Andrew Fairbrother

List of Publications by Year
in descending order

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65	3,195	159358	161609
papers	citations	30 h-index	54 g-index

66	66	66	3698
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Operating Temperatures and Diurnal Temperature Variations of Modules Installed in Open-Rack and Typical BIPV Configurations. IEEE Journal of Photovoltaics, 2022, 12, 133-140.	1.5	6
2	Longâ€Term Performance and Shade Detection in Building Integrated Photovoltaic Systems. Solar Rrl, 2022, 6, 2100583.	3.1	6
3	Review of technology specific degradation in crystalline silicon, cadmium telluride, copper indium gallium selenide, dye sensitised, organic and perovskite solar cells in photovoltaic modules: Understanding how reliability improvements in mature technologies can enhance emerging technologies. Progress in Photovoltaics: Research and Applications, 2022, 30, 1365-1392.	4.4	26
4	Measurement of crack length in width tapered beam experiments. Journal of Adhesion Science and Technology, 2021, 35, 357-374.	1.4	4
5	Nanomechanical and Fluorescence Characterizations of Weathered PV Module Encapsulation. IEEE Journal of Photovoltaics, 2021, 11, 725-730.	1.5	2
6	Monitoring the Operating Temperatures of Modules in Open-Rack and Typical BIPV Configurations. , 2021, , .		2
7	Cohesive and adhesive degradation in PET-based photovoltaic backsheets subjected to ultraviolet accelerated weathering. Solar Energy, 2021, 224, 637-649.	2.9	6
8	Fluorescence imaging analysis of depthâ€dependent degradation in photovoltaic laminates: insights to the failure. Progress in Photovoltaics: Research and Applications, 2020, 28, 122-134.	4.4	14
9	Two-dimensional correlation spectroscopy studies on degradation of photovoltaic backsheets from indoor to outdoor. Polymer Degradation and Stability, 2020, 181, 109341.	2.7	3
10	Characterizing photovoltaic backsheet adhesion degradation using the wedge and single cantilever beam tests, Part I: Field Modules. Solar Energy Materials and Solar Cells, 2020, 215, 110669.	3.0	9
11	The impacts of moisture and ultraviolet light on the degradation of graphene oxide/polymer nanocomposites. NanoImpact, 2020, 19, 100249.	2.4	13
12	Drivers for the cracking of multilayer polyamideâ€based backsheets in field photovoltaic modules: Inâ€depth degradation mapping analysis. Progress in Photovoltaics: Research and Applications, 2020, 28, 704-716.	4.4	33
13	Micro and macroscopic mechanical behaviors of high-density polyethylene under UV irradiation and temperature. Polymer Degradation and Stability, 2020, 174, 109098.	2.7	26
14	Impact of environmental variables on the degradation of photovoltaic components and perspectives for the reliability assessment methodology. Solar Energy, 2020, 199, 425-436.	2.9	41
15	Green Composite of Instant Coffee and Poly(vinyl alcohol): An Excellent Transparent UV-Shielding Material with Superior Thermal-Oxidative Stability. Industrial & Engineering Chemistry Research, 2020, 59, 8640-8648.	1.8	17
16	A novel test method for quantifying cracking propensity of photovoltaic backsheets after ultraviolet exposure. Progress in Photovoltaics: Research and Applications, 2019, 27, 44-54.	4.4	24
17	Degradation Processes and Mechanisms of Backsheets. , 2019, , 153-174.		6
18	Generalized Spatio-Temporal Model of Backsheet Degradation From Field Surveys of Photovoltaic Modules. IEEE Journal of Photovoltaics, 2019, 9, 1374-1381.	1.5	7

