Sarah R Kurtz

List of Publications by Year
in descending order

142 papers	6,774 citations	109321 35 h-index	69250 77 g-index
144 all docs	144 docs citations	144 times ranked	6149 citing authors

#	Article	IF	Citations
1	Seasonal challenges for a California renewable- energy-driven grid. IScience, 2022, 25, 103577.	4.1	13
2	Optimizing the Configuration of Photovoltaic Plants to Minimize the Need for Storage. IEEE Journal of Photovoltaics, 2022, 12, 860-870.	2.5	4
3	Evaluating emerging long-duration energy storage technologies. Renewable and Sustainable Energy Reviews, 2022, 159, 112240.	16.4	61
4	Geographical variability of summer- and winter-dominant onshore wind. Journal of Renewable and Sustainable Energy, 2022, 14, .	2.0	3
5	Thermal Impact of Rear Insulation, Light Trapping, and Parasitic Absorption in Solar Modules. IEEE Journal of Photovoltaics, 2022, 12, 1043-1050.	2.5	2
6	Seasonal Challenges for a Zero-Carbon Grid in California. , 2021, , .		3
7	Global Progress Toward Renewable Electricity: Tracking the Role of Solar. IEEE Journal of Photovoltaics, 2021, 11, 1335-1342.	2.5	39
8	Cross-sector storage and modeling needed for deep decarbonization. Joule, 2021, 5, 2529-2534.	24.0	14
9	Capacity Factor Analysis of U.S. PV System Reliability and Performance. IEEE Journal of Photovoltaics, 2020, 10, 818-823.	2.5	1
10	Historical Analysis of Champion Photovoltaic Module Efficiencies. IEEE Journal of Photovoltaics, 2018, 8, 363-372.	2.5	37
11	Robust PV Degradation Methodology and Application. IEEE Journal of Photovoltaics, 2018, 8, 525-531.	2.5	121
12	Silicon Heterojunction System Field Performance. IEEE Journal of Photovoltaics, 2018, 8, 177-182.	2.5	53
13	Terawatt-scale photovoltaics: Trajectories and challenges. Science, 2017, 356, 141-143.	12.6	303
14	Perovskite Photovoltaics: The Path to a Printable Terawatt-Scale Technology. ACS Energy Letters, 2017, 2, 2540-2544.	17.4	64
15	Defining Threshold Values of Encapsulant and Backsheet Adhesion for PV Module Reliability. IEEE Journal of Photovoltaics, 2017, 7, 1536-1540.	2.5	23
16	PV degradation curves: nonâ€linearities and failure modes. Progress in Photovoltaics: Research and Applications, 2017, 25, 583-591.	8.1	109
17	Analysis of initial performance of Solergyâ€™s HCPV/T system at Rome-Fiumicino International Airport. AIP Conference Proceedings, 2017, , .	0.4	1
18	Notice of Removal Damage in monolithic thin-film photovoltaic modules due to partial shade. , 2017, , .		1

