Harald Hoppe

List of Publications by Year in descending order

128 papers	9,977 citations	87888 38 h-index	33894 99 g-index
131 all docs	131 docs citations	131 times ranked	10413 citing authors

#	Article	IF	Citations
1	Organic solar cells: An overview. Journal of Materials Research, 2004, 19, 1924-1945.	2.6	2,242
2	Morphology of polymer/fullerene bulk heterojunction solar cells. Journal of Materials Chemistry, 2006, 16, 45-61.	6.7	1,341
3	Consensus stability testing protocols for organic photovoltaic materials and devices. Solar Energy Materials and Solar Cells, 2011, 95, 1253-1267.	6.2	812
4	Consensus statement for stability assessment and reporting for perovskite photovoltaics based on ISOS procedures. Nature Energy, 2020, 5, 35-49.	39.5	797
5	Material Solubilityâ€Photovoltaic Performance Relationship in the Design of Novel Fullerene Derivatives for Bulk Heterojunction Solar Cells. Advanced Functional Materials, 2009, 19, 779-788.	14.9	355
6	Comparative Indoor and Outdoor Degradation of Organic Photovoltaic Cells via Inter-laboratory Collaboration. Polymers, 2016, 8, 1.	4.5	285
7	P3HT/PCBM Bulk Heterojunction Solar Cells: Impact of Blend Composition and 3D Morphology on Device Performance. Advanced Functional Materials, 2010, 20, 1458-1463.	14.9	259
8	Stabilization of the nanomorphology of polymerâ€“fullerene â€œbulk heterojunctionâ€•blends using a novel polymerizable fullerene derivative. Journal of Materials Chemistry, 2005, 15, 5158.	6.7	221
9	Long-lived photoinduced charge separation for solar cell applications in phthalocyanineâ€“fulleropyrrolidine dyad thin filmsElectronic supplementary information (ESI) available: plots of the refractive index, extinction coefficient and dielectric function of Pc-C60. See http://www.rsc.org/suppdata/jm/b2/b212621d/. Journal of Materials Chemistry, 2003, 13, 700-704.	6.7	210
10	Effect of annealing of poly(3-hexylthiophene)/fullerene bulk heterojunction composites on structural and optical properties. Thin Solid Films, 2006, 496, 679-682.	1.8	161
11	Procedures and Practices for Evaluating Thinâ€Film Solar Cell Stability. Advanced Energy Materials, 2015, 5, 1501407.	19.5	137
12	Investigation of the degradation mechanisms of a variety of organic photovoltaic devices by combination of imaging techniquesâ€”the ISOS-3 inter-laboratory collaboration. Energy and Environmental Science, 2012, 5, 6521.	30.8	134
13	An inter-laboratory stability study of roll-to-roll coated flexible polymer solar modules. Solar Energy Materials and Solar Cells, 2011, 95, 1398-1416.	6.2	132
14	Anthracene Based Conjugated Polymers: Correlation between Ï€â^'Ï€-Stacking Ability, Photophysical Properties, Charge Carrier Mobility, and Photovoltaic Performance. Macromolecules, 2010, 43, 1261-1269.	4.8	117
15	The ISOS-3 inter-laboratory collaboration focused on the stability of a variety of organic photovoltaic devices. RSC Advances, 2012, 2, 882-893.	3.6	108
16	Interlaboratory outdoor stability studies of flexible roll-to-roll coated organic photovoltaic modules: Stability over 10,000 h. Solar Energy Materials and Solar Cells, 2013, 116, 187-196.	6.2	107
17	Polymer solar cells with enhanced lifetime by improved electrode stability and sealing. Solar Energy Materials and Solar Cells, 2013, 117, 59-66.	6.2	93
18	Correlation of charge transport with structural order in highly ordered meltâ€crystallized poly(3â€hexylthiophene) thin films. Journal of Polymer Science, Part B: Polymer Physics, 2013, 51, 943-951.	2.1	89