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19	Temperature and light intensity effects on photodegradation of high-density polyethylene. Polymer Degradation and Stability, 2019, 165, 153-160.	2.7	114
20	Surface-Synthesized Graphene Nanoribbons for Room Temperature Switching Devices: Substrate Transfer and ex Situ Characterization. ACS Applied Nano Materials, 2019, 2, 2184-2192.	2.4	75
21	Differential degradation patterns of photovoltaic backsheets at the array level. Solar Energy, 2018, 163, 62-69.	2.9	42
22	Wavelength Sensitivity in Photodegradation of Polymer PV Backsheets. , 2018, , .		2
23	An experimental approach to investigate behaviors of crack formation of PV backsheets. , 2018, , .		3
24	Degradation and Cracking Behavior of Polyamide-Based Backsheet Subjected to Sequential Fragmentation Test. IEEE Journal of Photovoltaics, 2018, 8, 1748-1753.	1.5	27
25	Phase Separation and Stack Alignment in Aqueous Cellulose Nanocrystal Suspension under Weak Magnetic Field. Langmuir, 2018, 34, 8042-8051.	1.6	32
26	Pre-annealing of metal stack precursors and its beneficial effect on kesterite absorber properties and device performance. Solar Energy Materials and Solar Cells, 2018, 185, 226-232.	3.0	11
27	High vacuum synthesis and ambient stability of bottom-up graphene nanoribbons. Nanoscale, 2017, 9, 2785-2792.	2.8	52
28	Optical Investigation of Onâ€Surface Synthesized Armchair Graphene Nanoribbons. Physica Status Solidi (B): Basic Research, 2017, 254, 1700223.	0.7	14
29	Short-channel field-effect transistors with 9-atom and 13-atom wide graphene nanoribbons. Nature Communications, 2017, 8, 633.	5.8	312
30	Characterizations of aged Glass/Ethylene Vinyl Acetate/Glass using fluorescence spectroscopy and instrumented indentation. , 2017, , .		2
31	Degradation Models of Photovoltaic Module Backsheets Exposed to Diverse Real World Condition. , 2017, , .		2
32	Fluorescence imaging on the cross-section of photovoltaic laminates aged under different UV intensities. , 2017, , .		2
33	Eu³⁺-Doped Wide Band Gap Zn₂SnO₄ Semiconductor Nanoparticles: Structure and Luminescence. Journal of Physical Chemistry C, 2016, 120, 18887-18894.	1.5	43
34	Compositional Dependence of Chemical and Electrical Properties in Cu₂ZnSnS₄Thin Films. IEEE Journal of Photovoltaics, 2016, 6, 990-996.	1.5	10
35	Vertical orientation of short wires using a monolayer of spheres. Particulate Science and Technology, 2016, 34, 744-753.	1.1	0
36	Secondary phase and Cu substitutional defect dynamics in kesterite solar cells: Impact on optoelectronic properties. Solar Energy Materials and Solar Cells, 2016, 149, 304-309.	3.0	82