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19	Notice of Removal Elucidating PID degradation mechanisms and in-situ dark I-V monitoring for modeling degradation rate in CdTe thin-film modules. , 2017, , .		0
20	Marrying Quality Assurance with Design Engineering â€" A Winning Partnership! But, a Cultural Divide?. , 2017, , .		0
21	Defining Threshold Values of Encapsulant and Backsheet Adhesion for PV Module Reliability. , 2017, , .		0
22	Simulated potential for enhanced performance of mechanically stacked hybrid IIIâ€"V/Si tandem photovoltaic modules using DCâ€"DC converters. Journal of Photonics for Energy, 2017, 7, 1.	1.3	12
23	A sideâ€byâ€side comparison of CPV module and system performance. Progress in Photovoltaics: Research and Applications, 2016, 24, 940-954.	8.1	3
24	Compendium of photovoltaic degradation rates. Progress in Photovoltaics: Research and Applications, 2016, 24, 978-989.	8.1	374
25	Development and first results of the width-tapered beam method for adhesion testing of photovoltaic material systems. , 2016, , .		19
26	Assessing the causes of encapsulant delamination in PV modules. , 2016, , .		23
27	Determining the effects of environment and atmospheric parameters on PV field performance. , 2016, , .		21
28	A scalable method for extracting soiling rates from PV production data. , 2016, , .		24
29	Damage in Monolithic Thin-Film Photovoltaic Modules Due to Partial Shade. IEEE Journal of Photovoltaics, 2016, 6, 1333-1338.	2.5	47
30	Multi angle laser light scattering evaluation of field exposed thermoplastic photovoltaic encapsulant materials. Energy Science and Engineering, 2016, 4, 40-51.	4.0	13
31	PV degradation methodology comparison â€" A basis for a standard. , 2016, , .		22
32	Elucidating PID Degradation Mechanisms and In Situ Dark Iâ€"V Monitoring for Modeling Degradation Rate in CdTe Thin-Film Modules. IEEE Journal of Photovoltaics, 2016, 6, 1635-1640.	2.5	28
33	Durability of polymeric encapsulation materials in a PMMA/glass concentrator photovoltaic system. Progress in Photovoltaics: Research and Applications, 2016, 24, 1385-1409.	8.1	11
34	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
35	Optically Enhanced Photon Recycling in Mechanically Stacked Multijunction Solar Cells. IEEE Journal of Photovoltaics, 2016, 6, 358-365.	2.5	33
36	Solar research not finished. Nature Photonics, 2016, 10, 141-142.	31.4	11

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37	Field testing of thermoplastic encapsulants in highâ€temperature installations. Energy Science and Engineering, 2015, 3, 565-580.	4.0	29
38	Moving toward quantifying reliability - the next step in a rapidly maturing PV industry. , 2015, , .		6
39	Translating outdoor CPV <i>Iâ€“V</i> measurements to a CSTC power rating and the associated uncertainty. Progress in Photovoltaics: Research and Applications, 2015, 23, 1557-1571.	8.1	33
40	Thermal and electrical effects of partial shade in monolithic thin-film photovoltaic modules. , 2015, , .		4
41	Temperature-dependent light-stabilized states in thin-film PV modules. , 2015, , .		2
42	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
43	Field testing of flat-plate and concentrator photovoltaic systems at the Solar Technology Acceleration Center. , 2015, , .		2
44	Real-time series resistance monitoring in PV systems without the need for IV curves. , 2015, , .		4
45	Survey of potential-induced degradation in thin-film modules. Journal of Photonics for Energy, 2015, 5, 053083.	1.3	28
46	Implications of Redesigned, High-Radiative-Efficiency GaInP Junctions on III-V Multijunction Concentrator Solar Cells. IEEE Journal of Photovoltaics, 2015, 5, 418-424.	2.5	17
47	Validated Method for Repeatable Power Measurement of CIGS Modules Exhibiting Light-Induced Metastabilities. IEEE Journal of Photovoltaics, 2015, 5, 607-612.	2.5	8
48	Performance and Aging of a 20-Year-Old Silicon PV System. IEEE Journal of Photovoltaics, 2015, 5, 744-751.	2.5	59
49	Thermal and Electrical Effects of Partial Shade in Monolithic Thin-Film Photovoltaic Modules. IEEE Journal of Photovoltaics, 2015, 5, 1742-1747.	2.5	45
50	Performance Stabilization of CdTe PV Modules Using Bias and Light. IEEE Journal of Photovoltaics, 2015, 5, 344-349.	2.5	11
51	Key parameters in determining energy generated by CPV modules. Progress in Photovoltaics: Research and Applications, 2015, 23, 1250-1259.	8.1	35
52	CPV cell characterization following one-year exposure in Golden Colorado. AIP Conference Proceedings, 2014, , .	0.4	3
53	Direct analysis of the current-voltage curves of outdoor-degrading modules. , 2014, , .		0
54	Development of comparative tests of PV modules by the International PV Module QA Task Force. , 2014, , .		7

