Charlotte Platzer BjÃ¶rkman

List of Publications by Year
in descending order

111 papers	5,503 citations	87723 38 h-index	82410 72 g-index
114 all docs	114 docs citations	114 times ranked	3868 citing authors

#	Article	IF	Citations
1	Chemical Insights into the Instability of Cu₂ZnSnS₄ Films during Annealing. Chemistry of Materials, 2011, 23, 4625-4633.	3.2	416
2	A Detrimental Reaction at the Molybdenum Back Contact in Cu₂ZnSn(S,Se)₄ Thin-Film Solar Cells. Journal of the American Chemical Society, 2012, 134, 19330-19333.	6.6	353
3	Buffer layers and transparent conducting oxides for chalcopyrite Cu(In,Ga)(S,Se)₂ based thin film photovoltaics: present status and current developments. Progress in Photovoltaics: Research and Applications, 2010, 18, 411-433.	4.4	323
4	A low-temperature order-disorder transition in Cu2ZnSnS4 thin films. Applied Physics Letters, 2014, 104, .	1.5	315
5	Effects of Back Contact Instability on Cu₂ZnSnS₄ Devices and Processes. Chemistry of Materials, 2013, 25, 3162-3171.	3.2	263
6	Zn(O,S) buffer layers by atomic layer deposition in Cu(In,Ga)Se2 based thin film solar cells: Band alignment and sulfur gradient. Journal of Applied Physics, 2006, 100, 044506.	1.1	250
7	Strong Valence-Band Offset Bowing ofZnO1âˆ’xSxEnhancesp-Type Nitrogen Doping of ZnO-like Alloys. Physical Review Letters, 2006, 97, 146403.	2.9	245
8	Cuâ€“Zn disorder and band gap fluctuations in Cu₂ZnSn(S,Se)₄: Theoretical and experimental investigations. Physica Status Solidi (B): Basic Research, 2016, 253, 247-254.	0.7	173
9	Influence of precursor sulfur content on film formation and compositional changes in Cu2ZnSnS4 films and solar cells. Solar Energy Materials and Solar Cells, 2012, 98, 110-117.	3.0	172
10	Inline Cu(In,Ga)Se$_{2}$ Co-evaporation for High-Efficiency Solar Cells and Modules. IEEE Journal of Photovoltaics, 2013, 3, 1100-1105.	1.5	148
11	Rapid annealing of reactively sputtered precursors for Cu₂ZnSnS₄ solar cells. Progress in Photovoltaics: Research and Applications, 2014, 22, 10-17.	4.4	131
12	Atomic layer deposition of Zn1âˆ’xMgxO buffer layers for Cu(In,Ga)Se2 solar cells. Progress in Photovoltaics: Research and Applications, 2007, 15, 225-235.	4.4	104
13	Reduced interface recombination in Cu2ZnSnS4 solar cells with atomic layer deposition Zn1âˆ’<i>x</i>Sn<i>x</i>O<i>y</i> buffer layers. Applied Physics Letters, 2015, 107, .	1.5	99
14	A new thin film photochromic material: Oxygen-containing yttrium hydride. Solar Energy Materials and Solar Cells, 2011, 95, 3596-3599.	3.0	90
15	Direct evidence of current blocking by ZnSe in Cu2ZnSnSe4 solar cells. Applied Physics Letters, 2012, 100, .	1.5	87
16	Optimizing Ga-profiles for highly efficient Cu(In, Ga)Se₂thin film solar cells in simple and complex defect models. Journal Physics D: Applied Physics, 2014, 47, 485104.	1.3	87
17	Zn(O, S) Buffer Layers and Thickness Variations of CdS Buffer for Cu $_{2}$ZnSnS$_{4}$ Solar Cells. IEEE Journal of Photovoltaics, 2014, 4, 465-469.	1.5	82
18	Baseline model of graded-absorber Cu(In,Ga)Se2 solar cells applied to cells with Zn1âˆ’Mg O buffer layers. Thin Solid Films, 2011, 519, 7476-7480.	0.8	74

