Matthew O Reese

List of Publications by Year in Descending Order

86 papers	6,756 citations	33 h-index	82 g-index
93 ext. papers	7,835 ext. citations	12.5 avg, IF	5.61 L-index

#	Paper	IF	Citations
86	Dual-Wavelength Time-Resolved Photoluminescence Study of CdSexTe1-x Surface Passivation via MgyZn1-yO and Al2O3. *IEEE Journal of Photovoltaics*, **2022**, 12, 309-315	3.7	1
85	Surface Modification of Backsheets Using Coupling Agents for Roll-To-Roll Processed Thin-Film Solar Photovoltaic (PV) Module Packaging Application. *ACS Applied Materials & Interfaces*, **2021**, 13, 1682-1692	9.5	1
84	Tailoring SnO2, (Mg,Zn)O, and Ga:(Mg,Zn)O electro-optical properties and stability for solar cells. *Journal Physics D: Applied Physics*, **2021**, 54, 034002	3	4
83	Exceeding 200 ns Lifetimes in Polycrystalline CdTe Solar Cells. *Solar Rrl*, **2021**, 5, 2100173	7.1	4
82	3D/2D passivation as a secret to success for polycrystalline thin-film solar cells. *Joule*, **2021**, 5, 1057-1073	37.8	19
81	Carrier lifetime as a function of Se content for CdSexTe1-x films grown on Al2O3 and MgZnO **2021**,		2
80	Colossal grain growth in Cd(Se,Te) thin films and their subsequent use in CdTe epitaxy by close-spaced sublimation. *JPhys Energy*, **2021**, 3, 024003	4.9	1
79	Stable CdTe Photoanodes with Energetics Matching Those of a Coating Intermediate Band. *ACS Energy Letters*, **2020**, 5, 1865-1871	20.1	8
78	Sputtered p-Type CuxZn1⊠S Back Contact to CdTe Solar Cells. *ACS Applied Energy Materials*, **2020**, 3, 5427-5438	6.1	5
77	Macroscopic Nonuniformities in Metal Grids Formed by Cracked Film Lithography Result in 19.3% Efficient Solar Cells. *ACS Applied Materials & Interfaces*, **2020**, 12, 25895-25902	9.5	5
76	Characterizing the Efficiency of Perovskite Solar Cells and Light-Emitting Diodes. *Joule*, **2020**, 4, 1206-1235	37.8	24
75	The 2020 photovoltaic technologies roadmap. *Journal Physics D: Applied Physics*, **2020**, 53, 493001	3	128
74	The Molybdenum Oxide Interface Limits the High-Temperature Operational Stability of Unencapsulated Perovskite Solar Cells. *ACS Energy Letters*, **2020**, 5, 2349-2360	20.1	31
73	Thin-Film Solar Cells with 19% Efficiency by Thermal Evaporation of CdSe and CdTe. *ACS Energy Letters*, **2020**, 5, 892-896	20.1	50
72	From Defects to Degradation: A Mechanistic Understanding of Degradation in Perovskite Solar Cell Devices and Modules. *Advanced Energy Materials*, **2020**, 10, 1904054	21.8	119
71	Consensus statement for stability assessment and reporting for perovskite photovoltaics based on ISOS procedures. *Nature Energy*, **2020**, 5, 35-49	62.3	369
70	Stable magnesium zinc oxide by reactive Co-Sputtering for CdTe-based solar cells. *Solar Energy Materials and Solar Cells*, **2020**, 210, 110521	6.4	12

69	Fundamentals of Using Cracked Film Lithography to Pattern Transparent Conductive Metal Grids for Photovoltaics. *Langmuir*, **2020**, 36, 4630-4636	4	7
68	Enabling Flexible All-Perovskite Tandem Solar Cells. *Joule*, **2019**, 3, 2193-2204	27.8	211
67	Carrier lifetimes of >1 in Sn-Pb perovskites enable efficient all-perovskite tandem solar cells. *Science*, **2019**, 364, 475-479	33.3	496
66	SnO-Catalyzed Oxidation in High-Efficiency CdTe Solar Cells. *ACS Applied Materials & Interfaces* , **2019**, 11, 13003-13010	9.5	14
65	Measurement of band offsets and shunt resistance in CdTe solar cells through temperature and intensity dependence of open circuit voltage and photoluminescence. *Solar Energy*, **2019**, 189, 389-397	6.8	8
64	Tailoring MgZnO/CdSeTe Interfaces for Photovoltaics. *IEEE Journal of Photovoltaics*, **2019**, 9, 888-892	3.7	34
63	Combinatorial study of MZO emitters for CdTe-based solar cells **2019**,		1
62	Oxidative segregation of Group V dopants in CdTe solar cells **2019**,		1
61	Doping of CdTe using CuCl2 Solution for Highly Efficient Photovoltaic Devices **2019**,		7
60	Floating Photovoltaic Systems: Assessing the Technical Potential of Photovoltaic Systems on Man-Made Water Bodies in the Continental United States. *Environmental Science & Technology*, **2019**, 53, 1680-1689	10.3	58
59	Highly Efficient Perovskite Solar Modules by Scalable Fabrication and Interconnection Optimization. *ACS Energy Letters*, **2018**, 3, 322-328	20.1	111
58	Mitigation of Crack Formation During Thermo-Mechanical Delamination of CdTe Solar Cells **2018**,		1
57	Thermomechanical Lift-Off and Recontacting of CdTe Solar Cells. *ACS Applied Materials & Interfaces*, **2018**, 10, 44854-44861	9.5	12
56	Increasing markets and decreasing package weight for high-specific-power photovoltaics. *Nature Energy*, **2018**, 3, 1002-1012	62.3	66
55	Interfaces Between CdTe and ALD Al2O3. *IEEE Journal of Photovoltaics*, **2018**, 8, 1858-1861	3.7	11
54	Stability at Scale: Challenges of Module Interconnects for Perovskite Photovoltaics. *ACS Energy Letters*, **2018**, 3, 2502-2503	20.1	23
53	Tandem Solar Cells from Solution-Processed CdTe and PbS Quantum Dots Using a ZnTe-ZnO Tunnel Junction. *Nano Letters*, **2017**, 17, 1020-1027	11.5	55
52	Two-Dimensional Cadmium Chloride Nanosheets in Cadmium Telluride Solar Cells. *ACS Applied Materials & Interfaces*, **2017**, 9, 20561-20565	9.5	24