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55	Application of the terrestrial photovoltaic module accelerated test-to-failure protocol. , 2014, , .		8
56	The Dark Horse of Evaluating Long-Term Field Performanceâ€"Data Filtering. IEEE Journal of Photovoltaics, 2014, 4, 317-323.	2.5	58
57	PV system energy test. , 2014, , .		2
58	Photovoltaic Module Qualification Plus Testing. , 2014, , .		25
59	Three-prong path to comprehensive technical standards for photovoltaic reliability. , 2014, , .		5
60	Metastable changes to the temperature coefficients of thin-film photovoltaic modules. , 2014, , .		8
61	The ability of short term performance tests to reproduce the results of a one-year adjusted energy test for non-concentrating PV systems. , 2014, , .		1
62	Requirements for quality management system for PV module manufacturing. , 2014, , .		12
63	Performance stabilization of CdTe PV modules using bias and light. , 2014, , .		5
64	Measuring degradation rates of PV systems without irradiance data. Progress in Photovoltaics: Research and Applications, 2014, 22, 851-862.	8.1	12
65	Durability of polymeric encapsulation materials for concentrating photovoltaic systems. Progress in Photovoltaics: Research and Applications, 2013, 21, 631-651.	8.1	22
66	Thermal Study of Inverter Components. IEEE Journal of Photovoltaics, 2013, 3, 807-813.	2.5	21
67	Testing and Analysis for Lifetime Prediction of Crystalline Silicon PV Modules Undergoing Degradation by System Voltage Stress. IEEE Journal of Photovoltaics, 2013, 3, 246-253.	2.5	57
68	Effects of Internal Luminescence and Internal Optics on $V_{f oc}$ and $J_{f sc}$ of III--V Solar Cells. IEEE Journal of Photovoltaics, 2013, 3, 1437-1442.	2.5	77
69	A framework for a comparative accelerated testing standard for PV modules. , 2013, , .		12
70	Acceleration factor determination for potential-induced degradation in crystalline silicon PV modules. , 2013, , .		15
71	Measuring IV Curves and Subcell Photocurrents in the Presence of Luminescent Coupling. IEEE Journal of Photovoltaics, 2013, 3, 879-887.	2.5	85
72	A great solar cell also needs to be a great LED: External fluorescence leads to new efficiency record. AIP Conference Proceedings, 2013, , .	0.4	11

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73	Outdoor performance of a thin-film gallium-arsenide photovoltaic module. , 2013, , .		27
74	Experimental and modeling analysis of internal luminescence in III-V solar cells. AIP Conference Proceedings, 2013, , .	0.4	5
75	Optical cell temperature measurements of multiple CPV technologies in outdoor conditions. , 2013, , .		3
76	Measuring IV curves and subcell photocurrents in the presence of luminescent coupling. , 2013, , .		1
77	Thermal study of inverter components. , 2013, , .		0
78	Testing and analysis for lifetime prediction of crystalline silicon PV modules undergoing degradation by system voltage stress. , 2013, , .		1
79	How can we make PV modules safer?. , 2012, , .		26
80	Design of semiconductor-based back reflectors for high V<inf>oc</inf> monolithic multijunction solar cells. , 2012, , .		12
81	On the effect of ramp rate in damage accumulation of the CPV die-attach. , 2012, , .		4
82	Simulation and experiment of thermal fatigue in the CPV die attach. AIP Conference Proceedings, 2012, , .	0.4	8
83	Strong Internal and External Luminescence as Solar Cells Approach the Shockleyâ€"Queisser Limit. IEEE Journal of Photovoltaics, 2012, 2, 303-311.	2.5	826
84	Analysis of solar cell quality using voltage metrics. , 2012, , .		9
85	Comparative study of the performance of field-aged photovoltaic modules located in a hot and humid environment. , 2012, , .		7
86	Measuring IV curves and subcell photocurrents in the presence of luminescent coupling. , 2012, , .		4
87	Thermal study of inverter components. , 2012, , .		3
88	Testing and analysis for lifetime prediction of crystalline silicon PV modules undergoing degradation by system voltage stress. , 2012, , .		4
89	Using Phase Effects to Understand Measurements of the Quantum Efficiency and Related Luminescent Coupling in a Multijunction Solar Cell. IEEE Journal of Photovoltaics, 2012, 2, 424-433.	2.5	26
90	Relative lifetime prediction for CPV die-attach layers. , 2012, , .		2

