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401
papers

13,907
citations

64
h-index

102
g-index

435
ext. papers

15,594
ext. citations

5
avg, IF

6.83
L-index

#	Paper	IF	Citations
401	Reciprocity relation between photovoltaic quantum efficiency and electroluminescent emission of solar cells. <i>Physical Review B</i> , 2007 , 76,	3.3	698
400	Electronic properties of Cu(In,Ga)Se ₂ heterojunction solar cells: Recent achievements, current understanding, and future challenges. <i>Applied Physics A: Materials Science and Processing</i> , 1999 , 69, 131-147	2.6	457
399	Recombination via tail states in polythiophene:fullerene solar cells. <i>Physical Review B</i> , 2011 , 83,	3.3	312
398	Electronic properties of CuGaSe ₂ -based heterojunction solar cells. Part I. Transport analysis. <i>Journal of Applied Physics</i> , 2000 , 87, 584-593	2.5	276
397	Open-Circuit Voltages Exceeding 1.26 V in Planar Methylammonium Lead Iodide Perovskite Solar Cells. <i>ACS Energy Letters</i> , 2019 , 4, 110-117	20.1	216
396	Electronic properties of ZnO/CdS/Cu(In,Ga)Se ₂ solar cells: Aspects of heterojunction formation. <i>Thin Solid Films</i> , 2001 , 387, 141-146	2.2	204
395	Interdependence of absorber composition and recombination mechanism in Cu(In,Ga)(Se,S) ₂ heterojunction solar cells. <i>Applied Physics Letters</i> , 2002 , 80, 2598-2600	3.4	204
394	Stability Issues of Cu(In,Ga)Se ₂ -Based Solar Cells. <i>Journal of Physical Chemistry B</i> , 2000 , 104, 4849-4862	3.4	204
393	Efficiency limitations of polycrystalline thin film solar cells: case of Cu(In,Ga)Se ₂ . <i>Thin Solid Films</i> , 2005 , 480-481, 399-409	2.2	191
392	Efficiency Limits of Organic Bulk Heterojunction Solar Cells. <i>Journal of Physical Chemistry C</i> , 2009 , 113, 17958-17966	3.8	190
391	A new approach to high-efficiency solar cells by band gap grading in Cu(In,Ga)Se ₂ chalcopyrite semiconductors. <i>Solar Energy Materials and Solar Cells</i> , 2001 , 67, 145-150	6.4	184
390	Radiative efficiency limits of solar cells with lateral band-gap fluctuations. <i>Applied Physics Letters</i> , 2004 , 84, 3735-3737	3.4	166
389	Model for electronic transport in Cu(In,Ga)Se ₂ solar cells 1998 , 6, 407-421		164
388	Influence of the Ga-content on the bulk defect densities of Cu(In,Ga)Se ₂ . <i>Thin Solid Films</i> , 2001 , 387, 71-73	2.2	163
387	Oxygenation and air-annealing effects on the electronic properties of Cu(In,Ga)Se ₂ films and devices. <i>Journal of Applied Physics</i> , 1999 , 86, 497-505	2.5	162
386	Efficiency Potential of Photovoltaic Materials and Devices Unveiled by Detailed-Balance Analysis. <i>Physical Review Applied</i> , 2017 , 7,	4.3	154
385	High quality baseline for high efficiency, Cu(In _{1-x} Ga _x)Se ₂ solar cells. <i>Progress in Photovoltaics: Research and Applications</i> , 2007 , 15, 507-519	6.8	152

384	Influence of sodium on the growth of polycrystalline Cu(In,Ga)Se ₂ thin films. <i>Thin Solid Films</i> , 2000 , 361-362, 161-166	2.2	152
383	Beyond Bulk Lifetimes: Insights into Lead Halide Perovskite Films from Time-Resolved Photoluminescence. <i>Physical Review Applied</i> , 2016 , 6,	4.3	144
382	Grain boundaries in Cu(In, Ga)(Se, S) ₂ thin-film solar cells. <i>Applied Physics A: Materials Science and Processing</i> , 2009 , 96, 221-234	2.6	142
381	Thermodynamics of light management in photovoltaic devices. <i>Physical Review B</i> , 2014 , 90,	3.3	137
380	Back surface band gap gradings in Cu(In,Ga)Se ₂ solar cells. <i>Thin Solid Films</i> , 2001 , 387, 11-13	2.2	123
379	Electronic Transport in Dye-Sensitized Nanoporous TiO ₂ Solar Cells Comparison of Electrolyte and Solid-State Devices. <i>Journal of Physical Chemistry B</i> , 2003 , 107, 3556-3564	3.4	121
378	Tunneling-enhanced recombination in Cu(In, Ga)Se ₂ heterojunction solar cells. <i>Applied Physics Letters</i> , 1999 , 74, 111-113	3.4	121
377	Optimization and characterization of amorphous/crystalline silicon heterojunction solar cells. <i>Progress in Photovoltaics: Research and Applications</i> , 2002 , 10, 1-13	6.8	110
376	Phase segregation, Cu migration and junction formation in Cu(In,Ga)Se ₂ . <i>EPJ Applied Physics</i> , 1999 , 6, 131-139	1.1	110
375	Multijunction Si photocathodes with tunable photovoltages from 2.0 V to 2.8 V for light induced water splitting. <i>Energy and Environmental Science</i> , 2016 , 9, 145-154	35.4	107
374	Internal voltages in GaInP/GaInAs/Ge multijunction solar cells determined by electroluminescence measurements. <i>Applied Physics Letters</i> , 2008 , 92, 123502	3.4	107
373	Electronic loss mechanisms in chalcopyrite based heterojunction solar cells. <i>Thin Solid Films</i> , 2000 , 361-362, 298-302	2.2	106
372	What Makes a Good Solar Cell?. <i>Advanced Energy Materials</i> , 2018 , 8, 1703385	21.8	104
371	Electrical characterization of Cu(In,Ga)Se ₂ thin-film solar cells and the role of defects for the device performance. <i>Solar Energy Materials and Solar Cells</i> , 2001 , 67, 137-143	6.4	100
370	Recombination mechanisms in amorphous silicon/crystalline silicon heterojunction solar cells. <i>Journal of Applied Physics</i> , 2000 , 87, 2639-2645	2.5	100
369	Microcrystalline silicon/oxygen alloys for application in silicon solar cells and modules. <i>Solar Energy Materials and Solar Cells</i> , 2013 , 119, 134-143	6.4	98
368	Plasmonic reflection grating back contacts for microcrystalline silicon solar cells. <i>Applied Physics Letters</i> , 2011 , 99, 181105	3.4	97
367	Influence of Cu content on electronic transport and shunting behavior of Cu(In,Ga)Se ₂ solar cells. <i>Journal of Applied Physics</i> , 2006 , 99, 014906	2.5	96

366	Impact of Photon Recycling on the Open-Circuit Voltage of Metal Halide Perovskite Solar Cells. <i>ACS Energy Letters</i> , 2016 , 1, 731-739	20.1	96
365	Efficiency limits of photovoltaic fluorescent collectors. <i>Applied Physics Letters</i> , 2005 , 87, 171101	3.4	94
364	How to Report Record Open-Circuit Voltages in Lead-Halide Perovskite Solar Cells. <i>Advanced Energy Materials</i> , 2020 , 10, 1902573	21.8	94
363	Understanding junction breakdown in multicrystalline solar cells. <i>Journal of Applied Physics</i> , 2011 , 109, 071101	2.5	92
362	Composition dependence of defect energies and band alignments in the Cu(In _{1-x} Ga _x)(Se _{1-y} Sy) ₂ alloy system. <i>Journal of Applied Physics</i> , 2002 , 91, 1391-1399	2.5	92
361	Cu(In,Ga)Se ₂ Solar Cells: Device Stability Based on Chemical Flexibility. <i>Advanced Materials</i> , 1999 , 11, 957-961	24	89
360	Mobility dependent efficiencies of organic bulk heterojunction solar cells: Surface recombination and charge transfer state distribution. <i>Physical Review B</i> , 2009 , 80,	3.3	88
359	Comparative study of electroluminescence from Cu(In,Ga)Se ₂ and Si solar cells. <i>Thin Solid Films</i> , 2007 , 515, 6238-6242	2.2	88
358	Electronic properties of CuGaSe ₂ -based heterojunction solar cells. Part II. Defect spectroscopy. <i>Journal of Applied Physics</i> , 2000 , 87, 594-602	2.5	88
357	Persistent photoconductivity in Cu(In,Ga)Se ₂ heterojunctions and thin films prepared by sequential deposition. <i>Applied Physics Letters</i> , 1998 , 73, 223-225	3.4	88
356	Detailed balance and reciprocity in solar cells. <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2008 , 205, 2737-2751	1.6	87
355	Interface redox engineering of Cu(In,Ga)Se ₂ based solar cells: oxygen, sodium, and chemical bath effects. <i>Thin Solid Films</i> , 2000 , 361-362, 353-359	2.2	87
354	Detailed balance theory of excitonic and bulk heterojunction solar cells. <i>Physical Review B</i> , 2008 , 78,	3.3	86
353	Defect generation in Cu(In,Ga)Se ₂ heterojunction solar cells by high-energy electron and proton irradiation. <i>Journal of Applied Physics</i> , 2001 , 90, 650-658	2.5	85
352	Light absorption and emission in semiconductors with band gap fluctuations—a study on Cu(In,Ga)Se ₂ thin films. <i>Journal of Applied Physics</i> , 2007 , 101, 113519	2.5	84
351	Electroluminescence analysis of high efficiency Cu(In,Ga)Se ₂ solar cells. <i>Journal of Applied Physics</i> , 2007 , 102, 104510	2.5	79
350	Upscaling of integrated photoelectrochemical water-splitting devices to large areas. <i>Nature Communications</i> , 2016 , 7, 12681	17.4	76
349	Texture and electronic activity of grain boundaries in Cu(In,Ga)Se ₂ thin films. <i>Applied Physics A: Materials Science and Processing</i> , 2006 , 82, 1-7	2.6	76

