

Andrew Fairbrother

List of Publications by Year in descending order

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65
papers

3,195
citations

159358

30
h-index

161609

54
g-index

66
all docs

66
docs citations

66
times ranked

3698
citing authors

#	ARTICLE	IF	CITATIONS
1	Short-channel field-effect transistors with 9-atom and 13-atom wide graphene nanoribbons. Nature Communications, 2017, 8, 633.	5.8	312
2	Development of a Selective Chemical Etch To Improve the Conversion Efficiency of Zn-Rich $\text{Cu}_2\text{ZnSnS}_4$ Solar Cells. Journal of the American Chemical Society, 2012, 134, 8018-8021.	6.6	242
3	On the formation mechanisms of Zn-rich $\text{Cu}_2\text{ZnSnS}_4$ films prepared by sulfurization of metallic stacks. Solar Energy Materials and Solar Cells, 2013, 112, 97-105.	3.0	200
4	Composition Control and Thermoelectric Properties of Quaternary Chalcogenide Nanocrystals: The Case of Stannite $\text{Cu}_2\text{CdSnSe}_4$. Chemistry of Materials, 2012, 24, 562-570.	3.2	153
5	Inhibiting the absorber/Mo-back contact decomposition reaction in $\text{Cu}_2\text{ZnSnSe}_4$ solar cells: the role of a ZnO intermediate nanolayer. Journal of Materials Chemistry A, 2013, 1, 8338.	5.2	151
6	Influence of compositionally induced defects on the vibrational properties of device grade $\text{Cu}_2\text{ZnSnSe}_4$ absorbers for kesterite based solar cells. Applied Physics Letters, 2015, 106, .	1.5	135
7	Impact of Sn(S,Se) Secondary Phases in $\text{Cu}_2\text{ZnSn(S,Se)}_4$ Solar Cells: a Chemical Route for Their Selective Removal and Absorber Surface Passivation. ACS Applied Materials & Interfaces, 2014, 6, 12744-12751.	4.0	132
8	ZnSe Etching of Zn-Rich $\text{Cu}_2\text{ZnSnSe}_4$: An Oxidation Route for Improved Solar Cell Efficiency. Chemistry - A European Journal, 2013, 19, 14814-14822.	1.7	118
9	Raman scattering crystalline assessment of polycrystalline $\text{Cu}_2\text{ZnSnS}_4$ thin films for sustainable photovoltaic technologies: Phonon confinement model. Acta Materialia, 2014, 70, 272-280.	3.8	115
10	Temperature and light intensity effects on photodegradation of high-density polyethylene. Polymer Degradation and Stability, 2019, 165, 153-160.	2.7	114
11	Optimization of CdS buffer layer for high-performance $\text{Cu}_2\text{ZnSnSe}_4$ 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
12	ZnS grain size effects on near-resonant Raman scattering: optical non-destructive grain size estimation. CrystEngComm, 2014, 16, 4120.	1.3	105
13	Secondary phase formation in Zn-Rich $\text{Cu}_2\text{ZnSnSe}_4$ -based solar cells annealed in low pressure and temperature conditions. Progress in Photovoltaics: Research and Applications, 2014, 22, 479-487.	4.4	97
14	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
15	Surface-Synthesized Graphene Nanoribbons for Room Temperature Switching Devices: Substrate Transfer and <i>ex Situ</i> Characterization. ACS Applied Nano Materials, 2019, 2, 2184-2192.	2.4	75
16	Compositional optimization of photovoltaic grade $\text{Cu}_2\text{ZnSnS}_4$ films grown by pneumatic spray pyrolysis. Thin Solid Films, 2013, 535, 67-72.	0.8	66
17	Multiwavelength excitation Raman scattering of $\text{Cu}_2\text{ZnSn(S}_x\text{Se}_{1-x})_4$ (0 ≤ x ≤ 1) polycrystalline thin films: Vibrational properties of sulfoselenide solid solutions. Applied Physics Letters, 2014, 105, .	1.5	64
18	Single-Step Sulfoselenization Method to Synthesize $\text{Cu}_2\text{ZnSn(S}_x\text{Se}_{1-x})_4$ Absorbers from Metallic Stack Precursors. ChemPhysChem, 2013, 14, 1836-1843.	1.0	54