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91	Using accelerated testing to predict module reliability. , 2011, , .		37
92	Ensuring quality of PV modules. , 2011, , .		9
93	Modeling Thermal Fatigue in CPV Cell Assemblies. IEEE Journal of Photovoltaics, 2011, 1, 242-247.	2.5	13
94	Evaluation of highâ€temperature exposure of photovoltaic modules. Progress in Photovoltaics: Research and Applications, 2011, 19, 954-965.	8.1	119
95	Reliability testing beyond Qualification as a key component in photovoltaic's progress toward grid parity. , 2011, , .		42
96	Quantifying the Thermal Fatigue of CPV Modules. AIP Conference Proceedings, 2010, , .	0.4	6
97	Cell-level thermal management issues in concentrator III–V multijunction solar cells. , 2010, , .		4
98	Multijunction solar cells for conversion of concentrated sunlight to electricity. Optics Express, 2010, 18, A73.	3.4	95
99	Creep in photovoltaic modules: Examining the stability of polymeric materials and components. , 2010, , .		26
100	Measuring degradation rates without irradiance data. , 2010, , .		13
101	Multijunction solar cells for conversion of concentrated sunlight to electricity. Optics Express, 2010, 18, A73-8.	3.4	3
102	Evaluation of high-temperature exposure of rack-mounted photovoltaic modules. , 2009, , .		45
103	A two junction, four terminal photovoltaic device for enhanced light to electric power conversion using a low-cost dichroic mirror. Journal of Renewable and Sustainable Energy, 2009, 1, 013106.	2.0	33
104	Fill factor as a probe of currentâ€matching for GaInP₂/GaAs tandem cells in a concentrator system during outdoor operation. Progress in Photovoltaics: Research and Applications, 2008, 16, 213-224.	8.1	74
105	A comparison of theoretical efficiencies of multiâ€junction concentrator solar cells. Progress in Photovoltaics: Research and Applications, 2008, 16, 537-546.	8.1	82
106	Inverted GaInP / (In)GaAs / InGaAs triple-junction solar cells with low-stress metamorphic bottom junctions. Conference Record of the IEEE Photovoltaic Specialists Conference, 2008, , .	0.0	12
107	A direct comparison of inverted and non-inverted growths of GaInP solar cells. Conference Record of the IEEE Photovoltaic Specialists Conference, 2008, , .	0.0	10
108	Effects of temperature, nitrogen ions, and antimony on wide depletion width GaInNAs. Journal of Vacuum Science & Technology B, 2007, 25, 955.	1.3	20

