Maikel F A M Van Hest

List of Publications by Year
in descending order

89 papers	6,803 citations	136740 32 h-index	110170 64 g-index
91 all docs	91 docs citations	91 times ranked	7945 citing authors

#	Article	IF	Citations
1	Carrier lifetimes of >1 Î¼s in Sn-Pb perovskites enable efficient all-perovskite tandem solar cells. Science, 2019, 364, 475-479.	6.0	781
2	Scalable fabrication of perovskite solar cells. Nature Reviews Materials, 2018, 3, .	23.3	764
3	Triple-halide wideâ€“band gap perovskites with suppressed phase segregation for efficient tandems. Science, 2020, 367, 1097-1104.	6.0	669
4	Perovskite ink with wide processing window for scalable high-efficiency solar cells. Nature Energy, 2017, 2, .	19.8	499
5	Low-Cost Inorganic Solar Cells: From Ink To Printed Device. Chemical Reviews, 2010, 110, 6571-6594.	23.0	412
6	Enabling Flexible All-Perovskite Tandem Solar Cells. Joule, 2019, 3, 2193-2204.	11.7	331
7	From Defects to Degradation: A Mechanistic Understanding of Degradation in Perovskite Solar Cell Devices and Modules. Advanced Energy Materials, 2020, 10, 1904054.	10.2	256
8	Design of low bandgap tinâ€“lead halide perovskite solar cells to achieve thermal, atmospheric and operational stability. Nature Energy, 2019, 4, 939-947.	19.8	235
9	Bimolecular Additives Improve Wide-Band-Gap Perovskites for Efficient Tandem Solar Cells with CIGS. Joule, 2019, 3, 1734-1745.	11.7	227
10	General mobility and carrier concentration relationship in transparent amorphous indium zinc oxide films. Physical Review B, 2008, 77, .	1.1	208
11	Roll-to-Roll Printing of Perovskite Solar Cells. ACS Energy Letters, 2018, 3, 2558-2565.	8.8	199
12	Outlook and Challenges of Perovskite Solar Cells toward Terawatt-Scale Photovoltaic Module Technology. Joule, 2018, 2, 1437-1451.	11.7	162
13	The Remarkable Thermal Stability of Amorphous Inâ€Znâ€O Transparent Conductors. Advanced Functional Materials, 2008, 18, 3169-3178.	7.8	155
14	Scalable slot-die coating of high performance perovskite solar cells. Sustainable Energy and Fuels, 2018, 2, 2442-2449.	2.5	155
15	Highly Efficient Perovskite Solar Modules by Scalable Fabrication and Interconnection Optimization. ACS Energy Letters, 2018, 3, 322-328.	8.8	143
16	High-Performance Flexible Perovskite Solar Cells on Ultrathin Glass: Implications of the TCO. Journal of Physical Chemistry Letters, 2017, 8, 4960-4966.	2.1	111
17	The formation mechanism for printed silver-contacts for silicon solar cells. Nature Communications, 2016, 7, 11143.	5.8	106
18	Ultrasonically sprayed and inkjet printed thin film electrodes for organic solar cells. Thin Solid Films, 2009, 517, 2781-2786.	0.8	99

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19	Degradation of Highly Alloyed Metal Halide Perovskite Precursor Inks: Mechanism and Storage Solutions. ACS Energy Letters, 2018, 3, 979-985.	8.8	84
20	Scalable Deposition of High-Efficiency Perovskite Solar Cells by Spray-Coating. ACS Applied Energy Materials, 2018, 1, 1853-1857.	2.5	78
21	Improving Low-Bandgap Tinâ€“Lead Perovskite Solar Cells via Contact Engineering and Gas Quench Processing. ACS Energy Letters, 2020, 5, 1215-1223.	8.8	78
22	Pulsed laser deposited Nb doped TiO2 as a transparent conducting oxide. Thin Solid Films, 2008, 516, 4133-4138.	0.8	65
23	Sputtered Nb- and Ta-doped TiO2 transparent conducting oxide films on glass. Journal of Materials Research, 2007, 22, 2832-2837.	1.2	49
24	The Molybdenum Oxide Interface Limits the High-Temperature Operational Stability of Unencapsulated Perovskite Solar Cells. ACS Energy Letters, 2020, 5, 2349-2360.	8.8	49
25	Three-terminal IIIâ€“V/Si tandem solar cells enabled by a transparent conductive adhesive. Sustainable Energy and Fuels, 2020, 4, 549-558.	2.5	46
26	Scalable Fabrication of Perovskite Solar Cells to Meet Climate Targets. Joule, 2018, 2, 2464-2476.	11.7	45
27	Learning from existing photovoltaic technologies to identify alternative perovskite module designs. Energy and Environmental Science, 2020, 13, 3393-3403.	15.6	43
28	Hydrazine-Free Solution-Deposited CuIn(S,Se)₂ Solar Cells by Spray Deposition of Metal Chalcogenides. ACS Applied Materials & Interfaces, 2016, 8, 11893-11897.	4.0	38
29	A novel blanket annealing process to achieve highly transparent and conducting Al doped ZnO thin films: Its mechanism and application in perovskite solar cells. Solar Energy, 2018, 174, 815-825.	2.9	37
30	Effect of deposition distance and temperature on electrical, optical and structural properties of radio-frequency magnetron-sputtered gallium-doped zinc oxide. Thin Solid Films, 2010, 519, 190-196.	0.8	36
31	Influence of dipping cycles on physical, optical, and electrical properties of Cu2NiSnS4: Direct solution dip coating for photovoltaic applications. Journal of Alloys and Compounds, 2017, 725, 510-518.	2.8	36
32	Radiative Thermal Annealing/in Situ X-ray Diffraction Study of Methylammonium Lead Triiodide: Effect of Antisolvent, Humidity, Annealing Temperature Profile, and Film Substrates. Chemistry of Materials, 2017, 29, 5931-5941.	3.2	35
33	Toward Scalable Perovskite Solar Modules Using Blade Coating and Rapid Thermal Processing. ACS Applied Energy Materials, 2020, 3, 3714-3720.	2.5	35
34	Curtailing Perovskite Processing Limitations via Lamination at the Perovskite/Perovskite Interface. ACS Energy Letters, 2018, 3, 1192-1197.	8.8	33
35	Superhydrophilic Transparent Titania Films by Supersonic Aerosol Deposition. Journal of the American Ceramic Society, 2013, 96, 1596-1601.	1.9	31
36	Stability at Scale: Challenges of Module Interconnects for Perovskite Photovoltaics. ACS Energy Letters, 2018, 3, 2502-2503.	8.8	31

