Timothy J Silverman

List of Publications by Year
in descending order

67	1,251	623734 14	414414 32
papers	citations	h-index	g-index

67	67	67	1243
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	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
2	Worldwide Physics-Based Lifetime Prediction of c-Si Modules Due to Solder-Bond Failure. IEEE Journal of Photovoltaics, 2022, 12, 533-539.	2.5	3
3	Technoeconomic analysis of high-value, crystalline silicon photovoltaic module recycling processes. Solar Energy Materials and Solar Cells, 2022, 238, 111592.	6.2	25
4	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
5	Millions of Small Pressure Cycles Drive Damage in Cracked Solar Cells. IEEE Journal of Photovoltaics, 2022, 12, 1090-1093.	2.5	6
6	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
7	Optical approaches for passive thermal management in c-Si photovoltaic modules. Cell Reports Physical Science, 2021, 2, 100430.	5.6	9
8	Cracked Solar Cell Performance Depends on Module Temperature. , 2021, , .		4
9	Representative Modules for Accelerated Thermal Cycling and Static Load Testing. , 2021, , .		0
10	Light Management in Bifacial Photovoltaics with Spectrally Selective Mirrors. ACS Applied Energy Materials, 2021, 4, 5397-5402.	5.1	7
11	Insulation or Irradiance: Exploring Why Bifacial Photovoltaics Run Hot. , 2021, , .		2
12	Differences in c-Si solar cell metallization and susceptibility to series resistance degradation. , 2021, , .		0
13	Solder Bond Fatigue is Insensitive to Module Size. IEEE Journal of Photovoltaics, 2021, 11, 1048-1050.	2.5	4
14	Research and development priorities for silicon photovoltaic module recycling to support a circular economy. Nature Energy, 2020, 5, 502-510.	39.5	188
15	PERC silicon PV infrared to ultraviolet optical model. Solar Energy Materials and Solar Cells, 2020, 215, 110655.	6.2	6
16	Light and Elevated Temperature Induced Degradation (LeTID) in a Utility-Scale Photovoltaic System. IEEE Journal of Photovoltaics, 2020, 10, 1084-1092.	2.5	15
17	Modeling Spectrally-Selective Reflection for Thermal Management in Monofacial and Bifacial Modules. , 2020, , .		0
18	Large metastability in Cu (In,Ga)Se 2 devices: The importance of buffer properties. Progress in Photovoltaics: Research and Applications, 2019, 27, 749-759.	8.1	14

#	Article	IF	Citations
19	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
20	PV Degradation â€“ Mounting & Temperature. , 2019, , .		11
21	Inserting a Low-Refractive-Index Dielectric Rear Reflector into PERC Cells: Challenges and Opportunities. , 2019, , .		2
22	Development of Low-Cost, Crack-Tolerant Metallization Using Screen Printing. , 2019, , .		2
23	Movement of Cracked Silicon Solar Cells During Module Temperature Changes. , 2019, , .		8
24	Outdoor Testing of c-Si Photovoltaic Modules with Spectrally-Selective Mirrors for Operating Temperature Reduction. , 2019, , .		1
25	Emissivity of solar cell cover glass calculated from infrared reflectance measurements. Solar Energy Materials and Solar Cells, 2019, 190, 98-102.	6.2	19
26	Spectrally Selective Mirrors with Combined Optical and Thermal Benefit for Photovoltaic Module Thermal Management. ACS Photonics, 2018, 5, 1528-1538.	6.6	30
27	Reducing Operating Temperature in Photovoltaic Modules. IEEE Journal of Photovoltaics, 2018, 8, 532-540.	2.5	68
28	Permanent shunts from passing shadows: Reverse-bias damage in thin-film photovoltaic modules. , 2018, , .		0
29	Optical Evaluation of PERC Cell Reflectance for Thermal Management. , 2018, , .		0
30	Performance of Low-Complexity Spectrally Selective One-Dimensional Mirrors for Photovoltaic Thermal Management. , 2018, , .		3
31	Thin-Film Module Reverse-Bias Breakdown Sites Identified by Thermal Imaging. , 2018, , .		9
32	Partial Shade Endurance Testing for Monolithic Photovoltaic Modules. , 2018, , .		5
33	Energy Yield Analysis of Multiterminal Si-Based Tandem Solar Cells. IEEE Journal of Photovoltaics, 2018, 8, 1376-1383.	2.5	26
34	Yield analysis and comparison of GaInP/Si and GaInP/GaAs multi-terminal tandem solar cells. AIP Conference Proceedings, 2018, , .	0.4	2
35	Two-layer anti-reflection coatings with optimized sub-bandgap reflection for solar modules. , 2018, , .		4
36	Optics-Based Approach to Thermal Management of Photovoltaics: Selective-Spectral and Radiative Cooling. IEEE Journal of Photovoltaics, 2017, 7, 566-574.	2.5	102