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19	Precursor Stack Ordering Effects in Cu ₂ ZnSnSe ₄ Thin Films Prepared by Rapid Thermal Processing. <i>Journal of Physical Chemistry C</i> , 2014, 118, 17291-17298.	1.5	53
20	Characterization of Low-Fouling Ethylene Glycol Containing Plasma Polymer Films. <i>Langmuir</i> , 2008, 24, 3828-3835.	1.6	52
21	High vacuum synthesis and ambient stability of bottom-up graphene nanoribbons. <i>Nanoscale</i> , 2017, 9, 2785-2792.	2.8	52
22	Scanning Probe Nanolithography and Protein Patterning of Low-Fouling Plasma Polymer Multilayer Films. <i>Advanced Materials</i> , 2006, 18, 3079-3082.	11.1	50
23	Eu ³⁺ -Doped Wide Band Gap Zn ₂ SnO ₄ Semiconductor Nanoparticles: Structure and Luminescence. <i>Journal of Physical Chemistry C</i> , 2016, 120, 18887-18894.	1.5	43
24	Role of S and Se atoms on the microstructural properties of kesterite Cu ₂ ZnSn(S _x Se ^{1-x}) ₄ thin film solar cells. <i>Physical Chemistry Chemical Physics</i> , 2016, 18, 8692-8700.	1.3	43
25	Differential degradation patterns of photovoltaic backsheets at the array level. <i>Solar Energy</i> , 2018, 163, 62-69.	2.9	42
26	Impact of environmental variables on the degradation of photovoltaic components and perspectives for the reliability assessment methodology. <i>Solar Energy</i> , 2020, 199, 425-436.	2.9	41
27	Compositional paradigms in multinary compound systems for photovoltaic applications: a case study of kesterites. <i>Journal of Materials Chemistry A</i> , 2015, 3, 9451-9455.	5.2	34
28	Visible Photoluminescence Components of Solution-Grown ZnO Nanowires: Influence of the Surface Depletion Layer. <i>Journal of Physical Chemistry C</i> , 2012, 116, 19496-19502.	1.5	33
29	Earth-abundant absorber based solar cells onto low weight stainless steel substrate. <i>Solar Energy Materials and Solar Cells</i> , 2014, 130, 347-353.	3.0	33
30	Drivers for the cracking of multilayer polyamide-based backsheets in field photovoltaic modules: In-depth degradation mapping analysis. <i>Progress in Photovoltaics: Research and Applications</i> , 2020, 28, 704-716.	4.4	33
31	Toward a high Cu ₂ ZnSnS ₄ solar cell efficiency processed by spray pyrolysis method. <i>Journal of Renewable and Sustainable Energy</i> , 2013, 5, .	0.8	32
32	Phase Separation and Stack Alignment in Aqueous Cellulose Nanocrystal Suspension under Weak Magnetic Field. <i>Langmuir</i> , 2018, 34, 8042-8051.	1.6	32
33	Degradation and Cracking Behavior of Polyamide-Based Backsheet Subjected to Sequential Fragmentation Test. <i>IEEE Journal of Photovoltaics</i> , 2018, 8, 1748-1753.	1.5	27
34	Micro and macroscopic mechanical behaviors of high-density polyethylene under UV irradiation and temperature. <i>Polymer Degradation and Stability</i> , 2020, 174, 109098.	2.7	26
35	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. <i>Progress in Photovoltaics: Research and Applications</i> . 2022. 30, 1365-1392.	4.4	26
36	A novel test method for quantifying cracking propensity of photovoltaic backsheets after ultraviolet exposure. <i>Progress in Photovoltaics: Research and Applications</i> , 2019, 27, 44-54.	4.4	24