348	Design of nanostructured plasmonic back contacts for thin-film silicon solar cells. <i>Optics Express</i> , 2011 , 19 Suppl 6, A1219-30	3.3	74
347	Characterization and simulation of a-Si:H/ β -Si:H tandem solar cells. <i>Solar Energy Materials and Solar Cells</i> , 2011 , 95, 3318-3327	6.4	74
346	Reciprocity between electroluminescence and quantum efficiency used for the characterization of silicon solar cells. <i>Progress in Photovoltaics: Research and Applications</i> , 2009 , 17, 394-402	6.8	73
345	Modeling extremely thin absorber solar cells for optimized design. <i>Progress in Photovoltaics: Research and Applications</i> , 2004 , 12, 573-591	6.8	73
344	Resistive limitations to spatially inhomogeneous electronic losses in solar cells. <i>Applied Physics Letters</i> , 2004 , 85, 6010-6012	3.4	72
343	Quantitative electroluminescence analysis of resistive losses in Cu(In, Ga)Se ₂ thin-film modules. <i>Solar Energy Materials and Solar Cells</i> , 2010 , 94, 979-984	6.4	71
342	Formation of transparent and ohmic ZnO:Al/MoSe ₂ contacts for bifacial Cu(In,Ga)Se ₂ solar cells and tandem structures. <i>Thin Solid Films</i> , 2005 , 480-481, 67-70	2.2	70
341	Classification of metastabilities in the electrical characteristics of ZnO/CdS/Cu(In,Ga)Se ₂ solar cells. <i>Thin Solid Films</i> , 2001 , 387, 147-150	2.2	70
340	Influence of the selenium flux on the growth of Cu(In,Ga)Se ₂ thin films. <i>Thin Solid Films</i> , 2003 , 431-432, 31-36	2.2	67
339	Impact of Small Phonon Energies on the Charge-Carrier Lifetimes in Metal-Halide Perovskites. <i>Journal of Physical Chemistry Letters</i> , 2018 , 9, 939-946	6.4	66
338	Influence of the Built-in Voltage on the Fill Factor of Dye-Sensitized Solar Cells. <i>Journal of Physical Chemistry B</i> , 2003 , 107, 13258-13261	3.4	64
337	Electro-optical modeling of bulk heterojunction solar cells. <i>Journal of Applied Physics</i> , 2008 , 104, 094513	2.5	63
336	Analysis of short circuit current gains by an anti-reflective textured cover on silicon thin film solar cells. <i>Progress in Photovoltaics: Research and Applications</i> , 2013 , 21, 1672-1681	6.8	62
335	Role of the CdS buffer layer as an active optical element in Cu(In,Ga)Se ₂ thin-film solar cells. <i>Progress in Photovoltaics: Research and Applications</i> , 2002 , 10, 457-463	6.8	62
334	Quantitative analysis of the transient photoluminescence of CH ₃ NH ₃ PbI ₃ /PC61BM heterojunctions by numerical simulations. <i>Sustainable Energy and Fuels</i> , 2018 , 2, 1027-1034	5.8	61
333	Fermi level pinning at CdS/Cu(In,Ga)(Se,S) ₂ interfaces: effect of chalcopyrite alloy composition. <i>Journal of Physics and Chemistry of Solids</i> , 2003 , 64, 1591-1595	3.9	61
332	Open Circuit Voltage Limitations in CuIn _{1-x} Ga _x Se ₂ Thin-Film Solar Cells Dependence on Alloy Composition. <i>Physica Status Solidi A</i> , 2000 , 179, R7-R8		61
331	Impact of Na and S incorporation on the electronic transport mechanisms of Cu(In, Ga)Se ₂ solar cells. <i>Solid State Communications</i> , 1998 , 107, 59-63	1.6	60

330	Numerical simulation of carrier collection and recombination at grain boundaries in Cu(In,Ga)Se ₂ solar cells. <i>Journal of Applied Physics</i> , 2008 , 103, 094523	2.5	58
329	Low-temperature a-Si:H/ZnO/Al back contacts for high-efficiency silicon solar cells. <i>Solar Energy Materials and Solar Cells</i> , 2006 , 90, 1345-1352	6.4	57
328	Device Performance of Emerging Photovoltaic Materials (Version 1). <i>Advanced Energy Materials</i> , 2021 , 11, 2002774	21.8	56
327	Defects in Cu(In, Ga) Se ₂ semiconductors and their role in the device performance of thin-film solar cells 1997 , 5, 121-130		55
326	Compositional trends of defect energies, band alignments, and recombination mechanisms in the Cu(In,Ga)(Se,S) ₂ alloy system. <i>Thin Solid Films</i> , 2003 , 431-432, 158-162	2.2	55
325	Numerical simulation of grain boundary effects in Cu(In,Ga)Se ₂ thin-film solar cells. <i>Thin Solid Films</i> , 2005 , 480-481, 8-12	2.2	55
324	Modeling of spatially inhomogeneous solar cells by a multi-diode approach. <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2005 , 202, 2920-2927	1.6	55
323	Material development for dye solar modules: results from an integrated approach. <i>Progress in Photovoltaics: Research and Applications</i> , 2008 , 16, 489-501	6.8	54
322	Three-dimensional photonic crystal intermediate reflectors for enhanced light-trapping in tandem solar cells. <i>Advanced Materials</i> , 2011 , 23, 3896-900	24	53
321	Finite mobility effects on the radiative efficiency limit of pn-junction solar cells. <i>Physical Review B</i> , 2008 , 77,	3.3	53
320	Rugate filter for light-trapping in solar cells. <i>Optics Express</i> , 2008 , 16, 9332-43	3.3	52
319	Photogeneration and carrier recombination in graded gap Cu(In, Ga)Se/sub 2/ solar cells. <i>IEEE Transactions on Electron Devices</i> , 2000 , 47, 2249-2254	2.9	52
318	Directional selectivity and ultra-light-trapping in solar cells. <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2008 , 205, 2831-2843	1.6	51
317	Cu(In,Ga)Se ₂ solar cells with a ZnSe buffer layer: interface characterization by quantum efficiency measurements 1999 , 7, 423-436		51
316	Effects of Thermochemical Treatment on CuSbS ₂ Photovoltaic Absorber Quality and Solar Cell Reproducibility. <i>Journal of Physical Chemistry C</i> , 2016 , 120, 18377-18385	3.8	51
315	. <i>IEEE Journal of Photovoltaics</i> , 2012 , 2, 169-172	3.7	49
314	Decreasing Radiative Recombination Coefficients via an Indirect Band Gap in Lead Halide Perovskites. <i>Journal of Physical Chemistry Letters</i> , 2017 , 8, 1265-1271	6.4	47
313	Theoretical and experimental analysis of photonic structures for fluorescent concentrators with increased efficiencies. <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2008 , 205, 2811-2821	1.6	45

