Thomas Kirchartz

List of Publications by Year in Descending Order

212 papers	11,345 citations	59 h-index	101 g-index
232 ext. papers	13,299 ext. citations	10.8 avg, IF	6.83 L-index

#	Paper	IF	Citations
212	Consensus statement: Standardized reporting of power-producing luminescent solar concentrator performance. *Joule*, **2022**, 6, 8-15	27.8	14
211	Quantifying Efficiency Limitations in All-Inorganic Halide Perovskite Solar Cells.. *Advanced Materials* , **2022**, e2108132	24	5
210	Multilayer Capacitances: How Selective Contacts Affect Capacitance Measurements of Perovskite Solar Cells **2022**, 1,		4
209	Roadmap on organic–inorganic hybrid perovskite semiconductors and devices. *APL Materials*, **2021**, 9, 109202	5.7	28
208	Quantifying the Absorption Onset in the Quantum Efficiency of Emerging Photovoltaic Devices. *Advanced Energy Materials*, **2021**, 11, 2100022	21.8	20
207	Interface Optimization via Fullerene Blends Enables Open-Circuit Voltages of 1.35 V in CH3NH3Pb(I0.8Br0.2)3 Solar Cells. *Advanced Energy Materials*, **2021**, 11, 2003386	21.8	28
206	Single- or double A-site cations in A3Bi2I9 bismuth perovskites: What is the suitable choice?. *Journal of Materials Research*, **2021**, 36, 1794-1804	2.5	6
205	Understanding Transient Photoluminescence in Halide Perovskite Layer Stacks and Solar Cells. *Advanced Energy Materials*, **2021**, 11, 2003489	21.8	44
204	A silicon carbide-based highly transparent passivating contact for crystalline silicon solar cells approaching efficiencies of 24%. *Nature Energy*, **2021**, 6, 529-537	62.3	29
203	Transparent-conductive-oxide-free front contacts for high-efficiency silicon heterojunction solar cells. *Joule*, **2021**, 5, 1535-1547	27.8	9
202	A unified description of non-radiative voltage losses in organic solar cells. *Nature Energy*, **2021**, 6, 799-806	62.3	70
201	Pathways toward 30% Efficient Single-Junction Perovskite Solar Cells and the Role of Mobile Ions. *Solar Rrl*, **2021**, 5, 2100219	7.1	15
200	Device Performance of Emerging Photovoltaic Materials (Version 1). *Advanced Energy Materials*, **2021**, 11, 2002774	21.8	56
199	Optoelectronic devices based on the integration of halide perovskites with silicon-based materials. *Journal of Materials Chemistry A*, **2021**, 9, 20919-20940	13	0
198	Defect tolerant device geometries for lead-halide perovskites. *Materials Advances*, **2021**, 2, 3655-3670	3.3	6
197	Comment on "Resolving spatial and energetic distributions of trap states in metal halide perovskite solar cells". *Science*, **2021**, 371,	33.3	12
196	The Influence of Photo-Induced Space Charge and Energetic Disorder on the Indoor and Outdoor Performance of Organic Solar Cells. *Advanced Theory and Simulations*, **2021**, 4, 2000319	3.5	2

195	Reply to Ideal solar cell efficiencies. *Nature Photonics*, **2021**, 15, 165-166	33.9	4
194	Comparing and Quantifying Indoor Performance of Organic Solar Cells. *Advanced Energy Materials*, **2021**, 11, 2101474	21.8	2
193	Apparent Defect Densities in Halide Perovskite Thin Films and Single Crystals. *ACS Energy Letters*, **2021**, 6, 3244-3251	20.1	26
192	Photoluminescence-Based Characterization of Halide Perovskites for Photovoltaics. *Advanced Energy Materials*, **2020**, 10, 1904134	21.8	134
191	A Bias-Free, Stand-Alone, and Scalable Photovoltaic-Electrochemical Device for Solar Hydrogen Production. *Advanced Sustainable Systems*, **2020**, 4, 2000070	5.9	10
190	How To Quantify the Efficiency Potential of Neat Perovskite Films: Perovskite Semiconductors with an Implied Efficiency Exceeding 28. *Advanced Materials*, **2020**, 32, e2000080	24	75
189	Pitfalls and prospects of optical spectroscopy to characterize perovskite-transport layer interfaces. *Applied Physics Letters*, **2020**, 116, 100501	3.4	16
