction. <i>Advanced Energy Materials</i> , 2014, 4, 1301916.	10.2	142
164	Room-temperature sub-band gap optoelectronic response of hyperdoped silicon. <i>Nature Communications</i> , 2014, 5, 3011.	5.8	202
165	Minority-carrier lifetime and defect content of n-type silicon grown by the noncontact crucible method. <i>Journal of Crystal Growth</i> , 2014, 407, 31-36.	0.7	29
166	Ten-percent solar-to-fuel conversion with nonprecious materials. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2014, 111, 14057-14061.	3.3	262
167	3.88% Efficient Tin Sulfide Solar Cells using Congruent Thermal Evaporation. <i>Advanced Materials</i> , 2014, 26, 7488-7492.	11.1	227
168	Atomic Layer Deposited Gallium Oxide Buffer Layer Enables 1.2 V Open-Circuit Voltage in Cuprous Oxide Solar Cells. <i>Advanced Materials</i> , 2014, 26, 4704-4710.	11.1	242
169	Investigation of Lifetime-Limiting Defects After High-Temperature Phosphorus Diffusion in High-Iron-Content Multicrystalline Silicon. <i>IEEE Journal of Photovoltaics</i> , 2014, 4, 866-873.	1.5	11
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