312	Application and modeling of an integrated amorphous silicon tandem based device for solar water splitting. <i>Solar Energy Materials and Solar Cells</i> , 2015 , 140, 275-280	6.4	44
311	Silicon heterojunction solar cell with amorphous silicon oxide buffer and microcrystalline silicon oxide contact layers. <i>Physica Status Solidi - Rapid Research Letters</i> , 2012 , 6, 193-195	2.5	44
310	Understanding Transient Photoluminescence in Halide Perovskite Layer Stacks and Solar Cells. <i>Advanced Energy Materials</i> , 2021 , 11, 2003489	21.8	44
309	Extracting Information about the Electronic Quality of Organic Solar-Cell Absorbers from Fill Factor and Thickness. <i>Physical Review Applied</i> , 2016 , 6,	4.3	44
308	Radiation resistance of Cu(In,Ga)Se ₂ solar cells under 1-MeV electron irradiation. <i>Thin Solid Films</i> , 2001 , 387, 228-230	2.2	43
307	Spectral dependence and Hall effect of persistent photoconductivity in polycrystalline Cu(In,Ga)Se ₂ thin films. <i>Journal of Applied Physics</i> , 2002 , 91, 5093-5099	2.5	43
306	Manipulating the Net Radiative Recombination Rate in Lead Halide Perovskite Films by Modification of Light Outcoupling. <i>Journal of Physical Chemistry Letters</i> , 2017 , 8, 5084-5090	6.4	42
305	Disorder improves nanophotonic light trapping in thin-film solar cells. <i>Applied Physics Letters</i> , 2014 , 104, 131102	3.4	42
304	Optimized amorphous silicon oxide buffer layers for silicon heterojunction solar cells with microcrystalline silicon oxide contact layers. <i>Journal of Applied Physics</i> , 2013 , 113, 134501	2.5	42
303	Characterization of a-Si:H/Si interfaces by effective-lifetime measurements. <i>Journal of Applied Physics</i> , 2005 , 98, 093711	2.5	42
302	Selection Metric for Photovoltaic Materials Screening Based on Detailed-Balance Analysis. <i>Physical Review Applied</i> , 2017 , 8,	4.3	41
301	Diffusion Limitations to I ₃ ⁻ /I ⁺ Electrolyte Transport Through Nanoporous TiO ₂ Networks. <i>Electrochemical and Solid-State Letters</i> , 2003 , 6, E11		40
300	Silicon solar cell of 16.8 μm thickness and 14.7% efficiency. <i>Applied Physics Letters</i> , 1993 , 62, 2998-3000	3.4	40
299	Advanced large area characterization of thin-film solar modules by electroluminescence and thermography imaging techniques. <i>Solar Energy Materials and Solar Cells</i> , 2015 , 135, 35-42	6.4	38
298	Defect annealing in Cu(In,Ga)Se ₂ heterojunction solar cells after high-energy electron irradiation. <i>Applied Physics Letters</i> , 2001 , 79, 2922-2924	3.4	38
297	Recovery of scalar time-delay systems from time series. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1996 , 211, 345-349	2.3	38
296	Preparation and measurement of highly efficient a-Si:H single junction solar cells and the advantages of SiO _x :H n-layers. <i>Progress in Photovoltaics: Research and Applications</i> , 2015 , 23, 939-948	6.8	37
295	Carrier collection in Cu(In,Ga)Se ₂ solar cells with graded band gaps and transparent ZnO:Al back contacts. <i>Solar Energy Materials and Solar Cells</i> , 2007 , 91, 689-695	6.4	37

294	Note on the interpretation of electroluminescence images using their spectral information. <i>Solar Energy Materials and Solar Cells</i> , 2008 , 92, 1621-1627	6.4	37
293	Classification of spontaneous oscillations at the onset of avalanche breakdown in p-type germanium. <i>Physical Review B</i> , 1991 , 43, 2255-2262	3.3	37
292	Development of Thin Film Amorphous Silicon Tandem Junction Based Photocathodes Providing High Open-Circuit Voltages for Hydrogen Production. <i>International Journal of Photoenergy</i> , 2014 , 2014, 1-10	2.1	36
291	Wide Gap Microcrystalline Silicon Oxide Emitter for a-SiO _x :H/c-Si Heterojunction Solar Cells. <i>Japanese Journal of Applied Physics</i> , 2013 , 52, 122304	1.4	36
290	Metastable electrical transport in Cu(In,Ga)Se ₂ thin films and ZnO/CdS/Cu(In,Ga)Se ₂ heterostructures. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1998 , 245, 489-493	2.3	36
289	Improvement of photon collection in Cu(In,Ga)Se ₂ solar cells and modules by fluorescent frequency conversion. <i>Thin Solid Films</i> , 2007 , 515, 5964-5967	2.2	36
288	Efficiency limits of Si/SiO ₂ quantum well solar cells from first-principles calculations. <i>Journal of Applied Physics</i> , 2009 , 105, 104511	2.5	35
287	Influence of damp heat on the electrical properties of Cu(In,Ga)Se ₂ solar cells. <i>Thin Solid Films</i> , 2000 , 361-362, 283-287	2.2	35
286	Statistics of the Auger Recombination of Electrons and Holes via Defect Levels in the Band Gap-Application to Lead-Halide Perovskites. <i>ACS Omega</i> , 2018 , 3, 8009-8016	3.9	34
285	a-Si:H/μc-Si:H tandem junction based photocathodes with high open-circuit voltage for efficient hydrogen production. <i>Journal of Materials Research</i> , 2014 , 29, 2605-2614	2.5	34
284	Method to extract diffusion length from solar cell parametersApplication to polycrystalline silicon. <i>Journal of Applied Physics</i> , 2003 , 93, 5447-5455	2.5	34
283	Field-dependent exciton dissociation in organic heterojunction solar cells. <i>Physical Review B</i> , 2012 , 85,	3.3	32
282	20.5% efficient silicon solar cell with a low temperature rear side process using laser-fired contacts. <i>Progress in Photovoltaics: Research and Applications</i> , 2006 , 14, 653-662	6.8	31
281	Electrical characterisation of dye sensitised nanocrystalline TiO ₂ solar cells with liquid electrolyte and solid-state organic hole conductor. <i>Thin Solid Films</i> , 2002 , 403-404, 242-246	2.2	31
280	A model for the open circuit voltage relaxation in Cu(In,Ga)Se ₂ heterojunction solar cells. <i>EPJ Applied Physics</i> , 1999 , 8, 43-52	1.1	31
279	Reciprocity between Charge Injection and Extraction and Its Influence on the Interpretation of Electroluminescence Spectra in Organic Solar Cells. <i>Physical Review Applied</i> , 2016 , 5,	4.3	30
278	Analysis of sub-stoichiometric hydrogenated silicon oxide films for surface passivation of crystalline silicon solar cells. <i>Journal of Applied Physics</i> , 2012 , 112, 054905	2.5	30
277	Influence of heterointerfaces on the performance of Cu(In,Ga)Se ₂ solar cells with CdS and In(OH _x ,Sy) buffer layers. <i>Thin Solid Films</i> , 2003 , 431-432, 330-334	2.2	30

276	Determination of electric transport properties in the pre- and post-breakdown regime of-germanium. <i>European Physical Journal B</i> , 1988 , 72, 225-233	1.2	30
275	The role of structural properties and defects for the performance of Cu-chalcopyrite-based thin-film solar cells. <i>Physica B: Condensed Matter</i> , 2001 , 308-310, 1081-1085	2.8	29
274	Classification of current instabilities during low-temperature breakdown in germanium. <i>Applied Physics A: Solids and Surfaces</i> , 1989 , 48, 155-160		29
273	A silicon carbide-based highly transparent passivating contact for crystalline silicon solar cells approaching efficiencies of 24%. <i>Nature Energy</i> , 2021 , 6, 529-537	62.3	29
272	Nanoscale observation of waveguide modes enhancing the efficiency of solar cells. <i>Nano Letters</i> , 2014 , 14, 6599-605	11.5	28
271	Photoluminescence Analysis of Thin-Film Solar Cells 2011 , 151-175		28
270	Interface Optimization via Fullerene Blends Enables Open-Circuit Voltages of 1.35V in CH ₃ NH ₃ Pb(I _{0.8} Br _{0.2}) ₃ Solar Cells. <i>Advanced Energy Materials</i> , 2021 , 11, 2003386	21.8	28
269	Enhanced light trapping in thin-film solar cells by a directionally selective filter. <i>Optics Express</i> , 2010 , 18 Suppl 2, A133-8	3.3	27
268	Texture of Cu(In,Ga)Se ₂ thin films and nanoscale cathodoluminescence. <i>Journal of Physics Condensed Matter</i> , 2004 , 16, S85-S89	1.8	27
267	The detailed balance principle and the reciprocity theorem between photocarrier collection and dark carrier distribution in solar cells. <i>Journal of Applied Physics</i> , 1998 , 84, 6412-6418	2.5	27
266	Exemplary locking sequence during self-generated quasiperiodicity of extrinsic germanium. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1987 , 124, 335-339	2.3	27
265	Light-induced degradation of adapted quadruple junction thin film silicon solar cells for photoelectrochemical water splitting. <i>Solar Energy Materials and Solar Cells</i> , 2016 , 145, 142-147	6.4	26
264	Solution-Based Silicon in Thin-Film Solar Cells. <i>Advanced Energy Materials</i> , 2014 , 4, 1301871	21.8	26
263	Characterization of the CdS/Cu(In,Ga)Se ₂ interface by electron beam induced currents. <i>Thin Solid Films</i> , 2007 , 515, 6163-6167	2.2	26
262	Diffusion-limited transport of I ⁻ 3 through nanoporous TiO ₂ -polymer gel networks. <i>Journal of Chemical Physics</i> , 2004 , 121, 11374-8	3.9	26
261	Device Analysis of Cu(In,Ga)Se ₂ Heterojunction Solar Cells - Some Open Questions. <i>Materials Research Society Symposia Proceedings</i> , 2001 , 668, 1		26
260	Direct observation of a scaling effect on effective minority carrier lifetimes. <i>Journal of Applied Physics</i> , 1994 , 76, 4168-4172	2.5	25
259	Understanding the energy yield of photovoltaic modules in different climates by linear performance loss analysis of the module performance ratio. <i>IET Renewable Power Generation</i> , 2017 , 11, 558-565	2.9	25