188	Overcoming the Limitations of Transient Photovoltage Measurements for Studying Recombination in Organic Solar Cells. *Solar Rrl*, **2020**, 4, 1900581	7.1	14
187	Analyzing Interface Recombination in Lead-Halide Perovskite Solar Cells with Organic and Inorganic Hole-Transport Layers. *Advanced Materials Interfaces*, **2020**, 7, 2000366	4.6	28
186	Understanding the interplay of stability and efficiency in A-site engineered lead halide perovskites. *APL Materials*, **2020**, 8, 070901	5.7	35
185	Effect of reabsorption and photon recycling on photoluminescence spectra and transients in lead-halide perovskite crystals. *JPhys Materials*, **2020**, 3, 025003	4.2	9
184	Femto- to Microsecond Dynamics of Excited Electrons in a Quadruple Cation Perovskite. *ACS Energy Letters*, **2020**, 5, 785-792	20.1	8
183	What is a deep defect? Combining Shockley-Read-Hall statistics with multiphonon recombination theory. *Physical Review Materials*, **2020**, 4,	3.2	21
182	How solar cell efficiency is governed by the Eproduct. *Physical Review Research*, **2020**, 2,	3.9	10
181	How to Report Record Open-Circuit Voltages in Lead-Halide Perovskite Solar Cells. *Advanced Energy Materials*, **2020**, 10, 1902573	21.8	94
180	Optimization of Transparent Passivating Contact for Crystalline Silicon Solar Cells. *IEEE Journal of Photovoltaics*, **2020**, 10, 46-53	3.7	11
179	Efficient Area Matched Converter Aided Solar Charging of Lithium Ion Batteries Using High Voltage Perovskite Solar Cells. *ACS Applied Energy Materials*, **2020**, 3, 431-439	6.1	15
178	Bifunctional CoFeVOx Catalyst for Solar Water Splitting by using Multijunction and Heterojunction Silicon Solar Cells. *Advanced Materials Technologies*, **2020**, 5, 2000592	6.8	6

177	Relationship between Fill Factor and Light Intensity in Solar Cells Based on Organic Disordered Semiconductors: The Role of Tail States. *Physical Review Applied*, **2020**, 14,	4.3	15
176	Minimum doping densities for p□ junctions. *Nature Energy*, **2020**, 5, 973-975	62.3	8
175	Understanding the Light-Intensity Dependence of the Short-Circuit Current of Organic Solar Cells. *Advanced Theory and Simulations*, **2020**, 3, 2000116	3.5	12
174	Fermi-level pinning in methylammonium lead iodide perovskites. *Nanoscale*, **2019**, 11, 16828-16836	7.7	23
173	Charge-Carrier Recombination in Halide Perovskites. *Chemical Reviews*, **2019**, 119, 11007-11019	68.1	113
172	Photon Management in Perovskite Solar Cells. *Journal of Physical Chemistry Letters*, **2019**, 10, 5892-5896	6.4	7
171	Extracting Recombination Parameters from Impedance Measurements on Organic Solar Cells. *Physical Review Applied*, **2019**, 11,	4.3	5
170	Factors Controlling Open-Circuit Voltage Losses in Organic Solar Cells. *Trends in Chemistry*, **2019**, 1, 49-62	14.8	82
169	Impact of Marginal Exciton□Charge-Transfer State Offset on Charge Generation and Recombination in Polymer:Fullerene Solar Cells. *ACS Energy Letters*, **2019**, 4, 2096-2103	20.1	14
168	Role of Electron□Phonon Coupling in the Thermal Evolution of Bulk Rashba-Like Spin-Split Lead Halide Perovskites Exhibiting Dual-Band Photoluminescence. *ACS Energy Letters*, **2019**, 4, 2205-2212	20.1	31
167	Electron-Beam-Induced Current Measurements of Thin-Film Solar Cells. *ACS Applied Energy Materials*, **2019**, 2, 6127-6139	6.1	9
166	The impact of energy alignment and interfacial recombination on the internal and external open-circuit voltage of perovskite solar cells. *Energy and Environmental Science*, **2019**, 12, 2778-2788	35.4	348
165	High open-circuit voltages in lead-halide perovskite solar cells: experiment, theory and open questions. *Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences*, **2019**, 377, 20180286	3	19
164	Charge Carrier Collection and Contact Selectivity in Solar Cells. *Advanced Materials Interfaces*, **2019**, 6, 1900252	4.6	22