#	Article	IF	Citations
19	Cadmium Free Cu₂ZnSnS₄ Solar Cells with 9.7% Efficiency. Advanced Energy Materials, 2019, 9, 1900439.	10.2	69
20	Interface study of CuInSe2/ZnO and Cu(In,Ga)Se2/ZnO devices using ALD ZnO buffer layers. Thin Solid Films, 2003, 431-432, 321-325.	0.8	66
21	Atomic Layer Deposition of Cubic and Orthorhombic Phase Tin Monosulfide. Chemistry of Materials, 2017, 29, 2969-2978.	3.2	64
22	Zincâ€Tinâ€Oxide Buffer Layer and Low Temperature Post Annealing Resulting in a 9.0% Efficient Cdâ€Free Cu₂ZnSnS₄ Solar Cell. Solar Rrl, 2017, 1, 1700001.	3.1	62
23	Growth kinetics, properties, performance, and stability of atomic layer deposition Znâ€"Snâ€"O buffer layers for Cu(In,Ga)Se₂ solar cells. Progress in Photovoltaics: Research and Applications, 2012, 20, 883-891.	4.4	57
24	Back and front contacts in kesterite solar cells: state-of-the-art and open questions. JPhys Energy, 2019, 1, 044005.	2.3	57
25	Reactive sputtering of precursors for Cu2ZnSnS4 thin film solar cells. Thin Solid Films, 2012, 520, 7093-7099.	0.8	55
26	Rear Surface Optimization of CZTS Solar Cells by Use of a Passivation Layer With Nanosized Point Openings. IEEE Journal of Photovoltaics, 2016, 6, 332-336.	1.5	55
27	CuInxGa1â^'xSe2 as an efficient photocathode for solar hydrogen generation. International Journal of Hydrogen Energy, 2013, 38, 15027-15035.	3.8	52
28	Combining strong interface recombination with bandgap narrowing and short diffusion length in Cu2ZnSnS4 device modeling. Solar Energy Materials and Solar Cells, 2016, 144, 364-370.	3.0	52
29	The influence of buffer layer on the transient behavior of thin film chalcopyrite devices. Solar Energy Materials and Solar Cells, 2004, 84, 93-103.	3.0	49
30	The Influence of Absorber Thickness on Cu(In,Ga)Se$_{f 2}$ Solar Cells With Different Buffer Layers. IEEE Journal of Photovoltaics, 2013, 3, 1376-1382.	1.5	48
31	Optimization of ALD-(Zn,Mg)O buffer layers and (Zn,Mg)O/Cu(In,Ga)Se2 interfaces for thin film solar cells. Thin Solid Films, 2007, 515, 6024-6027.	0.8	46
32	Order-disorder transition in B-type Cu2ZnSnS4 and limitations of ordering through thermal treatments. Applied Physics Letters, 2016, 108, .	1.5	46
33	Interference effects in photoluminescence spectra of Cu2ZnSnS4 and Cu(In,Ga)Se2 thin films. Journal of Applied Physics, 2015, 118, .	1.1	45
34	Temperatureâ€dependent currentâ€voltage and lightsoaking measurements on Cu(In,Ga)Se₂ solar cells with ALDâ€Zn_{1â€x}Mg_xO buffer layers. Progress in Photovoltaics: Research and Applications, 2009, 17, 460-469.	4.4	44
35	Annealing behavior of reactively sputtered precursor films for Cu2ZnSnS4 solar cells. Thin Solid Films, 2013, 535, 22-26.	0.8	43
36	Transparent yttrium hydride thin films prepared by reactive sputtering. Journal of Alloys and Compounds, 2011, 509, S812-S816.	2.8	41

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37	Investigation of the SnS/Cu₂ZnSnS₄ Interfaces in Kesterite Thin-Film Solar Cells. ACS Energy Letters, 2017, 2, 976-981.	8.8	40