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37	Photovoltaic failure and degradation modes. Progress in Photovoltaics: Research and Applications, 2017, 25, 318-326.	8.1	251
38	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
39	Notice of Removal Damage in monolithic thin-film photovoltaic modules due to partial shade. , 2017, , .		1
40	Identifying Reverse-Bias Breakdown Sites in CuInxGa(1-x)Se2. , 2017, , .		5
41	Low-cost electroluminescence imaging for automated defect characterization in photovoltaic modules. , 2017, , .		2
42	Illuminated Outdoor Luminescence Imaging of Photovoltaic Modules. , 2017, , .		11
43	Passive Cooling of Photovoltaics with Desiccants. , 2017, , .		3
44	Impact of Infrared Optical Properties on Crystalline Si and Thin Film CdTe Solar Cells. , 2017, , .		5
45	A novel approach to thermal design of solar modules: Selective-spectral and radiative cooling. , 2016, , .		5
46	Climate specific thermomechanical fatigue of flat plate photovoltaic module solder joints. Microelectronics Reliability, 2016, 62, 124-129.	1.7	70
47	Damage in Monolithic Thin-Film Photovoltaic Modules Due to Partial Shade. IEEE Journal of Photovoltaics, 2016, 6, 1333-1338.	2.5	47
48	An Illumination- and Temperature-Dependent Analytical Model for Copper Indium Gallium Diselenide (CIGS) Solar Cells. IEEE Journal of Photovoltaics, 2016, 6, 1298-1307.	2.5	19
49	The Influence of PV Module Materials and Design on Solder Joint Thermal Fatigue Durability. IEEE Journal of Photovoltaics, 2016, 6, 1407-1412.	2.5	34
50	Evaluation of PV module field performance. , 2015, , .		15
51	Thermal and electrical effects of partial shade in monolithic thin-film photovoltaic modules. , 2015, , .		4
52	Temperature-dependent light-stabilized states in thin-film PV modules. , 2015, , .		2
53	Real-Time Series Resistance Monitoring in PV Systems Without the Need for Iâ€“V Curves. IEEE Journal of Photovoltaics, 2015, 5, 1706-1709.	2.5	14
54	Real-time series resistance monitoring in PV systems without the need for IV curves. , 2015, , .		4

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55	A physics-based compact model for CIGS and CdTe solar cells: From voltage-dependent carrier collection to light-enhanced reverse breakdown. , 2015, , .		9
56	Validated Method for Repeatable Power Measurement of CIGS Modules Exhibiting Light-Induced Metastabilities. IEEE Journal of Photovoltaics, 2015, 5, 607-612.	2.5	8
57	Thermal and Electrical Effects of Partial Shade in Monolithic Thin-Film Photovoltaic Modules. IEEE Journal of Photovoltaics, 2015, 5, 1742-1747.	2.5	45
58	Performance Stabilization of CdTe PV Modules Using Bias and Light. IEEE Journal of Photovoltaics, 2015, 5, 344-349.	2.5	11
59	Metastable changes to the temperature coefficients of thin-film photovoltaic modules. , 2014, , .		8
60	Performance stabilization of CdTe PV modules using bias and light. , 2014, , .		5
61	Outdoor performance of a thin-film gallium-arsenide photovoltaic module. , 2013, , .		27
62	Optical cell temperature measurements of multiple CPV technologies in outdoor conditions. , 2013, , .		3
63	On the effect of ramp rate in damage accumulation of the CPV die-attach. , 2012, , .		4
64	Simulation and experiment of thermal fatigue in the CPV die attach. AIP Conference Proceedings, 2012, , .	0.4	8
65	Relative lifetime prediction for CPV die-attach layers. , 2012, , .		2
66	Modeling Thermal Fatigue in CPV Cell Assemblies. IEEE Journal of Photovoltaics, 2011, 1, 242-247.	2.5	13
67	Venturing outdoors. Nature Energy, 0, , .	39.5	0