163	Tail state limited photocurrent collection of thick photoactive layers in organic solar cells. *Nature Communications*, **2019**, 10, 5159	17.4	41
162	Simulating nanocrystal-based solar cells: A lead sulfide case study. *Journal of Chemical Physics*, **2019**, 151, 241104	3.9	3
161	Highly Compact TiO2 Films by Spray Pyrolysis and Application in Perovskite Solar Cells. *Advanced Engineering Materials*, **2019**, 21, 1801196	3.5	22
160	Open-Circuit Voltages Exceeding 1.26 V in Planar Methylammonium Lead Iodide Perovskite Solar Cells. *ACS Energy Letters*, **2019**, 4, 110-117	20.1	216

159	Figures of Merit Guiding Research on Organic Solar Cells. *Journal of Physical Chemistry C*, **2018**, 122, 5829-5843	3.8	30
158	Quantitative analysis of the transient photoluminescence of CH3NH3PbI3/PC61BM heterojunctions by numerical simulations. *Sustainable Energy and Fuels*, **2018**, 2, 1027-1034	5.8	61
157	Understanding Thermal Admittance Spectroscopy in Low-Mobility Semiconductors. *Journal of Physical Chemistry C*, **2018**, 122, 9795-9803	3.8	28
156	Charge Transport in Spiro-OMeTAD Investigated through Space-Charge-Limited Current Measurements. *Physical Review Applied*, **2018**, 9,	4.3	33
155	Exploring the validity and limitations of the Mott-Gurney law for charge-carrier mobility determination of semiconducting thin-films. *Journal of Physics Condensed Matter*, **2018**, 30, 105901	1.8	58
154	Impact of Small Phonon Energies on the Charge-Carrier Lifetimes in Metal-Halide Perovskites. *Journal of Physical Chemistry Letters*, **2018**, 9, 939-946	6.4	66
153	Balancing electrical and optical losses for efficient 4-terminal Si perovskite solar cells with solution processed percolation electrodes. *Journal of Materials Chemistry A*, **2018**, 6, 3583-3592	13	80
152	The role of fullerenes in the environmental stability of polymer:fullerene solar cells. *Energy and Environmental Science*, **2018**, 11, 417-428	35.4	79
151	What Makes a Good Solar Cell?. *Advanced Energy Materials*, **2018**, 8, 1703385	21.8	104
150	What Remains Unexplained about the Properties of Halide Perovskites?. *Advanced Materials*, **2018**, 30, e1800691	24	174
149	Optical design of spectrally selective interlayers for perovskite/silicon heterojunction tandem solar cells. *Optics Express*, **2018**, 26, A750-A760	3.3	22
148	Optical Gaps of Organic Solar Cells as a Reference for Comparing Voltage Losses. *Advanced Energy Materials*, **2018**, 8, 1801352	21.8	211
147	Statistics of the Auger Recombination of Electrons and Holes via Defect Levels in the Band Gap-Application to Lead-Halide Perovskites. *ACS Omega*, **2018**, 3, 8009-8016	3.9	34
146	Performance Evaluation of Semitransparent Perovskite Solar Cells for Application in Four-Terminal Tandem Cells. *ACS Energy Letters*, **2018**, 3, 1861-1867	20.1	10
145	Linking structural properties with functionality in solar cell materials the effective mass and effective density of states. *Sustainable Energy and Fuels*, **2018**, 2, 1550-1560	5.8	11
144	Spin-coated planar SbS hybrid solar cells approaching 5% efficiency. *Beilstein Journal of Nanotechnology*, **2018**, 9, 2114-2124	3	16
143	How Contact Layers Control Shunting Losses from Pinholes in Thin-Film Solar Cells. *Journal of Physical Chemistry C*, **2018**, 122, 27263-27272	3.8	14
142	Research Update: Recombination and open-circuit voltage in lead-halide perovskites. *APL Materials*, **2018**, 6, 100702	5.7	44

141	Nonradiative Energy Losses in Bulk-Heterojunction Organic Photovoltaics. *Physical Review X*, **2018**, 8,	9.1	36
140	Robust nonfullerene solar cells approaching unity external quantum efficiency enabled by suppression of geminate recombination. *Nature Communications*, **2018**, 9, 2059	17.4	141
139	Developing design criteria for organic solar cells using well-absorbing non-fullerene acceptors. *Communications Physics*, **2018**, 1,	5.4	15
