

Michael G Deceglie

List of Publications by Year in descending order

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Version: 2024-02-01

80
papers

1,759
citations

430874

18
h-index

315739

38
g-index

81
all docs

81
docs citations

81
times ranked

1948
citing authors

#	ARTICLE	IF	CITATIONS
1	The 2020 photovoltaic technologies roadmap. <i>Journal Physics D: Applied Physics</i> , 2020, 53, 493001.	2.8	274
2	Design of Nanostructured Solar Cells Using Coupled Optical and Electrical Modeling. <i>Nano Letters</i> , 2012, 12, 2894-2900.	9.1	224
3	Research and development priorities for silicon photovoltaic module recycling to support a circular economy. <i>Nature Energy</i> , 2020, 5, 502-510.	39.5	188
4	Solar cell efficiency enhancement via light trapping in printable resonant dielectric nanosphere arrays. <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2013, 210, 255-260.	1.8	109
5	Reducing Operating Temperature in Photovoltaic Modules. <i>IEEE Journal of Photovoltaics</i> , 2018, 8, 532-540.	2.5	68
6	Maximizing tandem solar cell power extraction using a three-terminal design. <i>Sustainable Energy and Fuels</i> , 2018, 2, 1141-1147.	4.9	67
7	Quantifying Soiling Loss Directly From PV Yield. <i>IEEE Journal of Photovoltaics</i> , 2018, 8, 547-551.	2.5	66
8	Thermal and Electrical Effects of Partial Shade in Monolithic Thin-Film Photovoltaic Modules. <i>IEEE Journal of Photovoltaics</i> , 2015, 5, 1742-1747.	2.5	45
9	Analysis of measured photovoltaic module performance for Florida, Oregon, and Colorado locations. <i>Solar Energy</i> , 2014, 110, 736-744.	6.1	40
10	Predicting photovoltaic soiling losses using environmental parameters: An update. <i>Progress in Photovoltaics: Research and Applications</i> , 2019, 27, 210-219.	8.1	35
11	Spectrally Selective Mirrors with Combined Optical and Thermal Benefit for Photovoltaic Module Thermal Management. <i>ACS Photonics</i> , 2018, 5, 1528-1538.	6.6	30
12	Outdoor performance of a thin-film gallium-arsenide photovoltaic module. , 2013, , .		27
13	Combined Estimation of Degradation and Soiling Losses in Photovoltaic Systems. <i>IEEE Journal of Photovoltaics</i> , 2020, 10, 1788-1796.	2.5	27
14	Energy Yield Analysis of Multiterminal Si-Based Tandem Solar Cells. <i>IEEE Journal of Photovoltaics</i> , 2018, 8, 1376-1383.	2.5	26
15	Technoeconomic analysis of high-value, crystalline silicon photovoltaic module recycling processes. <i>Solar Energy Materials and Solar Cells</i> , 2022, 238, 111592.	6.2	25
16	A scalable method for extracting soiling rates from PV production data. , 2016, , .		24
17	PV degradation methodology comparison "A basis for a standard. , 2016, , .		22
18	Reducing Interanalyst Variability in Photovoltaic Degradation Rate Assessments. <i>IEEE Journal of Photovoltaics</i> , 2020, 10, 206-212.	2.5	22