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19	Edge sealing for low cost stability enhancement of roll-to-roll processed flexible polymer solar cell modules. Solar Energy Materials and Solar Cells, 2012, 97, 157-163.	6.2	87
20	Side Chain Influence on Electrochemical and Photovoltaic Properties of Yne-Containing Poly(phenylene vinylene)s. Macromolecular Rapid Communications, 2005, 26, 1389-1394.	3.9	71
21	Influence of doping on charge carrier collection in normal and inverted geometry polymer:fullerene solar cells. Scientific Reports, 2013, 3, .	3.3	65
22	Absorption and crystallinity of poly(3-hexylthiophene)/fullerene blends in dependence on annealing temperature. Thin Solid Films, 2006, 511-512, 483-485.	1.8	61
23	Quality control of roll-to-roll processed polymer solar modules by complementary imaging methods. Solar Energy Materials and Solar Cells, 2012, 97, 176-180.	6.2	57
24	Synthesis and properties of fluorene-based polyheteroarylenes for photovoltaic devices. Journal of Polymer Science Part A, 2006, 44, 6952-6961.	2.3	56
25	Sub-bandgap absorption in organic solar cells: experiment and theory. Physical Chemistry Chemical Physics, 2013, 15, 16494.	2.8	55
26	Inverse relation between photocurrent and absorption layer thickness in polymer solar cells. Physica Status Solidi - Rapid Research Letters, 2007, 1, R40-R42.	2.4	51
27	[70]Fullereneâ€Based Materials for Organic Solar Cells. ChemSusChem, 2011, 4, 119-124.	6.8	51
28	Multiparametric optimization of polymer solar cells: A route to reproducible high efficiency. Solar Energy Materials and Solar Cells, 2009, 93, 508-513.	6.2	49
29	Quality control of polymer solar modules by lock-in thermography. Journal of Applied Physics, 2010, 107, 014505.	2.5	48
30	Optimal geometric design of monolithic thin-film solar modules: Architecture of polymer solar cells. Solar Energy Materials and Solar Cells, 2012, 97, 119-126.	6.2	47
31	Water ingress into and climate dependent lifetime of organic photovoltaic cells investigated by calcium corrosion tests. Solar Energy Materials and Solar Cells, 2014, 120, 685-690.	6.2	47
32	Influence of Thermal Annealing on PCDTBT:PCBM Composition Profiles. Advanced Energy Materials, 2014, 4, 1300981.	19.5	47
33	Kelvin Probe Force Microscopy Study of Conjugated Polymer/Fullerene Organic Solar Cells. Japanese Journal of Applied Physics, 2005, 44, 5370-5373.	1.5	46
34	Long-Term Stabilization of Organic Solar Cells Using Hindered Phenols as Additives. ACS Applied Materials & Interfaces, 2014, 6, 18525-18537.	8.0	46
35	Improvement in carrier mobility and photovoltaic performance through random distribution of segments of linear and branched side chains. Journal of Materials Chemistry, 2010, 20, 9726.	6.7	43
36	Baselines for Lifetime of Organic Solar Cells. Advanced Energy Materials, 2016, 6, 1600910.	19.5	42

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37	Intercorrelation between Structural Ordering and Emission Properties in Photoconducting Polymers. Macromolecules, 2010, 43, 306-315.	4.8	40
38	Anisotropic optical properties of thin poly(3-octylthiophene)-films as a function of preparation conditions. Synthetic Metals, 2004, 143, 113-117.	3.9	39
39	Organic solar cells characterized by dark lock-in thermography. Solar Energy Materials and Solar Cells, 2010, 94, 642-647.	6.2	39
40	On the stability of a variety of organic photovoltaic devices by IPCE and in situ IPCE analyses â€“ the ISOS-3 inter-laboratory collaboration. Physical Chemistry Chemical Physics, 2012, 14, 11824.	2.8	38
41	Agrivoltaicsâ€”The Perfect Fit for the Future of Organic Photovoltaics. Advanced Energy Materials, 2021, 11, 2002551.	19.5	38