138	Simultaneous topographical, electrical and optical microscopy of optoelectronic devices at the nanoscale. *Nanoscale*, **2017**, 9, 2723-2731	7.7	14
137	Photovoltaics: Nanoengineered Materials and Their Functionality in Solar Cells **2017**, 181-206		1
136	Cost-Effective Absorber Patterning of Perovskite Solar Cells by Nanosecond Laser Processing. *Solar Rrl*, **2017**, 1, 1700003	7.1	13
135	Decreasing Radiative Recombination Coefficients via an Indirect Band Gap in Lead Halide Perovskites. *Journal of Physical Chemistry Letters*, **2017**, 8, 1265-1271	6.4	47
134	Transient Optoelectronic Analysis of the Impact of Material Energetics and Recombination Kinetics on the Open-Circuit Voltage of Hybrid Perovskite Solar Cells. *Journal of Physical Chemistry C*, **2017**, 121, 13496-13506	3.8	56
133	Understanding Mott-Schottky Measurements under Illumination in Organic Bulk Heterojunction Solar Cells. *Physical Review Applied*, **2017**, 7,	4.3	27
132	On the correct interpretation of the low voltage regime in intrinsic single-carrier devices. *Journal of Physics Condensed Matter*, **2017**, 29, 205901	1.8	24
131	Manipulating the Net Radiative Recombination Rate in Lead Halide Perovskite Films by Modification of Light Outcoupling. *Journal of Physical Chemistry Letters*, **2017**, 8, 5084-5090	6.4	42
130	Selection Metric for Photovoltaic Materials Screening Based on Detailed-Balance Analysis. *Physical Review Applied*, **2017**, 8,	4.3	41
129	Efficiency Potential of Photovoltaic Materials and Devices Unveiled by Detailed-Balance Analysis. *Physical Review Applied*, **2017**, 7,	4.3	154
128	Reducing the efficiency-stability-cost gap of organic photovoltaics with highly efficient and stable small molecule acceptor ternary solar cells. *Nature Materials*, **2017**, 16, 363-369	27	807
127	Oxygen vacancy doping of hematite analyzed by electrical conductivity and thermoelectric power measurements. *Physical Review Materials*, **2017**, 1,	3.2	13
126	In Situ Real-Time Characterization of Thin-Film Growth **2016**, 441-467		3
125	Introduction to Thin-Film Photovoltaics **2016**, 1-40		1
124	Fundamental Electrical Characterization of Thin-Film Solar Cells **2016**, 41-69		3

123	One-Dimensional Electro-Optical Simulations of Thin-Film Solar Cells **2016**, 633-657		2
122	Electroluminescence Analysis of Solar Cells and Solar Modules **2016**, 71-92		3
121	Capacitance Spectroscopy of Thin-Film Solar Cells **2016**, 93-119		4
120	Transient Optoelectronic Characterization of Thin-FilmSolar Cells **2016**, 147-162		2
119	Steady-State Photocarrier Grating Method **2016**, 163-188		1
118	Absorption and Photocurrent Spectroscopy with High Dynamic Range **2016**, 189-214		4
117	Reciprocity between Charge Injection and Extraction and Its Influence on the Interpretation of Electroluminescence Spectra in Organic Solar Cells. *Physical Review Applied*, **2016**, 5,	4.3	30
116	Reduced voltage losses yield 10% efficient fullerene free organic solar cells with >1 V open circuit voltages. *Energy and Environmental Science*, **2016**, 9, 3783-3793	35.4	425
115	Beyond Bulk Lifetimes: Insights into Lead Halide Perovskite Films from Time-Resolved Photoluminescence. *Physical Review Applied*, **2016**, 6,	4.3	144
114	Low Open-Circuit Voltage Loss in Solution-Processed Small-Molecule Organic Solar Cells. *ACS Energy Letters*, **2016**, 1, 302-308	20.1	52
113	Optoelectronic Properties of (CH3NH3)3Sb2I9 Thin Films for Photovoltaic Applications. *ACS Energy Letters*, **2016**, 1, 309-314	20.1	249
112	Zero-dimensional (CH3NH3)3Bi2I9 perovskite for optoelectronic applications. *Solar Energy Materials and Solar Cells*, **2016**, 158, 195-201	6.4	149
111	Compositional and electrical properties of line and planar defects in Cu(In,Ga)Se2 thin films for solar cells a review. *Physica Status Solidi - Rapid Research Letters*, **2016**, 10, 363-375	2.5	42