38	Evolution of Cu₂ZnSnS₄ during Non-Equilibrium Annealing with Quasi-in Situ Monitoring of Sulfur Partial Pressure. Chemistry of Materials, 2017, 29, 3713-3722.	3.2	40
39	Determination of dominant recombination paths in Cu(In,Ga)Se2 thin-film solar cells with ALDâ€“ZnO buffer layers. Thin Solid Films, 2005, 480-481, 208-212.	0.8	39
40	Experimental investigation of Cu(In1âˆ’x,Gax)Se2/Zn(O1âˆ’z,Sz) solar cell performance. Solar Energy Materials and Solar Cells, 2011, 95, 497-503.	3.0	39
41	Secondary compound formation revealed by transmission electron microscopy at the Cu2ZnSnS4/Mo interface. Thin Solid Films, 2013, 535, 31-34.	0.8	38
42	Influence of the Cu₂ZnSnS₄ absorber thickness on thin film solar cells. Physica Status Solidi (A) Applications and Materials Science, 2015, 212, 2889-2896.	0.8	37
43	The effect of Zn_{<i>1â€x</i>}Mg_{<i>x</i>}O buffer layer deposition temperature on Cu(In,Ga)Se₂ solar cells: A study of the buffer/absorber interface. Progress in Photovoltaics: Research and Applications, 2009, 17, 115-125.	4.4	36
44	Optical properties of reactively sputtered Cu2ZnSnS4 solar absorbers determined by spectroscopic ellipsometry and spectrophotometry. Solar Energy Materials and Solar Cells, 2016, 149, 170-178.	3.0	35
45	The effect of stoichiometry on Cu-Zn ordering kinetics in Cu2ZnSnS4 thin films. Journal of Applied Physics, 2018, 123, .	1.1	35
46	Surface modification through air annealing Cu2ZnSn(S,Se)4 absorbers. Thin Solid Films, 2017, 633, 118-121.	0.8	31
47	Evolution of Naâ€”S(â€”O) Compounds on the Cu₂ZnSnS₄ Absorber Surface and Their Effects on CdS Thin Film Growth. ACS Applied Materials & Interfaces, 2016, 8, 18600-18607.	4.0	30
48	Thermodynamic stability, phase separation and Ag grading in (Ag,Cu)(In,Ga)Se₂ solar absorbers. Journal of Materials Chemistry A, 2020, 8, 8740-8751.	5.2	29
49	Absorption Coefficient of a Semiconductor Thin Film from Photoluminescence. Physical Review Applied, 2018, 9, .	1.5	28
50	Influence of hydrogen sulfide annealing on copperâ€“zincâ€“tinâ€“sulfide solar cells sputtered from a quaternary compound target. Thin Solid Films, 2015, 582, 233-238.	0.8	27
51	Band Tails and Cuâ€“Zn Disorder in Cu₂ZnSnS₄ Solar Cells. ACS Applied Energy Materials, 2020, 3, 7520-7526.	2.5	26
52	Structural and Electronic Properties of Cu₂MnSnS₄ from Experiment and Firstâ€Principles Calculations. Physica Status Solidi (B): Basic Research, 2019, 256, 1800743.	0.7	25
53	CuGaSe2 solar cells using atomic layer deposited Zn(O,S) and (Zn,Mg)O buffer layers. Thin Solid Films, 2009, 517, 2305-2308.	0.8	24
54	Improved fill factor and open circuit voltage by crystalline selenium at the Cu(In,Ga)Se₂/buffer layer interface in thin film solar cells. Progress in Photovoltaics: Research and Applications, 2010, 18, 249-256.	4.4	24

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55	Investigation of AgGaSe₂ as a Wide Gap Solar Cell Absorber. ACS Applied Energy Materials, 2021, 4, 1805-1814.	2.5	24
56	Cu out-diffusion in kesteritesâ€”A transmission electron microscopy specimen preparation artifact. Applied Physics Letters, 2013, 102, .	1.5	22