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19	Mapping Photovoltaic Soiling Using Spatial Interpolation Techniques. IEEE Journal of Photovoltaics, 2019, 9, 272-277.	2.5	21
20	Fleet-Scale Energy-Yield Degradation Analysis Applied to Hundreds of Residential and Nonresidential Photovoltaic Systems. IEEE Journal of Photovoltaics, 2019, 9, 476-482.	2.5	19
21	Emissivity of solar cell cover glass calculated from infrared reflectance measurements. Solar Energy Materials and Solar Cells, 2019, 190, 98-102.	6.2	19
22	Accounting for Localized Defects in the Optoelectronic Design of Thin-Film Solar Cells. IEEE Journal of Photovoltaics, 2013, 3, 599-604.	2.5	18
23	Photovoltaic fleet degradation insights. Progress in Photovoltaics: Research and Applications, 2022, 30, 1166-1175.	8.1	18
24	Model for Characterization and Optimization of Spectrally Selective Structures to Reduce the Operating Temperature and Improve the Energy Yield of Photovoltaic Modules. ACS Applied Energy Materials, 2019, 2, 3614-3623.	5.1	17
25	Predicting Photovoltaic Soiling From Air Quality Measurements. IEEE Journal of Photovoltaics, 2020, 10, 1142-1147.	2.5	16
26	Evaluation of PV module field performance. , 2015, , .		15
27	Light and Elevated Temperature Induced Degradation (LeTID) in a Utility-Scale Photovoltaic System. IEEE Journal of Photovoltaics, 2020, 10, 1084-1092.	2.5	15
28	Real-Time Series Resistance Monitoring in PV Systems Without the Need for I-V Curves. IEEE Journal of Photovoltaics, 2015, 5, 1706-1709.	2.5	14
29	Signal Processing on PV Time-Series Data: Robust Degradation Analysis Without Physical Models. IEEE Journal of Photovoltaics, 2020, 10, 546-553.	2.5	14
30	Outdoor performance of a tandem InGaP/Si photovoltaic luminescent solar concentrator. Solar Energy Materials and Solar Cells, 2021, 223, 110945.	6.2	13
31	Performance Stabilization of CdTe PV Modules Using Bias and Light. IEEE Journal of Photovoltaics, 2015, 5, 344-349.	2.5	11
32	Illuminated Outdoor Luminescence Imaging of Photovoltaic Modules. , 2017, , .		11
33	PV Degradation - Mounting & Temperature. , 2019, , .		11
34	Differences in Printed Contacts Lead to Susceptibility of Silicon Cells to Series Resistance Degradation. IEEE Journal of Photovoltaics, 2022, 12, 690-695.	2.5	10
35	Local Variability in PV Soiling Rate. , 2018, , .		9
36	Optical approaches for passive thermal management in c-Si photovoltaic modules. Cell Reports Physical Science, 2021, 2, 100430.	5.6	9

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37	Metastable changes to the temperature coefficients of thin-film photovoltaic modules. , 2014, , .		8
38	Validated Method for Repeatable Power Measurement of CIGS Modules Exhibiting Light-Induced Metastabilities. IEEE Journal of Photovoltaics, 2015, 5, 607-612.	2.5	8
39	Numerical Validation of an Algorithm for Combined Soiling and Degradation Analysis of Photovoltaic Systems. , 2019, , .		8
40	Scanning Laser-Beam-Induced Current Measurements of Lateral Transport Near-Junction Defects in Silicon Heterojunction Solar Cells. IEEE Journal of Photovoltaics, 2014, 4, 154-159.	2.5	7
41	Al+Si Interface Optical Properties Obtained in the Si Solar Cell Configuration. Physica Status Solidi (A) Applications and Materials Science, 2017, 214, 1700480.	1.8	7
42	Quantifying Year-to-Year Variations in Solar Panel Soiling from PV Energy-Production Data. , 2017, , .		7
43	Light Management in Bifacial Photovoltaics with Spectrally Selective Mirrors. ACS Applied Energy Materials, 2021, 4, 5397-5402.	5.1	7
44	Moving toward quantifying reliability - the next step in a rapidly maturing PV industry. , 2015, , .		6
45	NREL Efforts to Address Soiling on PV Modules. , 2017, , .		6
46	Automatic Detection of Clear-sky Periods Using Ground and Satellite Based Solar Resource Data. , 2018, , .		6
47	Enhanced Photovoltaic Soiling In An Urban Environment. , 2019, , .		6
48	PERC silicon PV infrared to ultraviolet optical model. Solar Energy Materials and Solar Cells, 2020, 215, 110655.	6.2	6
49	Millions of Small Pressure Cycles Drive Damage in Cracked Solar Cells. IEEE Journal of Photovoltaics, 2022, 12, 1090-1093.	2.5	6
50	Performance stabilization of CdTe PV modules using bias and light. , 2014, , .		5
51	Impact of Infrared Optical Properties on Crystalline Si and Thin Film CdTe Solar Cells. , 2017, , .		5
52	Thermal model to quantify the impact of sub-bandgap reflectance on operating temperature of fielded PV modules. Solar Energy, 2021, 220, 246-250.	6.1	5
53	Thermal and electrical effects of partial shade in monolithic thin-film photovoltaic modules. , 2015, , .		4
54	Real-time series resistance monitoring in PV systems without the need for IV curves. , 2015, , .		4