110	Discriminating between surface and bulk recombination in organic solar cells by studying the thickness dependence of the open-circuit voltage. *Applied Physics Letters*, **2016**, 109, 183301	3.4	18
109	Detailed balance analysis of photovoltaic materials and devices **2016**,		1
108	Impact of Photon Recycling on the Open-Circuit Voltage of Metal Halide Perovskite Solar Cells. *ACS Energy Letters*, **2016**, 1, 731-739	20.1	96
107	Extracting Information about the Electronic Quality of Organic Solar-Cell Absorbers from Fill Factor and Thickness. *Physical Review Applied*, **2016**, 6,	4.3	44
106	Physical aspects of ferroelectric semiconductors for photovoltaic solar energy conversion. *Physics Reports*, **2016**, 653, 1-40	27.7	112

105	**2016**,		34
104	Electric properties and carrier multiplication in breakdown sites in multi-crystalline silicon solar cells. *Journal of Applied Physics*, **2015**, 117, 205703	2.5	1
103	Role of Polymer Fractionation in Energetic Losses and Charge Carrier Lifetimes of Polymer: Fullerene Solar Cells. *Journal of Physical Chemistry C*, **2015**, 119, 19668-19673	3.8	21
102	Quantifying Losses in Open-Circuit Voltage in Solution-Processable Solar Cells. *Physical Review Applied*, **2015**, 4,	4.3	373
101	Understanding the Effect of Unintentional Doping on Transport Optimization and Analysis in Efficient Organic Bulk-Heterojunction Solar Cells. *Physical Review X*, **2015**, 5,	9.1	13
100	The Principle of Detailed Balance and the Opto-Electronic Properties of Solar Cells **2015**, 21-48		1
99	Rear Side Diffractive Gratings for Silicon Wafer Solar Cells **2015**, 49-90		
98	Light-Trapping in Solar Cells by Directionally Selective Filters **2015**, 183-207		1
97	Influence of Surface Recombination on Charge-Carrier Kinetics in Organic Bulk Heterojunction Solar Cells with Nickel Oxide Interlayers. *Physical Review Applied*, **2015**, 4,	4.3	70
96	Classification of solar cells according to mechanisms of charge separation and charge collection. *Physical Chemistry Chemical Physics*, **2015**, 17, 4007-14	3.6	78
95	Organic photovoltaic greenhouses: a unique application for semi-transparent PV?. *Energy and Environmental Science*, **2015**, 8, 1317-1328	35.4	159
94	Electron Collection as a Limit to Polymer:PCBM Solar Cell Efficiency: Effect of Blend Microstructure on Carrier Mobility and Device Performance in PTB7:PCBM. *Advanced Energy Materials*, **2014**, 4, 1400311	21.8	139
93	On the thermodynamics of light trapping in solar cells. *Nature Materials*, **2014**, 13, 103-4	27	20
92	Thermodynamics of light management in photovoltaic devices. *Physical Review B*, **2014**, 90,	3.3	137
91	Spectroscopic Evaluation of Mixing and Crystallinity of Fullerenes in Bulk Heterojunctions. *Advanced Functional Materials*, **2014**, 24, 6972-6980	15.6	25
90	Understanding the Apparent Charge Density Dependence of Mobility and Lifetime in Organic Bulk Heterojunction Solar Cells. *Journal of Physical Chemistry C*, **2014**, 118, 8837-8842	3.8	56
89	Effect of localized states on the reciprocity between quantum efficiency and electroluminescence in Cu(In,Ga)Se2 and Si thin-film solar cells. *Solar Energy Materials and Solar Cells*, **2014**, 129, 95-103	6.4	22
88	Device modelling of organic bulk heterojunction solar cells. *Topics in Current Chemistry*, **2014**, 352, 279-324		14

87	Parameter free calculation of the subgap density of states in poly(3-hexylthiophene). *Faraday Discussions*, **2014**, 174, 255-66	3.6	28
86	Photocurrent enhancement from diketopyrrolopyrrole polymer solar cells through alkyl-chain branching point manipulation. *Journal of the American Chemical Society*, **2013**, 135, 11537-40	16.4	248
85	Isostructural, Deeper Highest Occupied Molecular Orbital Analogues of Poly(3-hexylthiophene) for High-Open Circuit Voltage Organic Solar Cells. *Chemistry of Materials*, **2013**, 25, 4239-4249	9.6	50