57	Investigation of blister formation in sputtered Cu2ZnSnS4 absorbers for thin film solar cells. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2015, 33, 061201.	0.9	22
58	Kesterite compound semiconductors for thin film solar cells. Current Opinion in Green and Sustainable Chemistry, 2017, 4, 84-90.	3.2	22
59	Sulfurization of Co-Evaporated Cu(In,Ga)Se₂ as a Postdeposition Treatment. IEEE Journal of Photovoltaics, 2018, 8, 604-610.	1.5	21
60	Strong Interplay between Sodium and Oxygen in Kesterite Absorbers: Complex Formation, Incorporation, and Tailoring Depth Distributions. Advanced Energy Materials, 2019, 9, 1900740.	10.2	20
61	Surface oxide on thin films of yttrium hydride studied by neutron reflectometry. Applied Physics Letters, 2012, 100, .	1.5	19
62	Photoluminescence investigation of Cu 2 ZnSnS 4 thin film solar cells. Thin Solid Films, 2015, 582, 146-150.	0.8	19
63	Reactively sputtered films in the Cu x Sâ€"ZnSâ€"SnS y system: From metastability to equilibrium. Thin Solid Films, 2015, 582, 208-214.	0.8	17
64	Germanium Incorporation in Cu₂ZnSnS₄ and Formation of a Snâ€"Ge Gradient. Physica Status Solidi (A) Applications and Materials Science, 2019, 216, 1900492.	0.8	17
65	Optical properties of Cu2ZnSn(SxSe1-x)4 solar absorbers: Spectroscopic ellipsometry and <i>ab initio</i> calculations. Applied Physics Letters, 2017, 110, .	1.5	16
66	Cu2ZnSn(S,Se)4 from annealing of compound co-sputtered precursors â€" Recent results and open questions. Solar Energy, 2018, 175, 84-93.	2.9	16
67	Electrical modeling of Cu(In,Ga)Se2cells with ALD-Zn1âˆ’xMgxO buffer layers. Journal of Applied Physics, 2012, 111, 014509.	1.1	15
68	Characterization of TiN back contact interlayers with varied thickness for Cu 2 ZnSn(S,Se) 4 thin film solar cells. Thin Solid Films, 2017, 639, 91-97.	0.8	15
69	Heavy Alkali Treatment of Postâ€Sulfurized Cu(In,Ga)Se₂ Layers: Effect on Absorber Properties and Solar Cell Performance. Solar Rrl, 2020, 4, 2000248.	3.1	15
70	Prospects for defect engineering in Cu₂ZnSnS₄ solar absorber films. Journal of Materials Chemistry A, 2020, 8, 15864-15874.	5.2	15
71	Practical limitations to selenium annealing of compound co-sputtered Cu 2 ZnSnS 4 as a route to achieving sulfur-selenium graded solar cell absorbers. Thin Solid Films, 2017, 623, 110-115.	0.8	14
72	Diffusion of Fe and Na in co-evaporated Cu(In,Ga)Se2 devices on steel substrates. Thin Solid Films, 2013, 535, 188-192.	0.8	13

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73	TiN Interlayers with Varied Thickness in Cu₂ZnSnS(e)₄ Thin Film Solar Cells: Effect on Na Diffusion, Back Contact Stability, and Performance. Physica Status Solidi (A) Applications and Materials Science, 2018, 215, 1800491.	0.8	13
74	MgyNi1âˆ’y(Hx) thin films deposited by magnetron co-sputtering. Journal of Alloys and Compounds, 2012, 527, 76-83.	2.8	12
75	Extreme radiation hard thin film CZTSSe solar cell. Solar Energy Materials and Solar Cells, 2018, 185, 16-20.	3.0	12
76	Microstructural Characterization of Sulfurization Effects in Cu(In,Ga)Se₂ Thin Film Solar Cells. Microscopy and Microanalysis, 2019, 25, 532-538.	0.2	12