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37	Role of S and Se atoms on the microstructural properties of kesterite Cu₂ZnSn(S_xSe_{1â^'x})₄ thin film solar cells. Physical Chemistry Chemical Physics, 2016, 18, 8692-8700.	1.3	43
38	Optimization of CdS buffer layer for highâ€performance Cu₂ZnSnSe₄ solar cells and the effects of light soaking: elimination of crossover and red kink. Progress in Photovoltaics: Research and Applications, 2015, 23, 1660-1667.	4.4	110
39	Influence of compositionally induced defects on the vibrational properties of device grade Cu2ZnSnSe4 absorbers for kesterite based solar cells. Applied Physics Letters, 2015, 106, .	1.5	135
40	Compositional paradigms in multinary compound systems for photovoltaic applications: a case study of kesterites. Journal of Materials Chemistry A, 2015, 3, 9451-9455.	5.2	34
41	Zn-poor Cu₂ ZnSnSe₄ thin films and solar cell devices. Physica Status Solidi (A) Applications and Materials Science, 2015, 212, 109-115.	0.8	13
42	Multiwavelength excitation Raman scattering of Cu2ZnSn(SxSe1â^'x)4 (0â€‰â‰¤â€‰xâ€‰â‰¤â€‰1) polycrystalline thin films: Vibrational properties of sulfoselenide solid solutions. Applied Physics Letters, 2014, 105, .	1.5	64
43	Secondary phase formation in Znâ€rich Cu₂ZnSnSe₄â€based solar cells annealed in low pressure and temperature conditions. Progress in Photovoltaics: Research and Applications, 2014, 22, 479-487.	4.4	97
44	ZnS grain size effects on near-resonant Raman scattering: optical non-destructive grain size estimation. CrystEngComm, 2014, 16, 4120.	1.3	105
45	Two ideal compositions for kesterite-based solar cell devices. , 2014, , .		3
46	Vibrational and structural properties of Cu<inf>2</inf>ZnSn(S<inf>x</inf>Se<inf>1−x</inf>)<inf>4</inf> (0 ≤ x ≤ 1) solid solutions. , 2014, , .		0
47	Precursor Stack Ordering Effects in Cu₂ZnSnSe₄ Thin Films Prepared by Rapid Thermal Processing. Journal of Physical Chemistry C, 2014, 118, 17291-17298.	1.5	53
48	Earth-abundant absorber based solar cells onto low weight stainless steel substrate. Solar Energy Materials and Solar Cells, 2014, 130, 347-353.	3.0	33
49	Impact of Sn(S,Se) Secondary Phases in Cu₂ZnSn(S,Se)₄ Solar Cells: a Chemical Route for Their Selective Removal and Absorber Surface Passivation. ACS Applied Materials & Interfaces, 2014, 6, 12744-12751.	4.0	132
50	Raman scattering crystalline assessment of polycrystalline Cu2ZnSnS4 thin films for sustainable photovoltaic technologies: Phonon confinement model. Acta Materialia, 2014, 70, 272-280.	3.8	115
51	ZnSe Etching of Znâ€Rich Cu₂ZnSnSe₄: An Oxidation Route for Improved Solarâ€Cell Efficiency. Chemistry - A European Journal, 2013, 19, 14814-14822.	1.7	118
52	Toward a high Cu2ZnSnS4 solar cell efficiency processed by spray pyrolysis method. Journal of Renewable and Sustainable Energy, 2013, 5, .	0.8	32
53	A thermal route to synthesize photovoltaic grade CuInSe2 films from printed CuO/In2O3 nanoparticle-based inks under Se atmosphere. Journal of Renewable and Sustainable Energy, 2013, 5, 053140.	0.8	4
54	Selective detection of secondary phases in Cu<inf>2</inf>ZnSn(S, Se)<inf>4</inf> based absorbers by pre-resonant Raman spectroscopy. , 2013, , .		12

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55	Compositional optimization of photovoltaic grade Cu2ZnSnS4 films grown by pneumatic spray pyrolysis. Thin Solid Films, 2013, 535, 67-72.	0.8	66
56	On the formation mechanisms of Zn-rich Cu2ZnSnS4 films prepared by sulfurization of metallic stacks. Solar Energy Materials and Solar Cells, 2013, 112, 97-105.	3.0	200
57	Singleâ€Step Sulfoâ€Selenization Method to Synthesize Cu₂ZnSn(S_ySe_{1â^'y})₄ Absorbers from Metallic Stack Precursors. ChemPhysChem, 2013, 14, 1836-1843.	1.0	54
58	Inhibiting the absorber/Mo-back contact decomposition reaction in Cu2ZnSnSe4 solar cells: the role of a ZnO intermediate nanolayer. Journal of Materials Chemistry A, 2013, 1, 8338.	5.2	151
59	Synthesis of CuInSe<SUB align="right">2 nanopowders by microwave assisted solvothermal method. International Journal of Nanotechnology, 2013, 10, 1029.	0.1	1
60	Composition Control and Thermoelectric Properties of Quaternary Chalcogenide Nanocrystals: The Case of Stannite Cu₂CdSnSe₄. Chemistry of Materials, 2012, 24, 562-570.	3.2	153
61	Visible Photoluminescence Components of Solution-Grown ZnO Nanowires: Influence of the Surface Depletion Layer. Journal of Physical Chemistry C, 2012, 116, 19496-19502.	1.5	33
62	Development of a Selective Chemical Etch To Improve the Conversion Efficiency of Zn-Rich Cu₂ZnSnS₄ Solar Cells. Journal of the American Chemical Society, 2012, 134, 8018-8021.	6.6	242
63	Characterization of Low-Fouling Ethylene Glycol Containing Plasma Polymer Films. Langmuir, 2008, 24, 3828-3835.	1.6	52
64	A Comparative X-Ray and Neutron Reflectometry Study of Plasma Polymer Films Containing Reactive Amines. Plasma Processes and Polymers, 2007, 4, 433-444.	1.6	17
65	Scanning Probe Nanolithography and Protein Patterning of Low-Fouling Plasma Polymer Multilayer Films. Advanced Materials, 2006, 18, 3079-3082.	11.1	50