

# Laura Bruckman

## List of Publications by Year in descending order

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Version: 2024-02-01

72  
papers

800  
citations

623734

14  
h-index

580821

25  
g-index

73  
all docs

73  
docs citations

73  
times ranked

667  
citing authors

#	ARTICLE	IF	CITATIONS
1	Environmental effects of stratospheric ozone depletion, UV radiation, and interactions with climate change: UNEP Environmental Effects Assessment Panel, Update 2020. Photochemical and Photobiological Sciences, 2021, 20, 1-67.	2.9	93
2	Degradation science: Mesoscopic evolution and temporal analytics of photovoltaic energy materials. Current Opinion in Solid State and Materials Science, 2015, 19, 212-226.	11.5	51
3	Statistical and Domain Analytics Applied to PV Module Lifetime and Degradation Science. IEEE Access, 2013, 1, 384-403.	4.2	50
4	Differential degradation patterns of photovoltaic backsheets at the array level. Solar Energy, 2018, 163, 62-69.	6.1	42
5	Impact of environmental variables on the degradation of photovoltaic components and perspectives for the reliability assessment methodology. Solar Energy, 2020, 199, 425-436.	6.1	41
6	A Nonrelational Data Warehouse for the Analysis of Field and Laboratory Data From Multiple Heterogeneous Photovoltaic Test Sites. IEEE Journal of Photovoltaics, 2017, 7, 230-236.	2.5	40
7	Environmental effects of stratospheric ozone depletion, UV radiation, and interactions with climate change: UNEP Environmental Effects Assessment Panel, Update 2021. Photochemical and Photobiological Sciences, 2022, 21, 275-301.	2.9	40
8	Photodegradation in a stress and response framework: poly(methyl methacrylate) for solar mirrors and lens. Journal of Photonics for Energy, 2012, 2, 022004.	1.3	31
9	Mapping Multivariate Influence of Alloying Elements on Creep Behavior for Design of New Martensitic Steels. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2019, 50, 3106-3120.	2.2	28
10	Predictive models of poly(ethylene-terephthalate) film degradation under multi-factor accelerated weathering exposures. PLoS ONE, 2017, 12, e0177614.	2.5	26
11	Degradation in PV encapsulation transmittance: An interlaboratory study towards a climate-specific test. , 2015, , .		18
12	Temporal evolution and pathway models of poly(ethylene-terephthalate) degradation under multi-factor accelerated weathering exposures. PLoS ONE, 2019, 14, e0212258.	2.5	17
13	Linear Discriminant Analysis of Single-Cell Fluorescence Excitation Spectra of Five Phytoplankton Species. Applied Spectroscopy, 2012, 66, 60-65.	2.2	16
14	Multivariate multiple regression models of poly(ethylene-terephthalate) film degradation under outdoor and multi-stressor accelerated weathering exposures. PLoS ONE, 2018, 13, e0209016.	2.5	16
15	Degradation of poly(ethylene-terephthalate) under accelerated weathering exposures. , 2015, , .		15
16	Soiling of building envelope surfaces and its effect on solar reflectance â€œ Part III: Interlaboratory study of an accelerated aging method for roofing materials. Solar Energy Materials and Solar Cells, 2015, 143, 581-590.	6.2	14
17	A non-destructive method for crack quantification in photovoltaic backsheets under accelerated and real-world exposures. Polymer Degradation and Stability, 2018, 153, 244-254.	5.8	14
18	Motivation, benefits, and challenges for new photovoltaic material & module developments. Progress in Energy, 2022, 4, 032003.	10.9	14