51	Perovskite ink with wide processing window for scalable high-efficiency solar cells. *Nature Energy*, **2017**, 2,	62.3	398
50	Transparent Ohmic Contacts for Solution-Processed, Ultrathin CdTe Solar Cells. *ACS Energy Letters*, **2017**, 2, 270-278	20.1	27
49	Flexible Glass in Thin Film Photovoltaics **2017**, 211-246		1
48	Evolution of oxygenated cadmium sulfide (CdS:O) during high-temperature CdTe solar cell fabrication. *Solar Energy Materials and Solar Cells*, **2016**, 157, 276-285	6.4	21
47	PECVD Synthesis of Flexible Optical Coatings for Renewable Energy Applications. *Plasma Processes and Polymers*, **2016**, 13, 184-190	3.4	7
46	Planar versus mesoscopic perovskite microstructures: The influence of CH3NH3PbI3 morphology on charge transport and recombination dynamics. *Nano Energy*, **2016**, 22, 439-452	17.1	64
45	Carrier density and lifetime for different dopants in single-crystal and polycrystalline CdTe. *APL Materials*, **2016**, 4, 116102	5.7	34
44	Influence of Electrode Interfaces on the Stability of Perovskite Solar Cells: Reduced Degradation Using MoOx/Al for Hole Collection. *ACS Energy Letters*, **2016**, 1, 38-45	20.1	209
43	Relationship of Open-Circuit Voltage to CdTe Hole Concentration and Lifetime. *IEEE Journal of Photovoltaics*, **2016**, 6, 1641-1644	3.7	21
42	A direct solution deposition approach to CdTe thin films. *Journal of Materials Chemistry C*, **2016**, 4, 9167-9171	7.1	17
41	Semi-insulating Sn-Zr-O: Tunable resistance buffer layers. *Applied Physics Letters*, **2015**, 106, 092106	3.4	1
40	Properties of reactively sputtered oxygenated cadmium sulfide (CdS:O) and their impact on CdTe solar cell performance. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2015**, 33, 021203	2.9	47
39	Modeling moisture ingress through polyisobutylene-based edge-seals. *Progress in Photovoltaics: Research and Applications*, **2015**, 23, 570-581	6.8	26
38	Precision printing and optical modeling of ultrathin SWCNT/C60 heterojunction solar cells. *Nanoscale*, **2015**, 7, 6556-66	7.7	33
37	Controlled Humidity Study on the Formation of Higher Efficiency Formamidinium Lead Triiodide-Based Solar Cells. *Chemistry of Materials*, **2015**, 27, 4814-4820	9.6	108
36	Surface Passivation of CdTe Single Crystals. *IEEE Journal of Photovoltaics*, **2015**, 5, 382-385	3.7	14
35	Evaluation of moisture ingress from the perimeter of photovoltaic modules. *Progress in Photovoltaics: Research and Applications*, **2014**, 22, 1159-1171	6.8	55
34	Internal sensor compensation for increased Ca test sensitivity. *Review of Scientific Instruments*, **2014**, 85, 075102	1.7	8