258	Development towards cell-to-cell monolithic integration of a thin-film solar cell and lithium-ion accumulator. <i>Journal of Power Sources</i> , 2016 , 327, 340-344	8.9	25
257	Solar hydrogen production: a bottom-up analysis of different photovoltaic/electrolysis pathways. <i>Sustainable Energy and Fuels</i> , 2019 , 3, 801-813	5.8	24
256	Capacitance Spectroscopy of Thin-Film Solar Cells 2011 , 81-105		24
255	Closed-form expression for the current/ voltage characteristics of pin solar cells. <i>Applied Physics A: Materials Science and Processing</i> , 2003 , 77, 865-871	2.6	24
254	Cu(In,Ga)Se ₂ SOLAR CELLS. <i>Series on Photoconversion of Solar Energy</i> , 2001 , 277-345		24
253	Solar water splitting with earth-abundant materials using amorphous silicon photocathodes and Al/Ni contacts as hydrogen evolution catalyst. <i>Chemical Physics Letters</i> , 2015 , 638, 25-30	2.5	23
252	Recombination and resistive losses at ZnO/B-Si:H/B-Si interfaces in heterojunction back contacts for Si solar cells. <i>Journal of Applied Physics</i> , 2007 , 102, 094507	2.5	23
251	Nucleation and growth of current filaments in semiconductors. <i>Journal of Applied Physics</i> , 1990 , 67, 1412-1416	2.5	23
250	Wet-Chemical Preparation of Silicon Tunnel Oxides for Transparent Passivated Contacts in Crystalline Silicon Solar Cells. <i>ACS Applied Materials & Interfaces</i> , 2018 , 10, 14259-14263	9.5	22
249	Optical design of spectrally selective interlayers for perovskite/silicon heterojunction tandem solar cells. <i>Optics Express</i> , 2018 , 26, A750-A760	3.3	22
248	Charge Carrier Collection and Contact Selectivity in Solar Cells. <i>Advanced Materials Interfaces</i> , 2019 , 6, 1900252	4.6	22
247	Effect of localized states on the reciprocity between quantum efficiency and electroluminescence in Cu(In,Ga)Se ₂ and Si thin-film solar cells. <i>Solar Energy Materials and Solar Cells</i> , 2014 , 129, 95-103	6.4	22
246	Illumination intensity and spectrum-dependent performance of thin-film silicon single and multijunction solar cells. <i>Solar Energy Materials and Solar Cells</i> , 2017 , 159, 427-434	6.4	22
245	Matching of Silicon Thin-Film Tandem Solar Cells for Maximum Power Output. <i>International Journal of Photoenergy</i> , 2013 , 2013, 1-7	2.1	22
244	Band alignments in the Cu(In,Ga)(S,Se) ₂ alloy system determined from deep-level defect energies. <i>Applied Physics A: Materials Science and Processing</i> , 2001 , 73, 769-772	2.6	22
243	Analysis of internal quantum efficiency and a new graphical evaluation scheme. <i>Solid-State Electronics</i> , 1995 , 38, 1009-1015	1.7	22
242	Dynamics of current filaments in p-type germanium under the influence of a transverse magnetic field. <i>Journal of Applied Physics</i> , 1991 , 70, 232-235	2.5	22
241	Microscopic Perspective on Photovoltaic Reciprocity in Ultrathin Solar Cells. <i>Physical Review Letters</i> , 2017 , 118, 247702	7.4	21

240	Influence of base pressure and atmospheric contaminants on a-Si:H solar cell properties. <i>Journal of Applied Physics</i> , 2008 , 104, 094507	2.5	21
239	Effective diffusion lengths for minority carriers in solar cells as determined from internal quantum efficiency analysis. <i>Journal of Applied Physics</i> , 1999 , 85, 3634-3637	2.5	21
238	Imaging of spatio-temporal structures in semiconductors. <i>Solid-State Electronics</i> , 1989 , 32, 1365-1369	1.7	21
237	Observation of a Large-Scale Sheetlike Current Filament in a Thinn-GaAs Layer. <i>Journal of the Physical Society of Japan</i> , 1990 , 59, 420-423	1.5	21
236	Spatio-temporal instabilities in the electric breakdown of p-germanium. <i>Solid-State Electronics</i> , 1988 , 31, 817-820	1.7	21
235	What is a deep defect? Combining Shockley-Read-Hall statistics with multiphonon recombination theory. <i>Physical Review Materials</i> , 2020 , 4,	3.2	21
234	Field Emission at Grain Boundaries: Modeling the Conductivity in Highly Doped Polycrystalline Semiconductors. <i>Physical Review Applied</i> , 2016 , 5,	4.3	20
233	On the thermodynamics of light trapping in solar cells. <i>Nature Materials</i> , 2014 , 13, 103-4	27	20
232	Photocurrent collection efficiency mapping of a silicon solar cell by a differential luminescence imaging technique. <i>Applied Physics Letters</i> , 2014 , 105, 163507	3.4	20
231	Advancing tandem solar cells by spectrally selective multilayer intermediate reflectors. <i>Optics Express</i> , 2014 , 22 Suppl 5, A1270-7	3.3	20
230	Reverse biased electroluminescence spectroscopy of crystalline silicon solar cells with high spatial resolution. <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2010 , 207, 2597-2600	1.6	20
229	Spatial inhomogeneities in Cu(In,Ga)Se ₂ solar cells analyzed by an electron beam induced voltage technique. <i>Journal of Applied Physics</i> , 2006 , 100, 124501	2.5	20
228	Highly resistive Cu(In,Ga)Se ₂ absorbers for improved low-irradiance performance of thin-film solar cells. <i>Thin Solid Films</i> , 2004 , 451-452, 160-165	2.2	20
227	Critical Dynamics near the Onset of Spontaneous Oscillations in p -Germanium. <i>Europhysics Letters</i> , 1989 , 9, 743-748	1.6	20
226	Quantifying the Absorption Onset in the Quantum Efficiency of Emerging Photovoltaic Devices. <i>Advanced Energy Materials</i> , 2021 , 11, 2100022	21.8	20
225	Front contact optimization for rear-junction SHJ solar cells with ultra-thin n-type nanocrystalline silicon oxide. <i>Solar Energy Materials and Solar Cells</i> , 2020 , 209, 110471	6.4	19
224	Performance stability of photovoltaic modules in different climates. <i>Progress in Photovoltaics: Research and Applications</i> , 2017 , 25, 968-981	6.8	19
223	Evaluation of electron beam induced current profiles of Cu(In,Ga)Se ₂ solar cells with different Ga-contents. <i>Thin Solid Films</i> , 2009 , 517, 2357-2359	2.2	19

222	Reply to Comments on Electronic Transport in Dye-Sensitized Nanoporous TiO ₂ Solar Cells Comparison of Electrolyte and Solid-State Devices On the Photovoltaic Action in pn-Junction and Dye-Sensitized Solar Cells. <i>Journal of Physical Chemistry B</i> , 2003 , 107, 13547-13550	3.4	19
221	Sodium induced secondary phase segregations in CuGaSe ₂ thin films. <i>Journal of Crystal Growth</i> , 2001 , 233, 13-21	1.6	19
220	Internal quantum efficiency of thin epitaxial silicon solar cells. <i>Applied Physics Letters</i> , 1995 , 66, 1261-1263	3.4	19
219	Evidence of Type-III Intermittency in the Electric Breakdown of p-Type Germanium. <i>Europhysics Letters</i> , 1991 , 14, 1-6	1.6	19
218	Localized plasmonic losses at metal back contacts of thin-film silicon solar cells 2010 ,		18
217	Air-Annealing Effects on Polycrystalline Cu(In,Ga)Se ₂ Heterojunctions. <i>Solid State Phenomena</i> , 1999 , 67-68, 409-414	0.4	18
216	Electron-beam induced instability during filamentary current transport in GaAs. <i>European Physical Journal B</i> , 1990 , 81, 53-58	1.2	18
215	Modeling and practical realization of thin film silicon-based integrated solar water splitting devices. <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2016 , 213, 1738-1746	1.6	18
214	Influence of the operating temperature on the performance of silicon based photoelectrochemical devices for water splitting. <i>Materials Science in Semiconductor Processing</i> , 2016 , 42, 142-146	4.3	17
213	Defect passivation by hydrogen reincorporation for silicon quantum dots in SiC/SiO _x hetero-superlattice. <i>Journal of Non-Crystalline Solids</i> , 2012 , 358, 2145-2149	3.9	17
212	A multi-diode model for spatially inhomogeneous solar cells. <i>Thin Solid Films</i> , 2005 , 487, 14-18	2.2	17
211	Grain Boundary Recombination in Thin-Film Silicon Solar Cells. <i>Solid State Phenomena</i> , 2001 , 80-81, 299-304	3.4	17
210	Band offset variations at Ge/GaAs (100) interfaces. <i>Applied Physics Letters</i> , 1993 , 62, 261-263	3.4	17
209	Self-Organized Critical Behaviour in the Low-Temperature Impact Ionization Breakdown of p-Ge. <i>Europhysics Letters</i> , 1990 , 12, 423-428	1.6	17
208	Device Performance of Emerging Photovoltaic Materials (Version 2). <i>Advanced Energy Materials</i> , 2016 , 6, 1825-1834	2.8	17
207	Photoluminescence Analysis of Thin-Film Solar Cells 2016 , 275-297		16
206	Injection and Collection Diffusion Lengths of Polycrystalline Thin-Film Solar Cells. <i>Solid State Phenomena</i> , 1999 , 67-68, 81-88	0.4	16
205	Impact ionization avalanche breakdown in short crystal regions of p-Ge. <i>Journal of Applied Physics</i> , 1990 , 67, 2980-2984	2.5	16