#	ARTICLE	IF	CITATIONS
19	Characterizing photovoltaic backsheet adhesion degradation using the wedge and single cantilever beam tests, Part II: Accelerated tests. <i>Solar Energy Materials and Solar Cells</i> , 2020, 211, 110524.	6.2	13
20	Taxonomic Classification of Phytoplankton with Multivariate Optical Computing, Part III: Demonstration. <i>Applied Spectroscopy</i> , 2013, 67, 640-647.	2.2	12
21	Degradation in PV encapsulant strength of attachment: An interlaboratory study towards a climate-specific test. , 2016, , .		12
22	Screening of heritage data for improving toughness of creep-resistant martensitic steels. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2019, 763, 138142.	5.6	12
23	Characterizing the weathering induced degradation of Poly(ethylene-terephthalate) using PARAFAC modeling of fluorescenceAspectra. <i>Polymer Degradation and Stability</i> , 2019, 161, 85-94.	5.8	12
24	Taxonomic Classification of Phytoplankton with Multivariate Optical Computing, Part II: Design and Experimental Protocol of a Shipboard Fluorescence Imaging Photometer. <i>Applied Spectroscopy</i> , 2013, 67, 630-639.	2.2	11
25	Taxonomic Classification of Phytoplankton with Multivariate Optical Computing, Part I: Design and Theoretical Performance of Multivariate Optical Elements. <i>Applied Spectroscopy</i> , 2013, 67, 620-629.	2.2	10
26	Materials data analytics for 9% Cr family steel. <i>Statistical Analysis and Data Mining</i> , 2019, 12, 290-301.	2.8	9
27	Characterizing photovoltaic backsheet adhesion degradation using the wedge and single cantilever beam tests, Part I: Field Modules. <i>Solar Energy Materials and Solar Cells</i> , 2020, 215, 110669.	6.2	9
28	Durability of acrylic: Stress and response characterization of materials for photovoltaics. , 2012, , .		8
29	Construction, figures of merit, and testing of a single-cell fluorescence excitation spectroscopy system. <i>Review of Scientific Instruments</i> , 2010, 81, 013103.	1.3	7
30	Degradation of back surface acrylic mirrors: Implications for low concentration and mirror augmented photovoltaics. , 2012, , .		7
31	Design Considerations and Measured Performance of Nontracked Mirror-Augmented Photovoltaics. <i>IEEE Journal of Photovoltaics</i> , 2015, 5, 917-925.	2.5	7
32	Degradation Mechanism Detection in Photovoltaic Backsheets by Fully Convolutional Neural Network. <i>Scientific Reports</i> , 2019, 9, 16119.	3.3	7
33	Generalized Spatio-Temporal Model of Backsheet Degradation From Field Surveys of Photovoltaic Modules. <i>IEEE Journal of Photovoltaics</i> , 2019, 9, 1374-1381.	2.5	7
34	Durability of Materials in a Stress-Response Framework: Acrylic Materials for Photovoltaic Systems. <i>Materials Research Society Symposia Proceedings</i> , 2012, 1391, 107.	0.1	6
35	Degradation pathway models for photovoltaics module lifetime performance. , 2013, , .		6
36	Reciprocity and spectral effects of the degradation of poly(ethylene-terephthalate) under accelerated weathering exposures. <i>Journal of Applied Polymer Science</i> , 2019, 136, 47589.	2.6	5