33	Dependence of the minority-carrier lifetime on the stoichiometry of CdTe using time-resolved photoluminescence and first-principles calculations. *Physical Review Letters*, **2013**, 111, 067402	7.4	96
32	Evaluation of the sensitivity limits of water vapor transmission rate measurements using electrical calcium test. *Review of Scientific Instruments*, **2013**, 84, 025109	1.7	22
31	Comparing the Fundamental Physics and Device Performance of Transparent, Conductive Nanostructured Networks with Conventional Transparent Conducting Oxides. *Advanced Energy Materials*, **2012**, 2, 353-360	21.8	121
30	Process development of CdTe solar cells grown at high temperatures on engineered glass **2012**,		3
29	Chemically treating poly(3-hexylthiophene) defects to improve bulk heterojunction photovoltaics. *ACS Applied Materials & Interfaces*, **2011**, 3, 2042-50	9.5	22
28	Consensus stability testing protocols for organic photovoltaic materials and devices. *Solar Energy Materials and Solar Cells*, **2011**, 95, 1253-1267	6.4	690
27	Air-processed organic photovoltaic devices fabricated with hot press lamination. *Organic Electronics*, **2011**, 12, 108-112	3.5	27
26	Influence of the hole-transport layer on the initial behavior and lifetime of inverted organic photovoltaics. *Solar Energy Materials and Solar Cells*, **2011**, 95, 1382-1388	6.4	107
25	Quantitative calcium resistivity based method for accurate and scalable water vapor transmission rate measurement. *Review of Scientific Instruments*, **2011**, 82, 085101	1.7	58
24	Overcoming degradation in organic photovoltaics: Illuminating the role of fullerene functionalization **2011**,		1
23	Novel transparent conducting barriers for photovoltaics **2010**,		1
22	Enhanced lifetime in unencapsulated organic photovoltaics with air stable electrodes **2010**,		6
21	A simple miniature controlled-atmosphere chamber for optoelectronic characterizations. *Solar Energy Materials and Solar Cells*, **2010**, 94, 1254-1258	6.4	13
20	The Effect of Nanoparticle Shape on the Photocarrier Dynamics and Photovoltaic Device Performance of Poly(3-hexylthiophene):CdSe Nanoparticle Bulk Heterojunction Solar Cells. *Advanced Functional Materials*, **2010**, 20, 2629-2635	15.6	126
19	Photoinduced Degradation of Polymer and Polymer–Fullerene Active Layers: Experiment and Theory. *Advanced Functional Materials*, **2010**, 20, 3476-3483	15.6	229
18	Humidity-resistant high-conductivity amorphous-InZnO transparent conductors **2009**,		2
17	Endohedral fullerenes for organic photovoltaic devices. *Nature Materials*, **2009**, 8, 208-12	27	547
16	Ultrasonically sprayed and inkjet printed thin film electrodes for organic solar cells. *Thin Solid Films*, **2009**, 517, 2781-2786	2.2	93

15	Ultrasonic spray deposition for production of organic solar cells. *Solar Energy Materials and Solar Cells*, **2009**, 93, 447-453	6.4	148
14	Impact of contact evolution on the shelf life of organic solar cells. *Journal of Materials Chemistry*, **2009**, 19, 7638		150
13	Treating Poly(3-hexylthiophene) with Dimethylsulfate Improves Its Photoelectrical Properties. *Chemistry of Materials*, **2008**, 20, 6307-6309	9.6	29
12	Schottky solar cells based on colloidal nanocrystal films. *Nano Letters*, **2008**, 8, 3488-92	11.5	824
11	Short-term metal/organic interface stability investigations of organic photovoltaic devices. *Conference Record of the IEEE Photovoltaic Specialists Conference*, **2008**,		2
10	Do the defects make it work? Defect engineering in pi-conjugated polymers and their solar cells. *Conference Record of the IEEE Photovoltaic Specialists Conference*, **2008**,		3
9	Optimal negative electrodes for poly(3-hexylthiophene): [6,6]-phenyl C61-butyric acid methyl ester bulk heterojunction photovoltaic devices. *Applied Physics Letters*, **2008**, 92, 053307	3.4	160
8	Pathways for the degradation of organic photovoltaic P3HT:PCBM based devices. *Solar Energy Materials and Solar Cells*, **2008**, 92, 746-752	6.4	200
7	Antenna-Coupled Niobium Bolometers for Terahertz Spectroscopy. *IEEE Transactions on Applied Superconductivity*, **2007**, 17, 412-415	1.8	20
6	Superconducting microbolometers for time-resolved terahertz spectroscopy **2007**,		1
5	Niobium Hot Electron Bolometer Development for a Submillimeter Heterodyne Array Camera. *IEEE Transactions on Applied Superconductivity*, **2007**, 17, 403-406	1.8	7
4	Microfabricated fountain pens for high-density DNA arrays. *Genome Research*, **2003**, 13, 2348-52	9.7	29
3	CHAPTER 1. Reliably Measuring the Performance of Emerging Photovoltaic Solar Cells. *RSC Nanoscience and Nanotechnology*,1-32		1
2	Revealing the Importance of Front Interface Quality in Highly Doped CdSexTe1⊠ Solar Cells. *ACS Energy Letters*,4203-4208	20.1	1
1	Direct Deposition of Nonaqueous SnO2 Dispersion by Blade Coating on Perovskites for the Scalable Fabrication of p⊞ Perovskite Solar Cells. *ACS Applied Energy Materials*,	6.1	3