204	Silicon quantum dot formation in SiC/SiO _x hetero-superlattice. <i>Energy Procedia</i> , 2011 , 10, 249-254	2.3	15
203	Charge carrier transport via defect states in Cu(In,Ga)Se ₂ thin films and Cu(In,Ga)Se ₂ /CdS/ZnO heterojunctions. <i>Physical Review B</i> , 2000 , 61, 16052-16059	3.3	15
202	Efficient Area Matched Converter Aided Solar Charging of Lithium Ion Batteries Using High Voltage Perovskite Solar Cells. <i>ACS Applied Energy Materials</i> , 2020 , 3, 431-439	6.1	15
201	Transient phenomena in Cu(In,Ga)Se ₂ solar modules investigated by electroluminescence imaging. <i>Thin Solid Films</i> , 2013 , 535, 307-310	2.2	14
200	High band gap Cu(In,Ga)Se ₂ solar cells and modules prepared with in-line co-evaporation. <i>Thin Solid Films</i> , 2003 , 431-432, 543-547	2.2	14
199	Notizen: Comparison Between a Generic Reaction- Diffusion Model and a Synergetic Semiconductor System. <i>Zeitschrift Fur Naturforschung - Section A Journal of Physical Sciences</i> , 1987 , 42, 655-656	1.4	14
198	How Contact Layers Control Shunting Losses from Pinholes in Thin-Film Solar Cells. <i>Journal of Physical Chemistry C</i> , 2018 , 122, 27263-27272	3.8	14
197	Poly-Si/SiO _x /c-Si passivating contact with 738 mV implied open circuit voltage fabricated by hot-wire chemical vapor deposition. <i>Applied Physics Letters</i> , 2019 , 114, 153901	3.4	13
196	Plasmonic back contacts with non-ordered Ag nanostructures for light trapping in thin-film silicon solar cells. <i>Materials Science and Engineering B: Solid-State Materials for Advanced Technology</i> , 2013 , 178, 630-634	3.1	13
195	Optical simulations of microcrystalline silicon solar cells applying plasmonic reflection grating back contacts. <i>Journal of Photonics for Energy</i> , 2012 , 2, 027002	1.2	13
194	Analysis of the series resistance in pin-type thin-film silicon solar cells. <i>Journal of Applied Physics</i> , 2013 , 113, 134503	2.5	13
193	Analysis of recombination centers in epitaxial silicon thin-film solar cells by temperature-dependent quantum efficiency measurements. <i>Applied Physics Letters</i> , 2003 , 82, 2637-2639 ^{3,4}		13
192	Transparent silicon carbide/tunnel SiO ₂ passivation for c-Si solar cell front side: Enabling J _{sc} > 42 mA/cm ² and iVoc of 742 mV. <i>Progress in Photovoltaics: Research and Applications</i> , 2020 , 28, 321-327	6.8	12
191	Compatibility study towards monolithic self-charging power unit based on all-solid thin-film solar module and battery. <i>Journal of Power Sources</i> , 2017 , 365, 303-307	8.9	12
190	Shunt mitigation in ZnO:Al/i-ZnO/CdS/Cu(In,Ga)Se ₂ solar modules by the i-ZnO/CdS buffer combination. <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2015 , 212, 541-546	1.6	12
189	Control of secondary phase segregations during CuGaSe ₂ thin-film growth. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 2002 , 20, 1247-1253	2.9	12
188	Photoelectrochemical application of thin-film silicon triple-junction solar cell in batteries. <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2016 , 213, 1926-1931	1.6	11
187	Linking structural properties with functionality in solar cell materials [the effective mass and effective density of states. <i>Sustainable Energy and Fuels</i> , 2018 , 2, 1550-1560	5.8	11

186	Effect of light soaking on the electro- and photoluminescence of Cu(In,Ga)Se ₂ solar cells. <i>Applied Physics Letters</i> , 2013 , 103, 183504	3.4	11
185	On the geometry of plasmonic reflection grating back contacts for light trapping in prototype amorphous silicon thin-film solar cells. <i>Journal of Photonics for Energy</i> , 2014 , 5, 057004	1.2	11
184	Modelling of photo- and electroluminescence of hydrogenated microcrystalline silicon solar cells. <i>Physica Status Solidi C: Current Topics in Solid State Physics</i> , 2012 , 9, 1963-1967		11
183	Fundamental Electrical Characterization of Thin-Film Solar Cells 2011 , 33-60		11
182	Quantum efficiency and admittance spectroscopy on Cu(In,Ga)Se ₂ solar cells. <i>Solar Energy Materials and Solar Cells</i> , 1998 , 50, 79-85	6.4	11
181	CuGaSe ₂ -based superstrate solar cells. <i>Thin Solid Films</i> , 2001 , 387, 74-76	2.2	11
180	Circuit-limited oscillation at the onset of avalanche breakdown in semiconductors. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1990 , 147, 229-233	2.3	11
179	Optimization of Transparent Passivating Contact for Crystalline Silicon Solar Cells. <i>IEEE Journal of Photovoltaics</i> , 2020 , 10, 46-53	3.7	11
178	A Bias-Free, Stand-Alone, and Scalable Photovoltaic Electrochemical Device for Solar Hydrogen Production. <i>Advanced Sustainable Systems</i> , 2020 , 4, 2000070	5.9	10
177	Novel series connection concept for thin film solar modules. <i>Progress in Photovoltaics: Research and Applications</i> , 2013 , 21, 972-979	6.8	10
176	Collection and conversion properties of photovoltaic fluorescent collectors with photonic band stop filters 2006 ,		10
175	Structural and Electronic Properties of Polycrystalline Cu(In,Ga)(S,Se) ₂ Alloys. <i>Materials Research Society Symposia Proceedings</i> , 2001 , 668, 1		10
174	Nonequilibrium phase transition in the electronic transport of p-type germanium at low temperatures. <i>Physical Review B</i> , 1990 , 42, 9019-9024	3.3	10
173	How solar cell efficiency is governed by the β product. <i>Physical Review Research</i> , 2020 , 2,	3.9	10
172	Influence of Room Temperature Sputtered Al-Doped Zinc Oxide on Passivation Quality in Silicon Heterojunction Solar Cells. <i>IEEE Journal of Photovoltaics</i> , 2019 , 9, 1485-1491	3.7	9
171	Effect of reabsorption and photon recycling on photoluminescence spectra and transients in lead-halide perovskite crystals. <i>JPhys Materials</i> , 2020 , 3, 025003	4.2	9
170	Angular dependence of light trapping in nanophotonic thin-film solar cells. <i>Optics Express</i> , 2015 , 23, A1535-88	3.5	9
169	Quantitative evaluation method for electroluminescence images of a-Si:H thin-film solar modules. <i>Physica Status Solidi - Rapid Research Letters</i> , 2013 , 7, 627-630	2.5	9