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37	Dimensional Stacking for Machine Learning in ToF-SIMS Analysis of Heterostructures. <i>Advanced Materials Interfaces</i> , 2021, 8, 2001648.	3.7	5
38	Degradation Pathway Modeling of PV Minimodule Variants with Different Packaging Materials Under Indoor Accelerated Exposures. , 2021, , .		5
39	Photovoltaic lifetime and degradation science statistical pathway development: acrylic degradation. <i>Proceedings of SPIE</i> , 2013, , .	0.8	4
40	Degradation Science and Pathways in PV Systems. , 2019, , 47-93.		4
41	Direct nanoscale mapping of open circuit voltages at local back surface fields for PERC solar cells. <i>Journal of Materials Science</i> , 2020, 55, 11501-11511.	3.7	4
42	Measurement of crack length in width tapered beam experiments. <i>Journal of Adhesion Science and Technology</i> , 2021, 35, 357-374.	2.6	4
43	Degradation of back surface acrylic mirrors for low concentration and mirror-augmented photovoltaics. <i>Proceedings of SPIE</i> , 2012, , .	0.8	3
44	Statistical and domain analytics for informed study protocols. , 2013, , .		3
45	A data science approach to understanding photovoltaic module degradation. , 2015, , .		3
46	Screen Printed, Large Area Bifacial N-PERT cells with Tunnel Oxide Passivated Back Contact. , 2017, , .		3
47	EL and I-V Correlation for Degradation of PERC vs. Al-BSF Commercial Modules in Accelerated Exposures. , 2018, , .		3
48	Toward Findable, Accessible, Interoperable and Reusable (FAIR) Photovoltaic System Time Series Data. , 2021, , .		3
49	Spatio-Temporal Modeling of Field Surveyed Backsheet Degradation. , 2021, , .		3
50	Degradation analysis of field-exposed photovoltaic modules with non-fluoropolymer-based backsheets. , 2017, , .		3
51	Photovoltaic Array Differential Backside Exposure Conditions: Backsheet Degradation and Site Design. , 2017, , .		2
52	Degradation Models of Photovoltaic Module Backsheets Exposed to Diverse Real World Condition. , 2017, , .		2
53	Transformative Opportunities from Data Science and Big Data Analytics: Applied to Photovoltaics. <i>Electrochemical Society Interface</i> , 2019, 28, 57-61.	0.4	2
54	Degradation of PERC and Al-BSF Photovoltaic Cells with Differentiated Mini-module Packaging Under Damp Heat Exposure. , 2019, , .		2

#	ARTICLE	IF	CITATIONS
55	Spatially resolved characterization of optical and recombination losses for different industrial silicon solar cell architectures. International Journal of Modern Physics B, 2020, 34, 2050204.	2.0	2
56	Degradation of PERC and Al-BSF Cells with UV Cutoff and White Variations of EVA and POE Encapsulant. , 2021, , .		2
57	Degradation of photovoltaic backsheets under multi-factor accelerated UV light exposures. , 2017, , .		2
58	Characterization of Real-world and Accelerated Exposed PV Module Backsheet Degradation. , 2019, , .		2
59	Characterizing the weathering induced haze formation and gloss loss of poly(ethylene-terephthalate) via MaPd:RTS spectroscopy. , 2016, , .		1
60	Learnings from developing an applied data science curricula for undergraduate and graduate students. MRS Advances, 2020, 5, 347-353.	0.9	1
61	Degradation of Monofacial Double Glass and Glass Backsheet Photovoltaic Modules with Multiple Packaging Combinations. , 2021, , .		1
62	PVplr: R Package Implementation of Multiple Filters and Algorithms for Time-series Performance Loss Rate Analysis. , 2020, , .		1
63	Mechanistic Insights to Degradation of PERC Minimodules with Differentiated Packaging Materials & Module Architectures. , 2020, , .		1
64	Object dependent properties of mirrors for PV applications studied under accelerated weathering protocols. , 2013, , .		0
65	An Automated Algorithm for Quantifying Cracks in Photovoltaic Backsheets Under Accelerated and Real-World Exposures. , 2018, , .		0
66	Future Trend and Perspectives. , 2019, , 329-336.		0
67	Open Circuit Voltages for PERC Local Back Surface Fields Directly Resolved at the Nanoscale. , 2019, , .		0
68	Impact of surface passivation on UV stability of bifacial mc-Si PERC solar modules. , 2021, , .		0
69	Model development of degradation of PV modules backsheets with locating place of module. , 2017, , .		0
70	Characterizing the weathering induced changes in optical performance and properties of poly(ethylene-terephthalate) via MaPd:RTS spectroscopy. , 2017, , .		0
71	Degradation of Bifacial PERC and Al-BSF Cell Minimodules with White and Clear Encapsulant Combinations in Modified Damp Heat. , 2020, , .		0
72	Evaluation and Augmentation of Köppen-Geiger Climate Zone Based off of Real-World Satellite Weather Data. , 2020, , .		0