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37	Stable pâ€“iâ€“n FAPbBr₃ Devices with Improved Efficiency Using Sputtered ZnO as Electron Transport Layer. Advanced Materials Interfaces, 2017, 4, 1601143.	1.9	26
38	Fabrication of nanoporous titania on glass and transparent conducting oxide substrates by anodization of titanium films. Journal of Materials Research, 2007, 22, 681-687.	1.2	25
39	Transparent Conductive Adhesives for Tandem Solar Cells Using Polymerâ€“Particle Composites. ACS Applied Materials & Interfaces, 2018, 10, 8086-8091.	4.0	25
40	Improved fill factors in solution-processed ZnO/Cu2O photovoltaics. Thin Solid Films, 2013, 536, 280-285.	0.8	24
41	NiobiumâEDoped Titania Photocatalyst Film Prepared via a Nonaqueous SolâEGel Method. Journal of the American Ceramic Society, 2013, 96, 2623-2627.	1.9	24
42	Combinatorial Chemical Bath Deposition of CdS Contacts for Chalcogenide Photovoltaics. ACS Combinatorial Science, 2016, 18, 583-589.	3.8	23
43	Carbon- and Oxygen-Free Cu(InGa)(SSe)₂ Solar Cell with a 4.63% Conversion Efficiency by Electrostatic Spray Deposition. ACS Applied Materials & Interfaces, 2014, 6, 8369-8377.	4.0	21
44	Stabilization of wide band-gap p-type wurtzite MnTe thin films on amorphous substrates. Journal of Materials Chemistry C, 2018, 6, 6297-6304.	2.7	21
45	III-V/Si wafer bonding using transparent, conductive oxide interlayers. Applied Physics Letters, 2015, 106, .	1.5	20
46	Combinatorial Growth and Analysis of the Transparent Conducting Oxide ZnO/In(IZO). Macromolecular Rapid Communications, 2004, 25, 344-347.	2.0	17
47	Tuning Hydrophobicity with Honeycomb Surface Structure and Hydrophilicity with <scp><scp>CF</scp></scp>₄ Plasma Etching for AerosolâEDeposited Titania Films. Journal of the American Ceramic Society, 2012, 95, 3955-3961.	1.9	16
48	Solution Synthesis and Characterization of Indiumâ"Zinc Formate Precursors for Transparent Conducting Oxides. Inorganic Chemistry, 2010, 49, 5424-5431.	1.9	13
49	Radio-frequency superimposed direct current magnetron sputtered Ga:ZnO transparent conducting thin films. Journal of Applied Physics, 2012, 111, .	1.1	13
50	Measurement of Relaxation Time of Excess Carriers in Si and CIGS Solar Cells by Modulated Electroluminescence Technique. Physica Status Solidi (A) Applications and Materials Science, 2018, 215, 1700267.	0.8	13
51	Carrier gradients and the role of charge selective contacts in lateral heterojunction all back contact perovskite solar cells. Cell Reports Physical Science, 2021, 2, 100520.	2.8	12
52	Direct Deposition of Nonaqueous SnO2 Dispersion by Blade Coating on Perovskites for the Scalable Fabrication of pâ€“iâ€“n Perovskite Solar Cells. ACS Applied Energy Materials, 0, , .	2.5	12
53	Multi-Layer Inkjet Printed Contacts for Silicon Solar Cells. , 2006, , .		11
54	Direct write metallization for photovoltaic cells and scaling thereof. , 2010, , .		10