84	Understanding the Effect of Donor Layer Thickness and a MoO3 Hole Transport Layer on the Open-Circuit Voltage in Squaraine/C60 Bilayer Solar Cells. *Journal of Physical Chemistry C*, **2013**, 117, 19866-19874	3.8	24
83	Influence of doping on charge carrier collection in normal and inverted geometry polymer:fullerene solar cells. *Scientific Reports*, **2013**, 3,	4.9	57
82	Transient phenomena in Cu(In,Ga)Se2 solar modules investigated by electroluminescence imaging. *Thin Solid Films*, **2013**, 535, 307-310	2.2	14
81	Investigation of a Conjugated Polyelectrolyte Interlayer for Inverted Polymer:Fullerene Solar Cells. *Advanced Energy Materials*, **2013**, 3, 718-723	21.8	87
80	Understanding the Reduced Efficiencies of Organic Solar Cells Employing Fullerene Multiadducts as Acceptors. *Advanced Energy Materials*, **2013**, 3, 744-752	21.8	115
79	Relating Recombination, Density of States, and Device Performance in an Efficient Polymer:Fullerene Organic Solar Cell Blend. *Advanced Energy Materials*, **2013**, 3, 1201-1209	21.8	81
78	Influence of crystallinity and energetics on charge separation in polymer-inorganic nanocomposite films for solar cells. *Scientific Reports*, **2013**, 3, 1531	4.9	81
77	On the Differences between Dark and Light Ideality Factor in Polymer:Fullerene Solar Cells. *Journal of Physical Chemistry Letters*, **2013**, 4, 2371-2376	6.4	178
76	Local junction voltages and radiative ideality factors of a-Si:H solar modules determined by electroluminescence imaging. *Materials Research Society Symposia Proceedings*, **2013**, 1536, 105-111		1
75	Quantitative evaluation method for electroluminescence images of a-Si:H thin-film solar modules. *Physica Status Solidi - Rapid Research Letters*, **2013**, 7, 627-630	2.5	9
74	Measurement and modeling of reverse biased electroluminescence in multi-crystalline silicon solar cells. *Journal of Applied Physics*, **2013**, 114, 134509	2.5	8
73	Analysis of the series resistance in pin-type thin-film silicon solar cells. *Journal of Applied Physics*, **2013**, 113, 134503	2.5	13
72	Influence of diffusion on space-charge-limited current measurements in organic semiconductors. *Beilstein Journal of Nanotechnology*, **2013**, 4, 180-8	3	34
71	Merocyanine/C60 Planar Heterojunction Solar Cells: Effect of Dye Orientation on Exciton Dissociation and Solar Cell Performance. *Advanced Functional Materials*, **2012**, 22, 86-96	15.6	92
70	Meaning of reaction orders in polymer:fullerene solar cells. *Physical Review B*, **2012**, 86,	3.3	174

69	Charge extraction and photocurrent in organic bulk heterojunction solar cells. *Physical Review B*, **2012**, 85,	3.3	51
68	Sensitivity of the Mott□Schottky Analysis in Organic Solar Cells. *Journal of Physical Chemistry C*, **2012**, 116, 7672-7680	3.8	202
67	Competition between the charge transfer state and the singlet states of donor or acceptor limiting the efficiency in polymer:fullerene solar cells. *Journal of the American Chemical Society*, **2012**, 134, 685-92	16.4	219
66	Influence of energetic disorder on electroluminescence emission in polymer:fullerene solar cells. *Physical Review B*, **2012**, 86,	3.3	67
65	Modelling of photo- and electroluminescence of hydrogenated microcrystalline silicon solar cells. *Physica Status Solidi C: Current Topics in Solid State Physics*, **2012**, 9, 1963-1967		11
64	Understanding the Thickness-Dependent Performance of Organic Bulk Heterojunction Solar Cells: The Influence of Mobility, Lifetime, and Space Charge. *Journal of Physical Chemistry Letters*, **2012**, 3, 3470-3	6.4	196
63	Comparison of device models for organic solar cells: Band-to-band vs. tail states recombination. *Physica Status Solidi (A) Applications and Materials Science*, **2012**, 209, 207-215	1.6	25