42	Polymer Solar Cells. , 2007, , 1-86.		37
43	Non-fullerene acceptor photostability and its impact on organic solar cell lifetime. Cell Reports Physical Science, 2021, 2, 100498.	5.6	35
44	A systematic study of the anisotropic optical properties of thin poly(3-octylthiophene)-films in dependence on growth parameters. Thin Solid Films, 2004, 451-452, 69-73.	1.8	34
45	Flexible ITO-free polymer solar cells based on highly conductive PEDOT:PSS and a printed silver grid. Solar Energy Materials and Solar Cells, 2014, 130, 551-554.	6.2	34
46	Revelation of Interfacial Energetics in Organic Multiheterojunctions. Advanced Science, 2017, 4, 1600331.	11.2	33
47	Introduction of a Novel Figure of Merit for the Assessment of Transparent Conductive Electrodes in Photovoltaics: Exact and Approximate Form. Advanced Energy Materials, 2021, 11, 2100875.	19.5	33
48	TOF-SIMS investigation of degradation pathways occurring in a variety of organic photovoltaic devices â€“ the ISOS-3 inter-laboratory collaboration. Physical Chemistry Chemical Physics, 2012, 14, 11780.	2.8	32
49	Fullerene solubilityâ€“current density relationship in polymer solar cells. Physica Status Solidi - Rapid Research Letters, 2008, 2, 263-265.	2.4	31
50	Influence of polymer solar cell geometry on series resistance and device efficiency. Physica Status Solidi (A) Applications and Materials Science, 2009, 206, 2771-2774.	1.8	31
51	Correlation between polymer architecture, mesoscale structure and photovoltaic performance in side-chain-modified poly(p-arylene-ethynylene)-alt-poly(p-arylene-vinylene): PCBM bulk-heterojunction solar cells. Polymer, 2011, 52, 3819-3826.	3.8	31
52	Multiple stress degradation analysis of the active layer in organic photovoltaics. Solar Energy Materials and Solar Cells, 2014, 120, 654-668.	6.2	30
53	Control of charge generation and recombination in ternary polymer/polymer:fullerene photovoltaic blends using amorphous and semi-crystalline copolymers as donors. Physical Chemistry Chemical Physics, 2014, 16, 20329-20337.	2.8	30
54	Morphology evaluation of a polymerâ€“fullerene bulk heterojunction ensemble generated by the fullerene derivatization. Journal of Materials Chemistry, 2012, 22, 15987.	6.7	29

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55	Optical order of the polymer phase within polymer/fullerene blend films. Journal of Polymer Science, Part B: Polymer Physics, 2012, 50, 1363-1373.	2.1	28
56	Photon recycling across a ultraviolet-blocking layer by luminescence in polymer solar cells. Journal of Applied Physics, 2012, 112, 034517.	2.5	26
57	Controlling Exciton Diffusion and Fullerene Distribution in Photovoltaic Blends by Side Chain Modification. Journal of Physical Chemistry Letters, 2015, 6, 3054-3060.	4.6	26
58	Polymer aggregation control in polymerâ€“fullerene bulk heterojunctions adapted from solution. Journal of Materials Chemistry A, 2015, 3, 395-403.	10.3	26
59	Sub-bandgap absorption in polymer-fullerene solar cells studied by temperature-dependent external quantum efficiency and absorption spectroscopy. Chemical Physics Letters, 2012, 542, 70-73.	2.6	25
60	Correlation between near infrared-visible absorption, intrinsic local and global sheet resistance of poly(3,4-ethylenedioxy-thiophene) poly(styrene sulfonate) thin films. Applied Physics Letters, 2012, 100, 153301.	3.3	24
61	Charge carrier mobility, photovoltaic, and electroluminescent properties of anthraceneâ€based conjugated polymers bearing randomly distributed side chains. Journal of Polymer Science Part A, 2012, 50, 3425-3436.	2.3	23