168	Ray tracing for the optics at nano-textured ZnO/Si and ZnO/Silicon interfaces. <i>Progress in Photovoltaics: Research and Applications</i> , 2011 , 19, 724-732	6.8	9
167	Charge separation in excitonic and bipolar solar cells – A detailed balance approach. <i>Thin Solid Films</i> , 2008 , 516, 7144-7148	2.2	9
166	Consequence of 3-MeV electron irradiation on the photovoltaic output parameters of Cu(In,Ga)Se ₂ solar cells. <i>Thin Solid Films</i> , 2003 , 431-432, 453-456	2.2	9
165	Illumination-induced recovery of Cu(In,Ga)Se ₂ solar cells after high-energy electron irradiation. <i>Applied Physics Letters</i> , 2003 , 82, 1410-1412	3.4	9
164	Reconstruction of traveling waves in semi-insulating GaAs. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1991 , 152, 356-360	2.3	9
163	The Ideality of Spatially Inhomogeneous Schottky Contacts. <i>Materials Research Society Symposia Proceedings</i> , 1992 , 260, 245		9
162	Switching behavior of current filaments in p-germanium connected in parallel. <i>European Physical Journal B</i> , 1988 , 71, 305-310	1.2	9
161	Transparent-conductive-oxide-free front contacts for high-efficiency silicon heterojunction solar cells. <i>Joule</i> , 2021 , 5, 1535-1547	27.8	9
160	Measurement and modeling of reverse biased electroluminescence in multi-crystalline silicon solar cells. <i>Journal of Applied Physics</i> , 2013 , 114, 134509	2.5	8
159	Hydrogen Effusion Experiments 2011 , 449-475		8
158	One-Dimensional Electro-Optical Simulations of Thin-Film Solar Cells 2011 , 501-527		8
157	Time constants of open circuit voltage relaxation in Cu(In,Ga)Se ₂ solar cells. <i>Thin Solid Films</i> , 2007 , 515, 6243-6245	2.2	8
156	Minority carrier collection in CuGaSe ₂ solar cells. <i>Thin Solid Films</i> , 2004 , 451-452, 430-433	2.2	8
155	Low-resistivity p-type a-Si:H/AZO hole contact in high-efficiency silicon heterojunction solar cells. <i>Applied Surface Science</i> , 2021 , 542, 148749	6.7	8
154	Wide gap microcrystalline silicon carbide emitter for amorphous silicon oxide passivated heterojunction solar cells. <i>Japanese Journal of Applied Physics</i> , 2017 , 56, 022302	1.4	7
153	Application of Raman spectroscopy for depth-dependent evaluation of the hydrogen concentration of amorphous silicon. <i>Thin Solid Films</i> , 2018 , 653, 223-228	2.2	7
152	Impact of doped microcrystalline silicon oxide layers on crystalline silicon surface passivation. <i>Canadian Journal of Physics</i> , 2014 , 92, 758-762	1.1	7
151	Simulations of geometry effects and loss mechanisms affecting the photon collection in photovoltaic fluorescent collectors. <i>EPJ Photovoltaics</i> , 2012 , 3, 30101	0.7	7

150	Investigation of laser scribing of a-Si:H from the film side for solar modules using a UV laser with ns pulses. <i>Applied Physics A: Materials Science and Processing</i> , 2011 , 105, 355-362	2.6	7
149	Structure and electronic properties of μ -SiC:H for photovoltaic applications. <i>Journal of Physics: Conference Series</i> , 2011 , 326, 012019	0.3	7
148	Response to [Comment on Efficiency limits of photovoltaic fluorescent collectors][Appl. Phys. Lett. 87, 171101 (2005)] <i>Applied Physics Letters</i> , 2006 , 88, 176102	3.4	7
147	Two-Dimensional Simulations of Microcrystalline Silicon Solar Cells. <i>Solid State Phenomena</i> , 2001 , 80-81, 311-316	0.4	7
146	Electronically active defects in CuGaSe ₂ -based heterojunction solar cells. <i>Thin Solid Films</i> , 2000 , 361-362, 415-419	2.2	7
145	Analysis of Cu(In,Ga)Se ₂ thin-film modules by electro-modulated luminescence. <i>Journal of Applied Physics</i> , 2016 , 119, 095704	2.5	7
144	Imaging photocurrent collection losses in solar cells. <i>Applied Physics Letters</i> , 2016 , 109, 223502	3.4	7
143	From room to roof: How feasible is direct coupling of solar-battery power unit under variable irradiance?. <i>Solar Energy</i> , 2020 , 206, 732-740	6.8	6
142	Hydrogen Effusion Experiments 2016 , 569-595		6
141	Defect Diagnostics of Scribing Failures and Cu-Rich Debris in Cu(In,Ga)Se ₂ Thin-Film Solar Modules With Electroluminescence and Thermography. <i>IEEE Journal of Photovoltaics</i> , 2015 , 5, 1179-1187	3.7	6
140	Annealing induced defects in SiC, SiO _x single layers, and SiC/SiO _x hetero-superlattices. <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2012 , 209, 1960-1964	1.6	6
139	Electrical characterization of P3 isolation lines patterned with a UV laser incident from the film side on thin-film silicon solar cells. <i>Solar Energy Materials and Solar Cells</i> , 2013 , 108, 87-92	6.4	6
138	Electroluminescence Analysis of Solar Cells and Solar Modules 2011 , 61-80		6
137	Influence of built-in voltage in optimized extremely thin absorber solar cells. <i>Thin Solid Films</i> , 2005 , 480-481, 447-451	2.2	6
136	Role of Defects and Defect Metastabilities for the Performance and Stability of Cu(In,Ga)Se ₂ Based Solar Cells. <i>Japanese Journal of Applied Physics</i> , 2000 , 39, 389	1.4	6
135	Heterojunctions for Polycrystalline Silicon Solar Cells. <i>Solid State Phenomena</i> , 1999 , 67-68, 571-576	0.4	6
134	Bifunctional CoFeVO _x Catalyst for Solar Water Splitting by using Multijunction and Heterojunction Silicon Solar Cells. <i>Advanced Materials Technologies</i> , 2020 , 5, 2000592	6.8	6
133	Mechanism for crystalline Si surface passivation by the combination of SiO ₂ tunnel oxide and μ c-SiC:H thin film. <i>Physica Status Solidi - Rapid Research Letters</i> , 2016 , 10, 233-236	2.5	6

132	Influence of Oxygen on Sputtered Titanium-Doped Indium Oxide Thin Films and Their Application in Silicon Heterojunction Solar Cells. <i>Solar Rrl</i> , 2021 , 5, 2000501	7.1	6
131	Defect tolerant device geometries for lead-halide perovskites. <i>Materials Advances</i> , 2021 , 2, 3655-3670	3.3	6
130	Improved Infrared Light Management with Transparent Conductive Oxide/Amorphous Silicon Back Reflector in High-Efficiency Silicon Heterojunction Solar Cells. <i>Solar Rrl</i> , 2021 , 5, 2000576	7.1	6
129	Deposition of intrinsic hydrogenated amorphous silicon for thin-film solar cells in comparative study for layers grown statically by RF-PECVD and dynamically by VHF-PECVD. <i>Progress in Photovoltaics: Research and Applications</i> , 2014 , 22, 198-207	6.8	5
128	Modeling charge carrier collection in multiple exciton generating PbSe quantum dots. <i>Thin Solid Films</i> , 2009 , 517, 2438-2442	2.2	5
127	High-Energy Electron and Proton Irradiation of Cu(In,Ga)Se ₂ Heterojunction Solar Cells. <i>Materials Research Society Symposia Proceedings</i> , 2001 , 668, 1		5
126	Influence of Na and S incorporation on the electronic transport properties of Cu(In,Ga)Se ₂ /sub 2/ solar cells 1996 ,		5
125	Numerical simulation of innovative device structures for silicon thin-film solar cells 1996 ,		5
124	Resonant imaging of a critical dynamical state in the low-temperature electric transport of p-Ge. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1991 , 153, 385-389	2.3	5
123	Barrier Inhomogeneities at Schottky Contacts: Curved Richardson Plots, Idealities, and Flat Band Barriers. <i>Materials Research Society Symposia Proceedings</i> , 1992 , 260, 311		5
122	On the Scaling of Type-1 Intermittency in a Semiconductor Experiment. <i>Zeitschrift Fur Naturforschung - Section A Journal of Physical Sciences</i> , 1991 , 46, 1012-1014	1.4	5
121	Luminescence Analysis of Charge-Carrier Separation and Internal Series-Resistance Losses in Cu(In,Ga)Se ₂ Solar Cells. <i>Physical Review Applied</i> , 2020 , 14,	4.3	5
120	Development of a Transparent Passivated Contact as a Front Side Contact for Silicon Heterojunction Solar Cells 2018 ,		5
119	Cu(In,Ga)Se ₂ Solar Cells: Device Stability Based on Chemical Flexibility 1999 , 11, 957		5
118	Analysis of the light-induced degradation of differently matched tandem solar cells with and without an intermediate reflector using the Power Matching Method. <i>Solar Energy Materials and Solar Cells</i> , 2015 , 143, 1-8	6.4	4
117	Direct analysis of the current density vs. voltage curves of a CdTe module during outdoor exposure. <i>Solar Energy</i> , 2015 , 113, 88-100	6.8	4
116	. <i>IEEE Journal of Photovoltaics</i> , 2018 , 8, 272-277	3.7	4
115	Capacitance Spectroscopy of Thin-Film Solar Cells 2016 , 93-119		4