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37	A Comparative X-Ray and Neutron Reflectometry Study of Plasma Polymer Films Containing Reactive Amines. <i>Plasma Processes and Polymers</i> , 2007, 4, 433-444.	1.6	17
38	Green Composite of Instant Coffee and Poly(vinyl alcohol): An Excellent Transparent UV-Shielding Material with Superior Thermal-Oxidative Stability. <i>Industrial & Engineering Chemistry Research</i> , 2020, 59, 8640-8648.	1.8	17
39	Optical Investigation of On-Surface Synthesized Armchair Graphene Nanoribbons. <i>Physica Status Solidi (B): Basic Research</i> , 2017, 254, 1700223.	0.7	14
40	Fluorescence imaging analysis of depth-dependent degradation in photovoltaic laminates: insights to the failure. <i>Progress in Photovoltaics: Research and Applications</i> , 2020, 28, 122-134.	4.4	14
41	Zn-poor Cu ₂ ZnSnSe ₄ thin films and solar cell devices. <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2015, 212, 109-115.	0.8	13
42	The impacts of moisture and ultraviolet light on the degradation of graphene oxide/polymer nanocomposites. <i>NanoImpact</i> , 2020, 19, 100249.	2.4	13
43	Selective detection of secondary phases in Cu ₂ ZnSn(S, Se) ₄ based absorbers by pre-resonant Raman spectroscopy. , 2013, , .		12
44	Pre-annealing of metal stack precursors and its beneficial effect on kesterite absorber properties and device performance. <i>Solar Energy Materials and Solar Cells</i> , 2018, 185, 226-232.	3.0	11
45	Compositional Dependence of Chemical and Electrical Properties in Cu ₂ ZnSn ₄ Thin Films. <i>IEEE Journal of Photovoltaics</i> , 2016, 6, 990-996.	1.5	10
46	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.	3.0	9
47	Generalized Spatio-Temporal Model of Backsheet Degradation From Field Surveys of Photovoltaic Modules. <i>IEEE Journal of Photovoltaics</i> , 2019, 9, 1374-1381.	1.5	7
48	Degradation Processes and Mechanisms of Backsheets. , 2019, , 153-174.		6
49	Cohesive and adhesive degradation in PET-based photovoltaic backsheets subjected to ultraviolet accelerated weathering. <i>Solar Energy</i> , 2021, 224, 637-649.	2.9	6
50	Operating Temperatures and Diurnal Temperature Variations of Modules Installed in Open-Rack and Typical BIPV Configurations. <i>IEEE Journal of Photovoltaics</i> , 2022, 12, 133-140.	1.5	6
51	Long-Term Performance and Shade Detection in Building Integrated Photovoltaic Systems. <i>Solar Rrl</i> , 2022, 6, 2100583.	3.1	6
52	A thermal route to synthesize photovoltaic grade CuInSe ₂ films from printed CuO/In ₂ O ₃ nanoparticle-based inks under Se atmosphere. <i>Journal of Renewable and Sustainable Energy</i> , 2013, 5, 053140.	0.8	4
53	Measurement of crack length in width tapered beam experiments. <i>Journal of Adhesion Science and Technology</i> , 2021, 35, 357-374.	1.4	4
54	Two ideal compositions for kesterite-based solar cell devices. , 2014, , .		3

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55	An experimental approach to investigate behaviors of crack formation of PV backsheets. , 2018, , .		3
56	Two-dimensional correlation spectroscopy studies on degradation of photovoltaic backsheets from indoor to outdoor. Polymer Degradation and Stability, 2020, 181, 109341.	2.7	3
57	Characterizations of aged Glass/Ethylene Vinyl Acetate/Glass using fluorescence spectroscopy and instrumented indentation. , 2017, , .		2
58	Degradation Models of Photovoltaic Module Backsheets Exposed to Diverse Real World Condition. , 2017, , .		2
59	Fluorescence imaging on the cross-section of photovoltaic laminates aged under different UV intensities. , 2017, , .		2
60	Wavelength Sensitivity in Photodegradation of Polymer PV Backsheets. , 2018, , .		2
61	Nanomechanical and Fluorescence Characterizations of Weathered PV Module Encapsulation. IEEE Journal of Photovoltaics, 2021, 11, 725-730.	1.5	2
62	Monitoring the Operating Temperatures of Modules in Open-Rack and Typical BIPV Configurations. , 2021, , .		2
63	Synthesis of CuInSe_2 nanopowders by microwave assisted solvothermal method. International Journal of Nanotechnology, 2013, 10, 1029.	0.1	1
64	Vibrational and structural properties of $\text{Cu}_2\text{ZnSn}(\text{S}_x\text{Se}_{1-x})_4$ ($0 \leq x \leq 1$) solid solutions. , 2014, , .		0
65	Vertical orientation of short wires using a monolayer of spheres. Particulate Science and Technology, 2016, 34, 744-753.	1.1	0