62	Worldwide outdoor round robin study of organic photovoltaic devices and modules. Solar Energy Materials and Solar Cells, 2014, 130, 281-290.	6.2	23
63	Morphology, Crystal Structure and Charge Transport in Donorâ€“Acceptor Block Copolymer Thin Films. ACS Applied Materials & Interfaces, 2015, 7, 12309-12318.	8.0	23
64	Long-term stabilization of organic solar cells using UV absorbers. Journal Physics D: Applied Physics, 2016, 49, 125604.	2.8	23
65	Long-term stabilization of organic solar cells using hydroperoxide decomposers as additives. Applied Physics A: Materials Science and Processing, 2016, 122, 1.	2.3	23
66	Morphology controlled open circuit voltage in polymer solar cells. Physica Status Solidi - Rapid Research Letters, 2011, 5, 247-249.	2.4	22
67	Ellipsometric Investigation of the Shape of Nanodomains in Polymer/Fullerene Films. Advanced Energy Materials, 2011, 1, 684-689.	19.5	22
68	Quantitative analysis of electroluminescence images from polymer solar cells. Journal of Applied Physics, 2012, 111, 024505.	2.5	22
69	Self-Similarity and Pattern Selection in the Roughening of Binary Liquid Films. Physical Review Letters, 2001, 86, 4863-4866.	7.8	21
70	Polymer BHJ solar cell performance tuning by C₆₀ fullerene derivative alkyl sideâ€chain length. Journal of Polymer Science, Part B: Polymer Physics, 2012, 50, 1562-1566.	2.1	20
71	Photophysical, electrochemical and photovoltaic properties of thiophene-containing arylene-ethynylene/arylene-vinylene polymers. Thin Solid Films, 2006, 511-512, 486-488.	1.8	19
72	Methods in determination of morphological degradation of polymer:fullerene solar cells. Synthetic Metals, 2012, 161, 2534-2539.	3.9	19

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73	Influence of Interface Doping on Charge-Carrier Mobilities and Sub-Bandgap Absorption in Organic Solar Cells. Journal of Physical Chemistry C, 2015, 119, 9036-9040.	3.1	19
74	Fully Rollâ€toâ€Roll Printed P3HT/Indeneâ€C60â€Bisadduct Modules with High Openâ€Circuit Voltage and Efficiency. Solar Rrl, 2018, 2, 1700160.	5.8	19
75	Stability of organic solar cells with PCDTBT donor polymer: An interlaboratory study. Journal of Materials Research, 2018, 33, 1909-1924.	2.6	17
76	Impact of P3HT materials properties and layer architecture on OPV device stability. Solar Energy Materials and Solar Cells, 2019, 202, 110151.	6.2	17
77	Efficient polymer solar cell modules. Synthetic Metals, 2009, 159, 2358-2361.	3.9	16
78	Modification of the Active Layer/PEDOT:PSS Interface by Solvent Additives Resulting in Improvement of the Performance of Organic Solar Cells. ACS Applied Materials & Interfaces, 2014, 6, 11068-11081.	8.0	16
79	Comparison of distributed vs. lumped series resistance modeling of thin-film solar cells and modules: Influence on the geometry-dependent efficiency. Physica Status Solidi (A) Applications and Materials Science, 2015, 212, 1991-2000.	1.8	16
80	Influence of Phonon Scattering on Exciton and Charge Diffusion in Polymerâ€Fullerene Solar Cells. Advanced Energy Materials, 2012, 2, 999-1003.	19.5	15
81	Aluminum-doped ZnO thin films deposited on flat and nanostructured glass substrates: Quality and performance for applications in organic solar cells. Solar Energy, 2018, 172, 219-224.	6.1	15
82	Aging of polymer/fullerene films: Temporal development of composition profiles. Synthetic Metals, 2012, 161, 2540-2543.	3.9	14
83	Why Organic Electronic Devices Comprising PEDOT:PSS Electrodes Should be Fabricated on Metal Free Substrates. ACS Applied Electronic Materials, 2021, 3, 929-943.	4.3	14