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55	Atmospheric pressure synthesis of In₂Se₃, Cu₂Se, and CuInSe₂ without external selenization from solution precursors. Journal of Materials Research, 2009, 24, 1375-1387.	1.2	9
56	Inkjet printed metallizations for Cu(In_{1â^'x}Ga_x)Se₂ photovoltaic cells. Progress in Photovoltaics: Research and Applications, 2011, 19, 973-976.	4.4	9
57	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.	2.9	9
58	Indium zinc oxide mediated wafer bonding for IIIâ€“V/Si tandem solar cells. , 2015, , .		8
59	Spray deposition of high quality CuInSe<inf>2</inf> and CdTe films. Conference Record of the IEEE Photovoltaic Specialists Conference, 2008, , .	0.0	7
60	Effect of supersonic spraying impact velocity on opto-electric properties of transparent conducting flexible films consisting of silver nanowire, ITO, and polyimide multilayers. Journal of Alloys and Compounds, 2018, 739, 653-659.	2.8	7
61	Synthesis of CZTS/Se and Their Solid Solution from Electrodeposited Cuâ€“Snâ€“Zn Metal Precursor: A Study of S and Se Replacement Reaction. ACS Applied Energy Materials, 2018, 1, 3351-3358.	2.5	7
62	Inkjet printed contacts for use in photovoltaics. , 2009, , .		6
63	Back contact band offset study of Mo-CZTS based solar cell structure by using XPS/UPS techniques. , 2015, , .		6
64	Wettability and photocatalysis of CF4 plasma etched titania films of honeycomb structure. Ceramics International, 2013, 39, 9737-9742.	2.3	5
65	Improving mechanical stability and electrical properties of silver nanowire films with a zinc tin oxide overcoat. , 2014, , .		5
66	Transparent Conductive Adhesives for Tandem Solar Cells. , 2017, , .		5
67	Rapid thermal processing of costâ€effective contacts for silicon solar cells. Progress in Photovoltaics: Research and Applications, 2019, 27, 453-459.	4.4	5
68	Direct-write contacts: Metallization and contact formation. Conference Record of the IEEE Photovoltaic Specialists Conference, 2008, , .	0.0	4
69	Non-contact printed aluminum metallization of Si photovoltaic devices. , 2012, , .		3
70	Printed monolithic interconnects for photovoltaic applications. , 2014, , .		3
71	Non-contact printed aluminum for metallization of Si photovoltaics. Thin Solid Films, 2014, 556, 525-528.	0.8	3
72	Atmospheric-pressure processed silver nanowire (Ag-NW) / ZnO composite transparent conducting contacts. , 2015, , .		3

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73	Development of solution-processed nanowire composites for opto-electronics. MRS Communications, 2016, 6, 341-347.	0.8	3
74	Solution deposition of amorphous IZO films by ultrasonic spray pyrolysis. , 2009, , .		2
75	Processing-phase diagrams: a new tool for solution-deposited thin-film development applied to the In5O(OPri)13â€“In2O3 system. Journal of Materials Chemistry C, 2014, 2, 2360.	2.7	2
76	Solvation of NiOx for hole transport layer deposition in perovskite solar cells. Nanotechnology, 2021, 33, .	1.3	2
77	Field assisted simultaneous synthesis and transfer FASST® method used in conjunction with liquid precursors to produce CIGS solar cells. , 2010, , .		1
78	One-Step High-Throughput Blade Coating of Perovskite Solar Cells. , 2018, , .		1
79	Transparent conducting contacts based on zinc oxide substitutionally doped with gallium. Conference Record of the IEEE Photovoltaic Specialists Conference, 2008, , .	0.0	0
80	Optimization of conductivity and transparency in amorphous In-ZN-O transparent conductors. Conference Record of the IEEE Photovoltaic Specialists Conference, 2008, , .	0.0	0
81	High-Efficiency Low-Cost Photovoltaic Modules Based on CIGS Thin Films from Solution Precursors. Materials Research Society Symposia Proceedings, 2010, 1247, 1.	0.1	0
82	Solution deposited precursors and rapid optical processing used in the production of CIGS solar cells. , 2011, , .		0
83	Using amorphous zinc-tin oxide alloys in the emitter structure of CIGS PV devices. , 2012, , .		0
84	Printed module interconnects. , 2015, , .		0
85	Front contact metallization of Si solar cells: Insights from in-situ X-ray diffraction. , 2015, , .		0
86	Stability of Tin-Lead Halide Perovskite Solar Cells. , 2019, , .		0
87	(Invited) Scalable Roll-to-Roll and Sheet-to-Sheet Processing for Perovskite Photovoltaics. ECS Meeting Abstracts, 2019, , .	0.0	0
88	Evaluating Interconnection Schemes for Semi-transparent Perovskite Mini-modules. , 2019, , .		0
89	Blade-Coated Electron Transport Layers to Enable Scalable Perovskite Photovoltaics. , 2020, , .		0