62	Field-dependent exciton dissociation in organic heterojunction solar cells. *Physical Review B*, **2012**, 85,	3.3	32
61	Approaching the Lambertian Limit in Randomly Textured Thin-Film Solar Cells. *Materials Research Society Symposia Proceedings*, **2012**, 1391, 7		1
60	Modeling Nongeminate Recombination in P3HT:PCBM Solar Cells. *Journal of Physical Chemistry C*, **2011**, 115, 9806-9813	3.8	163
59	Influence of the indium tin oxide/organic interface on open-circuit voltage, recombination, and cell degradation in organic small-molecule solar cells. *Physical Review B*, **2011**, 83,	3.3	66
58	Approaching the Lambertian limit in randomly textured thin-film solar cells. *Optics Express*, **2011**, 19 Suppl 4, A865-74	3.3	49
57	Analysis of the Relationship between Linearity of Corrected Photocurrent and the Order of Recombination in Organic Solar Cells. *Journal of Physical Chemistry Letters*, **2011**, 2, 2407-2411	6.4	68
56	**2011**,		87
55	Characterization and simulation of a-Si:H/□-Si:H tandem solar cells. *Solar Energy Materials and Solar Cells*, **2011**, 95, 3318-3327	6.4	74
54	Recombination via tail states in polythiophene:fullerene solar cells. *Physical Review B*, **2011**, 83,	3.3	312
53	Introduction to Thin-Film Photovoltaics **2011**, 1-32		3
52	Electron-Spin Resonance (ESR) in Hydrogenated Amorphous Silicon (a-Si:H) **2011**, 231-273		

51	Scanning Probe Microscopy on Inorganic Thin Films for Solar Cells **2011**, 275-298	2
50	Electron Microscopy on Thin Films for Solar Cells **2011**, 299-345	2
49	X-Ray and Neutron Diffraction on Materials for Thin-Film Solar Cells **2011**, 347-363	5
48	Raman Spectroscopy on Thin Films for Solar Cells **2011**, 365-386	4
47	Soft X-Ray and Electron Spectroscopy: A Unique Tool Chest to Characterize the Chemical and Electronic Properties of Surfaces and Interfaces **2011**, 387-409	1
46	Elemental Distribution Profiling of Thin Films for Solar Cells **2011**, 411-448	1
45	Hydrogen Effusion Experiments **2011**, 449-475	8
44	Ab-Initio Modeling of Defects in Semiconductors **2011**, 477-499	
43	One-Dimensional Electro-Optical Simulations of Thin-Film Solar Cells **2011**, 501-527	8
42	Fundamental Electrical Characterization of Thin-Film Solar Cells **2011**, 33-60	11
41	Two- and Three-Dimensional Electronic Modeling of Thin-Film Solar Cells **2011**, 529-540	3
40	Electroluminescence Analysis of Solar Cells and Solar Modules **2011**, 61-80	6
39	Capacitance Spectroscopy of Thin-Film Solar Cells **2011**, 81-105	24
38	Characterizing the Light-Trapping Properties of Textured Surfaces with Scanning Near-Field Optical Microscopy **2011**, 107-123	
37	Spectroscopic Ellipsometry **2011**, 125-149	2
36	Photoluminescence Analysis of Thin-Film Solar Cells **2011**, 151-175	28
35	Steady-State Photocarrier Grating Method **2011**, 177-202	
34	Time-of-Flight Analysis **2011**, 203-229	

33	Enhanced light trapping in thin amorphous silicon solar cells by directionally selective optical filters **2010**,		1
32	Enhanced light trapping in thin-film solar cells by a directionally selective filter. *Optics Express*, **2010** , 18 Suppl 2, A133-8	3.3	27
31	Quantitative electroluminescence analysis of resistive losses in Cu(In, Ga)Se2 thin-film modules. *Solar Energy Materials and Solar Cells*, **2010**, 94, 979-984	6.4	71
30	Modeling of photoluminescence spectra and quasi-Fermi level splitting in □-Si:H solar cells. *Solar Energy Materials and Solar Cells*, **2010**, 94, 1851-1854	6.4	20
29	Reverse biased electroluminescence spectroscopy of crystalline silicon solar cells with high spatial resolution. *Physica Status Solidi (A) Applications and Materials Science*, **2010**, 207, 2597-2600	1.6	20
28	Efficiency limits of Si/SiO2 quantum well solar cells from first-principles calculations. *Journal of Applied Physics*, **2009**, 105, 104511	2.5	35