84	Direct Correlation of the Organic Solar Cell Device Performance to the Inâ€Depth Distribution of Highly Ordered Polymer Domains in Polymer/Fullerene Films. Advanced Energy Materials, 2013, 3, 1463-1472.	19.5	13
85	Quantitative evaluation of inhomogeneous device operation in thin film solar cells by luminescence imaging. Applied Physics Letters, 2015, 107, .	3.3	12
86	Improved phase separation in polymer solar cells by solvent blending. Journal of Polymer Science, Part B: Polymer Physics, 2013, 51, 868-874.	2.1	11
87	Thermally induced degradation of PBDTTT-CT:PCBM based polymer solar cells. Journal Physics D: Applied Physics, 2019, 52, 475501.	2.8	11
88	Anthraceneâ€containing PPEâ€PPV copolymers: Effect of sideâ€chain nature and length on photophysical and photovoltaic properties. Physica Status Solidi (A) Applications and Materials Science, 2009, 206, 2695-2699.	1.8	10
89	Uphill and downhill charge generation from charge transfer to charge separated states in organic solar cells. Journal of Materials Chemistry C, 2021, 9, 14463-14489.	5.5	10
90	Improved Hole Extraction Selectivity of Polymer Solar Cells by Combining PEDOT:PSS with WO₃. Energy Technology, 2021, 9, 2100474.	3.8	10

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91	Back Cover (Phys. Status Solidi A 12/2009). Physica Status Solidi (A) Applications and Materials Science, 2009, 206, .	1.8	9
92	Stability of polymer solar cells: Dependence on working pressure. Solar Energy Materials and Solar Cells, 2013, 111, 212-215.	6.2	9
93	High-temperature stable single carrier hole only device based on conjugated polymers. Journal of Materials Research, 2018, 33, 1860-1867.	2.6	9
94	Irradiation-induced degradation of PTB7 investigated by valence band and S 2pphotoelectron spectroscopy. Nanotechnology, 2016, 27, 324005.	2.6	8
95	Disentanglement of Degradation Mechanisms by Analyzing Aging Dynamics of Environmentally Friendly Processed Polymer Solar Cells. Energy Technology, 2020, 8, 2000116.	3.8	7
96	Electroluminescence as Characterization Tool for Polymer Solar Cells and Modules. Energy Procedia, 2012, 31, 167-172.	1.8	6
97	Locally resolved large scale phase separation in polymer:fullerene blends. Journal of Materials Chemistry A, 2016, 4, 1244-1250.	10.3	6
98	Nanoscale Morphology from Donorâ€“Acceptor Block Copolymers: Formation and Functions. Advances in Polymer Science, 2017, , 157-191.	0.8	6
99	Organic solar cells based on anthracene-containing PPEâ€“PPVs and non-fullerene acceptors. Chemical Papers, 2018, 72, 1769-1778.	2.2	6
100	Spatial Conductivity Distribution in Thin PEDOT:PSS Films after Laser Microannealing. ACS Applied Electronic Materials, 2021, 3, 2825-2831.	4.3	6
101	Correlating domain purity with charge carrier mobility in bulk heterojunction polymer solar cells. Proceedings of SPIE, 2014, , .	0.8	5
102	Controlling donor crystallinity and phase separation in bulk heterojunction solar cells by the introduction of orthogonal solvent additives. MRS Advances, 2018, 3, 1891-1900.	0.9	5
103	Effect of Side Chains on Molecular Conformation of Anthracene-Ethynylene-Phenylene-Vinylene Oligomers: A Comparative Density Functional Study With and Without Dispersion Interaction. Journal of Physical Chemistry A, 2016, 120, 3835-3841.	2.5	4
104	Combined characterization techniques to understand the stability of a variety of organic photovoltaic devices: the ISOS-3 inter-laboratory collaboration. , 2012, , .		3
105	Effect of Varying Thiophene Units on Chargeâ€Transport and Photovoltaic Properties of Poly(phenylene) Tj ETQq1 1 0.784314 rgBT /O 215, 1473-1484.	2.2	3