114	Post passivation light trapping back contacts for silicon heterojunction solar cells. <i>Nanoscale</i> , 2016 , 8, 18726-18733	7.7	4
113	Pronounced Surface Band Bending of Thin-Film Silicon Revealed by Modeling Core Levels Probed with Hard X-rays. <i>ACS Applied Materials & Interfaces</i> , 2016 , 8, 17685-93	9.5	4
112	In Situ-Doped Silicon Thin Films for Passivating Contacts by Hot-Wire Chemical Vapor Deposition with a High Deposition Rate of 42 nm/min. <i>ACS Applied Materials & Interfaces</i> , 2019 , 11, 30493-30498	8.5	4
111	Cu(In,Ga)Se ₂ Thin-Film Solar Cells 2013 , 261-304		4
110	Approaching Solar-Grade a-Si:H for Photovoltaic Applications via Atmospheric Pressure CVD Using a Trisilane-Derived Liquid Precursor. <i>Solar Rrl</i> , 2017 , 1, 1700030	7.1	4
109	Current Concepts for Optical Path Enhancement in Solar Cells 2015 , 1-20		4
108	Fluorescent Concentrators for Photovoltaic Applications 2015 , 283-321		4
107	A new 2D model for the electrical potential in a cell stripe in thin-film solar modules including local defects. <i>Progress in Photovoltaics: Research and Applications</i> , 2015 , 23, 331-339	6.8	4
106	Spectrally selective intermediate reflectors for tandem thin-film silicon solar cells 2013 ,		4
105	Annealing studies of substoichiometric amorphous SiO _x layers for c-Si surface passivation. <i>Physica Status Solidi C: Current Topics in Solid State Physics</i> , 2010 , 7, NA-NA		4
104	Directional selectivity and light-trapping in solar cells 2008 ,		4
103	Recombination Mechanisms in Cu(In,Ga)(Se,S) ₂ Solar Cells. <i>Springer Series in Materials Science</i> , 2006 , 91-114		4
102	Glass Frit Sealed Dye Solar Modules with Adaptable Screen Printed Design 2006 ,		4
101	Recombination and Resistive Losses in Amorphous Silicon / Crystalline Silicon Heterojunction Solar Cells. <i>Materials Research Society Symposia Proceedings</i> , 2000 , 609, 1311		4
100	Barrier Inhomogeneities Dominating Low-Frequency Excess Noise of Schottky Contacts. <i>Materials Research Society Symposia Proceedings</i> , 1992 , 260, 305		4
99	Nascent states of current filamentation in semiconductors governed by negative differential resistance. <i>Solid State Communications</i> , 1990 , 73, 369-372	1.6	4
98	Role of Surface Band Gap Widening in Cu(In, Ga)(Se, S) ₂ Thin-Films for the Photovoltaic Performance of ZnO/CdS/Cu(In, Ga)(Se, S) ₂ Heterojunction Solar Cells. <i>Materials Research Society Symposia Proceedings</i> , 2003 , 763, 881		4
97	Schottky Contacts on Silicon. <i>Springer Series in Electrophysics</i> , 1994 , 89-148		4

96	Spatio Temporal Correlations in Semiconductors 1991 , 145-176		4
95	Reply to "Ideal solar cell efficiencies" <i>Nature Photonics</i> , 2021 , 15, 165-166	33.9	4
94	Storage batteries in photovoltaic-electrochemical device for solar hydrogen production. <i>Journal of Power Sources</i> , 2021 , 509, 230367	8.9	4
93	Multilayer Capacitances: How Selective Contacts Affect Capacitance Measurements of Perovskite Solar Cells 2022 , 1,		4
92	Bandgap imaging in Cu(In,Ga)Se ₂ photovoltaic modules by electroluminescence. <i>Progress in Photovoltaics: Research and Applications</i> , 2017 , 25, 184-191	6.8	3
91	Nanoscale Investigation of Polarization-Dependent Light Coupling to Individual Waveguide Modes in Nanophotonic Thin-Film Solar Cells. <i>IEEE Journal of Photovoltaics</i> , 2015 , 5, 1523-1527	3.7	3
90	In Situ Real-Time Characterization of Thin-Film Growth 2016 , 441-467		3
89	Electron Microscopy on Thin Films for Solar Cells 2016 , 371-420		3
88	Fundamental Electrical Characterization of Thin-Film Solar Cells 2016 , 41-69		3
87	Electroluminescence Analysis of Solar Cells and Solar Modules 2016 , 71-92		3
86	Optically active defects in SiC, SiO _x single layers and SiC/SiO _x hetero-superlattices. <i>Solar Energy Materials and Solar Cells</i> , 2014 , 129, 3-6	6.4	3
85	Cu(In,Ga)Se ₂ Thin-Film Solar Cells 2012 , 323-371		3
84	Introduction to Thin-Film Photovoltaics 2011 , 1-32		3
83	Two- and Three-Dimensional Electronic Modeling of Thin-Film Solar Cells 2011 , 529-540		3
82	Electroluminescence imaging of Cu(In,Ga)Se ₂ thin film solar modules. <i>Materials Research Society Symposia Proceedings</i> , 2009 , 1165, 1		3
81	New aspects of phase segregation and junction formation in CuInSe ₂ /sub 2/		3
80	Metastable changes of the electrical transport properties of Cu(In,Ga)Se ₂ /sub 2/		3
79	Transport analysis for polycrystalline silicon solar cells on glass substrates		3

78	Quantification of Light Trapping Using a Reciprocity Between Electroluminescent Emission and Photovoltaic Action in a Solar Cell. <i>Materials Research Society Symposia Proceedings</i> , 2008 , 1101, 1		3
77	A Simple Method to Extract the Diffusion Length from the Output Parameters of Solar Cells - Application to Polycrystalline Silicon. <i>Solid State Phenomena</i> , 2003 , 93, 399-404	0.4	3
76	Band gap fluctuations in Cu(In,Ga)Se ₂ thin films. <i>Materials Research Society Symposia Proceedings</i> , 2005 , 865, 1641		3
75	Two-dimensional simulation of thin-film silicon solar cells with innovative device structures 1999 , 7, 85-100		3
74	Photon Tunneling in Tandem Solar Cells With Intermediate Reflector. <i>IEEE Journal of Photovoltaics</i> , 2016 , 6, 597-603	3.7	3
73	Phosphorus Catalytic Doping on Intrinsic Silicon Thin Films for the Application in Silicon Heterojunction Solar Cells. <i>ACS Applied Materials & Interfaces</i> , 2020 , 12, 56615-56621	9.5	2
72	One-Dimensional Electro-Optical Simulations of Thin-Film Solar Cells 2016 , 633-657		2
71	Transient Optoelectronic Characterization of Thin-Film Solar Cells 2016 , 147-162		2
70	Cu(In,Ga)Se ₂ AND RELATED SOLAR CELLS. <i>Series on Photoconversion of Solar Energy</i> , 2014 , 245-305		2
69	Scanning Probe Microscopy on Inorganic Thin Films for Solar Cells 2011 , 275-298		2
68	Electron Microscopy on Thin Films for Solar Cells 2011 , 299-345		2
67	Efficient light trapping scheme by periodic and quasi-random light trapping structures. <i>Conference Record of the IEEE Photovoltaic Specialists Conference</i> , 2008 ,		2
66	Geometry effects on photon collection in photovoltaic fluorescent collectors 2008 ,		2
65	Preface: phys. stat. sol. (a) 205/12. <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2008 , 205, 2735-2736	1.6	2
64	Anodizing Method Yielding Multiple Porous Seed Layers for the Epitaxial Growth of Monocrystalline Si Films. <i>Journal of the Electrochemical Society</i> , 2006 , 153, C133	3.9	2
63	Cu(In,Ga)Se ₂ Thin-Film Solar Cells 2003 , 367-413		2
62	Modification of Cu(In, Ga)Se ₂ Surface by Treatment in Cadmium Solutions. <i>Materials Research Society Symposia Proceedings</i> , 2003 , 763, 8171		2
61	An Analytical Model for Rectifying Contacts on Polycrystalline Semiconductors. <i>Solid State Phenomena</i> , 1999 , 67-68, 553-558	0.4	2