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55	Operating principles of three-terminal solar cells. , 2018, , .		4
56	Cracked Solar Cell Performance Depends on Module Temperature. , 2021, , .		4
57	Two-layer anti-reflection coatings with optimized sub-bandgap reflection for solar modules. , 2018, , .		4
58	Light- and Elevated-Temperature-Induced Degradation-Affected Silicon Cells From a Utility-Scale Photovoltaic System Characterized by Deep-Level Transient Spectroscopy. IEEE Journal of Photovoltaics, 2022, 12, 703-710.	2.5	4
59	Optical cell temperature measurements of multiple CPV technologies in outdoor conditions. , 2013, , .		3
60	Performance of Low-Complexity Spectrally Selective One-Dimensional Mirrors for Photovoltaic Thermal Management. , 2018, , .		3
61	Automatic Detection of Clear-Sky Periods From Irradiance Data. IEEE Journal of Photovoltaics, 2019, 9, 998-1005.	2.5	3
62	Evaluating the Accuracy of Various Irradiance Models in Detecting Soiling of Irradiance Sensors. , 2019, , .		3
63	PV Fleet Performance Data Initiative Program and Methodology. , 2020, , .		3
64	Effects of bulk and grain boundary recombination on the efficiency of columnar-grained crystalline silicon film solar cells. , 2010, , .		2
65	Accounting for localized defects in the optoelectronic design of thin-film solar cells. , 2012, , .		2
66	Temperature-dependent light-stabilized states in thin-film PV modules. , 2015, , .		2
67	Yield analysis and comparison of GaInP/Si and GaInP/GaAs multi-terminal tandem solar cells. AIP Conference Proceedings, 2018, , .	0.4	2
68	Inserting a Low-Refractive-Index Dielectric Rear Reflector into PERC Cells: Challenges and Opportunities. , 2019, , .		2
69	LeTID-affected Cells from a Utility-scale Photovoltaic System Characterized by Deep Level Transient Spectroscopy. , 2021, , .		2
70	Insulation or Irradiance: Exploring Why Bifacial Photovoltaics Run Hot. , 2021, , .		2
71	Systematic Operating Temperature Differences Between Al-BSF, PERC, and PERT-With-Optimized-Rear-Reflector Solar Mini-Modules Due to Rear Reflectance. IEEE Journal of Photovoltaics, 2022, 12, 293-300.	2.5	2
72	Effect of defect-rich epitaxy on crystalline silicon / amorphous silicon heterojunction solar cells and the use of low-mobility layers to improve performance. , 2011, , .		1

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73	Experimental measurement of lateral transport in the inversion layer of silicon heterojunction solar cells. , 2013, , .		1
74	Modeling three-terminal III- V ISi tandem solar cells. , 2017, , .		1
75	Outdoor Testing of c-Si Photovoltaic Modules with Spectrally-Selective Mirrors for Operating Temperature Reduction. , 2019, , .		1
76	Back Cover: Solar cell efficiency enhancement via light trapping in printable resonant dielectric nanosphere arrays (Phys. Status Solidi A 2/2013). Physica Status Solidi (A) Applications and Materials Science, 2013, 210, .	1.8	0
77	Accounting for localized defects in the optoelectronic design of thin-film solar cells. , 2013, , .		0
78	Optical Evaluation of PERC Cell Reflectance for Thermal Management. , 2018, , .		0
79	Differences in c-Si solar cell metallization and susceptibility to series resistance degradation. , 2021, , .		0
80	Modeling Spectrally-Selective Reflection for Thermal Management in Monofacial and Bifacial Modules. , 2020, , .		0