106	Emerging Thinâ€Film Photovoltaics: Stabilize or Perish. Advanced Energy Materials, 2015, 5, .	19.5	3
107	Comparative indoor and outdoor degradation of organic photovoltaic cells via inter-laboratory collaboration. , 2015, , .		3
108	Controlling Metal Halide Perovskite Crystal Growth via Microcontact Printed Hydrophobicâ€Hydrophilic Templates. Crystal Research and Technology, 2022, 57, .	1.3	3

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109	Correlation Between Crystallinity and Solarâ€Cell Efficiency of the Lowâ€Bandgap Polymer PDDTP. Macromolecular Chemistry and Physics, 2010, 211, 1689-1694.	2.2	2
110	Stability and degradation of organic photovoltaics fabricated, aged, and characterized by the ISOS 3 inter-laboratory collaboration. , 2012, , .		2
111	Modulation of charge carrier mobility by side-chain engineering of bi(thienylenevinylene)thiophene containing PPEâ€“PPVs. RSC Advances, 2016, 6, 51642-51648.	3.6	2
112	Current Density and Heating Patterns in Organic Solar Cells Reproduced by Finite Element Modeling. Solar Rrl, 2017, 1, 1700018.	5.8	2
113	Aluminum Electrode Insulation Dynamics via Interface Oxidation by Reactant Diffusion in Organic Layers. Physica Status Solidi (A) Applications and Materials Science, 2018, 215, 1800474.	1.8	2
114	Compact multifunctional source-meter system for characterisation of laboratory-scale solar cell devices. Measurement Science and Technology, 2019, 30, 035901.	2.6	2
115	Performance and Stability of Organic Solar Cells Bearing Nitrogen Containing Electron Extraction Layers. Energy Technology, 2020, 8, 2000117.	3.8	2
116	An effective method of reconnoitering currentâ€“voltage (IV) characteristics of organic solar cells. Journal of Applied Physics, 2022, 132, .	2.5	2
117	Laser structuring of thin films for organic solar cells. , 2010, , .		1
118	â€œPolymer Solar Modules: Laser Structuring and Quality Control by Lock-In Thermographyâ€. Materials Research Society Symposia Proceedings, 2012, 1390, 77.	0.1	1
119	Revealing the Active Layer Morphology within Complete Solar Cell Devices via Spectroscopic Ellipsometry. Journal of Physical Chemistry C, 2013, 117, 25205-25210.	3.1	1
120	Impact of methanol top-casting or washing on the polymer solar cell performance. Proceedings of SPIE, 2013, , .	0.8	1
121	Synthesis and characterization of organically linked ZnO nanoparticles. Physica Status Solidi (A) Applications and Materials Science, 2012, 209, 2212-2216.	1.8	0
122	Solar Cells: From Sunlight into Electricity. International Journal of Photoenergy, 2015, 2015, 1-1.	2.5	0
123	EU COST Action MP1307 â€” Unravelling the degradation mechanisms of emerging solar cell technologies. , 2016, , .		0
124	Organic Multiheterojunctions: Revelation of Interfacial Energetics in Organic Multiheterojunctions (Adv. Sci. 4/2017). Advanced Science, 2017, 4, .	11.2	0
125	Current density and heating patterns in organic solar cells: modelling and imaging experiments (Conference Presentation). , 2016, , .		0
126	Tco WORK FUNCTION TUNING BY NANODIAMONDS. , 2020, , .		0

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127	Response to Christopher P. Muzzillo's Comments on â€œIntroduction of a Novel Figure of Merit for the Assessment of Transparent Conductive Electrodes in Photovoltaics: Exact and Approximate Formâ€¦ Advanced Energy Materials, 0, , 2200828.	19.5	0
128	Role of the postâ€annealing conditions on the conductivity of niobium doped titanium dioxide electrodes prepared by solâ€“gel and their function in organic solar cells. Physica Status Solidi C: Current Topics in Solid State Physics, 2017, 14, 1700011.	0.8	0