60	Dielectric spectroscopy of relaxation processes in Cu(In,Ga)Se/sub 2/ solar cells 1996 ,		2
59	Impact ionization breakdown in p-germanium samples with very short contact distances. <i>Solid-State Electronics</i> , 1989 , 32, 1197-1200	1.7	2
58	Characteristic Relaxation Times of Low-temperature Semiconductor Breakdown Kinetics. <i>Zeitschrift Fur Naturforschung - Section A Journal of Physical Sciences</i> , 1989 , 44, 629-632	1.4	2
57	Hall-effect measurements during low-temperature avalanche breakdown of p-germanium. <i>Philosophical Magazine Letters</i> , 1988 , 57, 311-314	1	2
56	Dielectric Junction: Electrostatic Design for Charge Carrier Collection in Solar Cells. <i>Solar Rrl</i> , 2100720	7.1	2
55	Prototyping of nanophotonic grating back contacts for light trapping in planar silicon solar cells. <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2016 , 213, 1949-1954	1.6	2
54	High-quality amorphous silicon thin films for tunnel oxide passivating contacts deposited at over 150 nm/min. <i>Progress in Photovoltaics: Research and Applications</i> , 2021 , 29, 16-23	6.8	2
53	Photovoltaics: Nanoengineered Materials and Their Functionality in Solar Cells 2017 , 181-206		1
52	Electric properties and carrier multiplication in breakdown sites in multi-crystalline silicon solar cells. <i>Journal of Applied Physics</i> , 2015 , 117, 205703	2.5	1
51	Electrical Repair of Incomplete Back Contact Insulation (P1) in Cu(In,Ga)Se $\text{\$}_2\text{\$}$ Photovoltaic Thin-Film Modules. <i>IEEE Journal of Photovoltaics</i> , 2015 , 5, 1197-1205	3.7	1
50	Coupling Incident Light to Guided Modes in Thin-Film Tandem Solar Cells With Intermediate Reflector. <i>IEEE Journal of Photovoltaics</i> , 2015 , 5, 3-8	3.7	1
49	Development of Conductive SiC:H as a New Hydrogenation Technique for Tunnel Oxide Passivating Contacts. <i>ACS Applied Materials & Interfaces</i> , 2020 , 12, 29986-29992	9.5	1
48	Impact of Laser Treatment on Hydrogenated Amorphous Silicon Properties. <i>Advanced Engineering Materials</i> , 2020 , 22, 1901437	3.5	1
47	Introduction to Thin-Film Photovoltaics 2016 , 1-40		1
46	Characterizing the Light-Trapping Properties of Textured Surfaces with Scanning Near-Field Optical Microscopy 2016 , 257-274		1
45	Soft X-ray and Electron Spectroscopy: A Unique Tool Chest to Characterize the Chemical and Electronic Properties of Surfaces and Interfaces 2016 , 501-522		1
44	Thermography and electroluminescence imaging of scribing failures in Cu(In,Ga)Se ₂ thin film solar modules. <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2015 , 212, 2877-2888	1.6	1
43	The Principle of Detailed Balance and the Opto-Electronic Properties of Solar Cells 2015 , 21-48		1

42	Light-Trapping in Solar Cells by Directionally Selective Filters 2015 , 183-207		1
41	Linear Optics of Plasmonic Concepts to Enhance Solar Cell Performance 2015 , 209-230		1
40	Small-signal lock-in thermography at the maximum power point of an a-Si solar mini-module. <i>Physica Status Solidi - Rapid Research Letters</i> , 2014 , 8, 894-897	2.5	1
39	Degradation of tandem solar cells: Separating matching effects from Staebler-Wronski Effect using the Power-Matching-Method 2014 ,		1
38	Local junction voltages and radiative ideality factors of a-Si:H solar modules determined by electroluminescence imaging. <i>Materials Research Society Symposia Proceedings</i> , 2013 , 1536, 105-111		1
37	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
36	Enhanced light trapping in thin amorphous silicon solar cells by directionally selective optical filters 2010 ,		1
35	3D photonic crystals for photon management in solar cells 2010 ,		1
34	Inverted-opal photonic crystals for ultra light-trapping in solar cells 2010 ,		1
33	Ray tracing analysis of light scattering properties of randomly nano-textured ZnO films 2010 ,		1
32	Electroluminescence from Cu(In,Ga)Se ₂ Thin-film Solar Cells. <i>Materials Research Society Symposia Proceedings</i> , 2007 , 1012, 1		1
31	Cu(In,Ga)Se ₂ thin-film solar cells 2005 , 303-349		1
30			1
29	An oscillation mechanism of semiconductor breakdown due to magnetic field induced transverse motion of current filaments. <i>Semiconductor Science and Technology</i> , 1992 , 7, B486-B487	1.8	1
28	Symmetry-breaking pattern formation in semiconductor physics: Spatio-temporal current structures during avalanche breakdown. <i>Computers and Mathematics With Applications</i> , 1989 , 17, 467-473	2.7	1
27	Optical Optimization Potential of Transparent-Passivated Contacts in Silicon Solar Cells. <i>Solar Rrl</i> , 21010501	5.0	1
26	Consistent Interpretation of Electrical and Optical Transients in Halide Perovskite Layers and Solar Cells. <i>Advanced Energy Materials</i> , 2102290	21.8	1
25	Quantum Transport across Amorphous-Crystalline Interfaces in Tunnel Oxide Passivated Contact Solar Cells: Direct versus Defect-Assisted Tunneling. <i>Chinese Physics Letters</i> , 2021 , 38, 036301	1.8	1

24	Detailed balance analysis of photovoltaic materials and devices 2016 ,		1
23	Geometrical Light Trapping in Thin c-Si Solar Cells beyond Lambertian Limit 2019 ,		1
22	Application of Room Temperature Sputtered Al-doped Zinc Oxide in Silicon Heterojunction Solar Cells 2018 ,		1
21	Cu(In,Ga)Se ₂ Thin-Film Solar Cells 2018 , 371-418		1
20	Function Analysis of the Phosphine Gas Flow for n-Type Nanocrystalline Silicon Oxide Layer in Silicon Heterojunction Solar Cells. <i>ACS Applied Energy Materials</i> , 2021 , 4, 7544-7551	6.1	1
19	How Thin Practical Silicon Heterojunction Solar Cells Could Be? Experimental Study under 1 Sun and under Indoor Illumination. <i>Solar Rrl</i> ,2100594	7.1	1
18	Prediction of Limits of Solar-to-Hydrogen Efficiency from Polarization Curves of the Electrochemical Cells. <i>Solar Rrl</i> , 2022 , 6, 2100783	7.1	1
17	Effect of Doping, Photodoping, and Bandgap Variation on the Performance of Perovskite Solar Cells. <i>Advanced Optical Materials</i> ,2101947	8.1	1
16	Batteries to Keep Solar-Driven Water Splitting Running at Night: Performance of a Directly Coupled System. <i>Solar Rrl</i> ,2100916	7.1	0
15	Design of deterministic light-trapping structures for thin silicon heterojunction solar cells. <i>Optics Express</i> , 2021 , 29, 7410-7417	3.3	0
14	Scanning Probe Microscopy on Inorganic Thin Films for Solar Cells 2016 , 343-369		
13	Two- and Three-Dimensional Electronic Modeling of Thin-Film Solar Cells 2016 , 659-674		
12	Rear Side Diffractive Gratings for Silicon Wafer Solar Cells 2015 , 49-90		
11	Electroluminescence of Cu(In,Ga)Se ₂ solar cells and modules. <i>Materials Research Society Symposia Proceedings</i> , 2013 , 1538, 133-144		
10	Enhanced Light-trapping in Solar Cells by Directional Selective Optical Filters. <i>Materials Research Society Symposia Proceedings</i> , 2008 , 1101, 1		
9	Loss Mechanisms in Photovoltaic Fluorescent Collectors. <i>Materials Research Society Symposia Proceedings</i> , 2008 , 1101, 1		
8	Can Grain Boundaries Improve the Performance of Cu(In,Ga)Se ₂ Solar Cells?. <i>Materials Research Society Symposia Proceedings</i> , 2007 , 1012, 1		
7	Resistive Losses at c-Si/a-Si:H/ZnO Contacts for Heterojunction Solar Cells. <i>Materials Research Society Symposia Proceedings</i> , 2007 , 989, 4		

- 6 Cathodoluminescence Studies of Cu(In,Ga)Se₂ Thin-Films. *Solid State Phenomena*, **2003**, 93, 133-140 0.4
- 5 First Evidence of Self-Organized Criticality in the Impact Ionization Breakdown of Semiconductors. *Zeitschrift Fur Naturforschung - Section A Journal of Physical Sciences*, **1990**, 45, 835-836 1.4
- 4 SPATIO-TEMPORAL INSTABILITIES IN THE ELECTRIC BREAKDOWN OF P-GERMANIUM **1988**, 817-820
- 3 Cryoelectronic Application of a Hybrid Device Concept Based on Semiconducting and Superconducting Components **1989**, 575-578
- 2 SYMMETRY-BREAKING PATTERN FORMATION IN SEMICONDUCTOR PHYSICS: SPATIO-TEMPORAL CURRENT STRUCTURES DURING AVALANCHE BREAKDOWN **1989**, 467-473
- 1 On Negative Differential Resistance and Spontaneous Dissipative Structure Formation in the Electric Break-Down of p-Ge at Low Temperatures. *NATO ASI Series Series B: Physics*, **1993**, 261-268