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109	High-efficiency GaInPâˆ•GaAsâˆ•InGaAs triple-junction solar cells grown inverted with a metamorphic bottom junction. Applied Physics Letters, 2007, 91, .	3.3	350
110	Dilute nitride GaInNAs and GaInNAsSb solar cells by molecular beam epitaxy. Journal of Applied Physics, 2007, 101, 114916.	2.5	192
111	Design and characterization of GaNâˆ•InGaN solar cells. Applied Physics Letters, 2007, 91, .	3.3	522
112	50% Efficient Solar Cell Architectures and Designs. , 2006, , .		46
113	Design, Growth, Fabrication and Characterization of High-Band Gap InGaN/GaN Solar Cells. , 2006, , .		12
114	GaInNAsSb Solar Cells Grown by Molecular Beam Epitaxy. , 2006, , .		1
115	Effect of Sb on the Properties of GaInP Top Cells. , 2006, , .		11
116	Dlts Analysis of Radiation-Induced Defects in InGaAsN Solar Cell Structures. , 2006, , .		2
117	Monolithic, Ultra-Thin GaInP/GaAs/GaInAs Tandem Solar Cells. , 2006, , .		11
118	Characterization of a Dominant Electron Trap in GaNAs Using Deep-Level Transient Spectroscopy. Materials Research Society Symposia Proceedings, 2005, 891, 1.	0.1	0
119	Effects of epitaxial lift-off on interface recombination and laser cooling in GaInPâˆ•GaAs heterostructures. Applied Physics Letters, 2005, 86, 081104.	3.3	48
120	Low-acceptor-concentration GaInNAs grown by molecular-beam epitaxy for high-current p-i-n solar cell applications. Journal of Applied Physics, 2005, 98, 094501.	2.5	59
121	Annealing-induced-type conversion of GaInNAs. Journal of Applied Physics, 2004, 95, 2505-2508.	2.5	23
122	Superior radiation resistance of In1âˆ’xGaxN alloys: Full-solar-spectrum photovoltaic material system. Journal of Applied Physics, 2003, 94, 6477-6482.	2.5	572
123	Band-gap bowing effects in BxGa1âˆ’xAs alloys. Journal of Applied Physics, 2003, 93, 2696-2699.	2.5	38
124	The Effects of Atmosphere, Temperature, and Bandgap on the Annealing of GaInNAs for Solar Cell Applications. Materials Research Society Symposia Proceedings, 2003, 799, 41.	0.1	0
125	Breakeven criteria for the GaInNAs junction in GaInP/GaAs/GaInNAs/Ge four-junction solar cells. Progress in Photovoltaics: Research and Applications, 2002, 10, 331-344.	8.1	76
126	Alternative boron precursors for BGaAs epitaxy. Journal of Electronic Materials, 2001, 30, 1387-1391.	2.2	14

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127	BGaInAs alloys lattice matched to GaAs. Applied Physics Letters, 2000, 76, 1443-1445.	3.3	94
128	Persistent photoconductivity in Ga1âˆ’xInxNyAs1âˆ’y. Applied Physics Letters, 1999, 75, 1899-1901.	3.3	58
129	Effect of nitrogen on the band structure of GaInNAs alloys. Journal of Applied Physics, 1999, 86, 2349-2351.	2.5	153
130	Requirements for a 20%-efficient polycrystalline GaAs solar cell. , 1997, , .		19
131	Polycrystalline MBE-grown GaAs for solar cells. AIP Conference Proceedings, 1997, , .	0.4	1
132	Recent developments in terrestrial concentrator photovoltaics. AIP Conference Proceedings, 1997, , .	0.4	0
133	High-efficiency GaInP/GaAs tandem solar cells. Journal of Propulsion and Power, 1996, 12, 842-846.	2.2	4
134	Accelerated publication 30.2% efficient GaInP/GaAs monolithic twoâ€terminal tandem concentrator cell. Progress in Photovoltaics: Research and Applications, 1995, 3, 47-50.	8.1	84
135	Determination of free carrier concentration innâ€GaInP alloy by Raman scattering. Journal of Applied Physics, 1995, 78, 2515-2519.	2.5	11
136	Lowâ€bandâ€gap Ga0.5In0.5P grown on (511)BGaAs substrates. Journal of Applied Physics, 1994, 75, 5110-5113.	2.5	20
137	29.5%â€efficient GaInP/GaAs tandem solar cells. Applied Physics Letters, 1994, 65, 989-991.	3.3	291
138	Photoluminescence, photoluminescence excitation, and resonant Raman spectroscopy of disordered and ordered Ga0.52In0.48P. Journal of Applied Physics, 1993, 73, 5163-5172.	2.5	81
139	Anomalous electroreflectance spectrum of spontaneously ordered Ga0.5In0.5P. Journal of Applied Physics, 1993, 74, 4130-4135.	2.5	34
140	Bandâ€gap narrowing in ordered Ga0.47In0.53As. Applied Physics Letters, 1993, 62, 1806-1808.	3.3	49
141	Competing Kinetic and Thermodynamic Processes in the Growth and Ordering of Ga_{0.5}In_{0.5}P. Materials Research Society Symposia Proceedings, 1993, 312, 83.	0.1	8
142	Optical Detection of Band Gap Variations Due to Ordering in Ga0.47In0.53As on InP. Materials Research Society Symposia Proceedings, 1992, 281, 67.	0.1	1