27	Electroluminescence imaging of Cu(In,Ga)Se2 thin film solar modules. *Materials Research Society Symposia Proceedings*, **2009**, 1165, 1		3
26	Reciprocity between electroluminescence and quantum efficiency used for the characterization of silicon solar cells. *Progress in Photovoltaics: Research and Applications*, **2009**, 17, 394-402	6.8	73
25	Modeling charge carrier collection in multiple exciton generating PbSe quantum dots. *Thin Solid Films*, **2009**, 517, 2438-2442	2.2	5
24	The photonic light trap□mproved light trapping in solar cells by angularly selective filters. *Solar Energy Materials and Solar Cells*, **2009**, 93, 1721-1727	6.4	36
23	Efficiency Limits of Organic Bulk Heterojunction Solar Cells. *Journal of Physical Chemistry C*, **2009**, 113, 17958-17966	3.8	190
22	Mobility dependent efficiencies of organic bulk heterojunction solar cells: Surface recombination and charge transfer state distribution. *Physical Review B*, **2009**, 80,	3.3	88
21	Internal voltages in GaInP□GaInAs□e multijunction solar cells determined by electroluminescence measurements. *Applied Physics Letters*, **2008**, 92, 123502	3.4	107
20	Rugate filter for light-trapping in solar cells. *Optics Express*, **2008**, 16, 9332-43	3.3	52
19	Enhanced Light-trapping in Solar Cells by Directional Selective Optical Filters. *Materials Research Society Symposia Proceedings*, **2008**, 1101, 1		
18	Quantification of Light Trapping Using a Reciprocity Between Electroluminescent Emission and Photovoltaic Action in a Solar Cell. *Materials Research Society Symposia Proceedings*, **2008**, 1101, 1		3
17	Directional selectivity and light-trapping in solar cells **2008**,		4
16	Directional selectivity and ultra-light-trapping in solar cells. *Physica Status Solidi (A) Applications and Materials Science*, **2008**, 205, 2831-2843	1.6	51

15	Detailed balance and reciprocity in solar cells. *Physica Status Solidi (A) Applications and Materials Science*, **2008**, 205, 2737-2751	1.6	87
14	Note on the interpretation of electroluminescence images using their spectral information. *Solar Energy Materials and Solar Cells*, **2008**, 92, 1621-1627	6.4	37
13	Charge separation in excitonic and bipolar solar cells A detailed balance approach. *Thin Solid Films*, **2008**, 516, 7144-7148	2.2	9
12	Electro-optical modeling of bulk heterojunction solar cells. *Journal of Applied Physics*, **2008**, 104, 094513	2.5	63
11	Detailed balance theory of excitonic and bulk heterojunction solar cells. *Physical Review B*, **2008**, 78,	3.3	86
10	Comparative study of electroluminescence from Cu(In,Ga)Se2 and Si solar cells. *Thin Solid Films*, **2007**, 515, 6238-6242	2.2	88
9	Electroluminescence analysis of high efficiency Cu(In,Ga)Se2 solar cells. *Journal of Applied Physics*, **2007**, 102, 104510	2.5	79
8	Low-temperature a-Si:H/ZnO/Al back contacts for high-efficiency silicon solar cells. *Solar Energy Materials and Solar Cells*, **2006**, 90, 1345-1352	6.4	57
7	Optical Optimization Potential of Transparent-Passivated Contacts in Silicon Solar Cells. *Solar Rrl*,2101050	7.1	1
6	Dielectric Junction: Electrostatic Design for Charge Carrier Collection in Solar Cells. *Solar Rrl*,2100720	7.1	2
5	Recombination Dynamics in PbS Nanocrystal Quantum Dot Solar Cells Studied through Drift Diffusion Simulations. *ACS Applied Electronic Materials*,	4	1
4	Device Performance of Emerging Photovoltaic Materials (Version 2). *Advanced Energy Materials*,2102526	21.8	17
3	Consistent Interpretation of Electrical and Optical Transients in Halide Perovskite Layers and Solar Cells. *Advanced Energy Materials*,2102290	21.8	1
2	Bismuth-based halide perovskite and perovskite-inspired light absorbing materials for photovoltaics. *Journal Physics D: Applied Physics*,	3	3
1	Effect of Doping, Photodoping, and Bandgap Variation on the Performance of Perovskite Solar Cells. *Advanced Optical Materials*,2101947	8.1	1