77	Growth and characterization of ZnO-based buffer layers for CIGS solar cells. Proceedings of SPIE, 2010, , .	0.8	11
78	Potential of CuS cap to prevent decomposition of Cu₂ZnSnS₄ during annealing. Physica Status Solidi (A) Applications and Materials Science, 2015, 212, 2843-2849.	0.8	11
79	Ga-grading and Solar Cell Capacitance Simulation of an industrial Cu(In,Ga)Se2 solar cell produced by an in-line vacuum, all-sputtering process. Thin Solid Films, 2017, 636, 367-374.	0.8	11
80	Effect of Cu Content on Postâ€Sulfurization of Cu(In,Ga)Se 2 Films and Corresponding Solar Cell Performance. Physica Status Solidi (A) Applications and Materials Science, 2019, 216, 1900472.	0.8	11
81	Deposition of magnesium hydride thin films using radio frequency reactive sputtering. Thin Solid Films, 2011, 519, 5949-5954.	0.8	10
82	Passivation of CdS/Cu₂ZnSnS₄ Interface from Surface Treatments of Kesteriteâ€Based Thinâ€Film Solar Cells. Physica Status Solidi (B): Basic Research, 2020, 257, 2000308.	0.7	9
83	Comparison of ZnS-based Buffer Layers by Chemical Bath Deposition and Atomic Layer Deposition. Materials Research Society Symposia Proceedings, 2009, 1165, 1.	0.1	8
84	Bandgap engineered Cu2ZnGexSn1âˆ’xS4 solar cells using an adhesive TiN back contact layer. Journal of Alloys and Compounds, 2021, 880, 160478.	2.8	8
85	Experimental and Theoretical Study of Stable and Metastable Phases in Sputtered CuInS₂. Advanced Science, 2022, 9, .	5.6	8
86	Measurements of photo-induced changes in the conduction properties of ALD-Zn_{1-<i>x</i>}Mg_{<i>x</i>}O thin films. Physica Scripta, 2010, T141, 014010.	1.2	7
87	Reactive sputtering of Cu2ZnSnS4 thin films â€” Target effects on the deposition process stability. Surface and Coatings Technology, 2014, 240, 281-285.	2.2	6
88	Selenium Inclusion in Cu₂ZnSn(S,Se)₄Solar Cell Absorber Precursors for Optimized Grain Growth. IEEE Journal of Photovoltaics, 2018, 8, 1132-1141.	1.5	6
89	Current-voltage and capacitance study of light-induced metastabilities in CuZnSnSSe thin film solar cells. Journal Physics D: Applied Physics, 2020, 53, 185108.	1.3	6
90	Long term stability and recovery of 3ÂMeV proton irradiated Cu(In,Ga)Se2 and Cu2(Zn,Sn)(S,Se)4 thin film solar cells. Thin Solid Films, 2022, 741, 139023.	0.8	6

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91	Record 1.1â€‰V Openâ€Circuit Voltage for Cu₂ZnGeS₄â€Based Thinâ€Film Solar Cells Using Atomic Layer Deposition Zn_{1â€<i>x</i>}Sn_{<i>x</i>}O_{<i>y</i>} Buffer Layers. Solar Rrl, 2022, 6, 2100837.	3.1	6
92	Surface/Interface Effects by Alkali Postdeposition Treatments of (Ag,Cu)(In,Ga)Se₂ Thin Film Solar Cells. ACS Applied Energy Materials, 2022, 5, 461-468.	2.5	6
93	Band gap engineering of ZnO for high efficiency CIGS based solar cells. Proceedings of SPIE, 2010, , .	0.8	5
94	CZTS solar cell device simulations with varying absorber thickness. , 2015, , .		5
95	Photoluminescence studies in epitaxial CZTSe thin films. Journal of Applied Physics, 2016, 120, 125701.	1.1	5
96	Calculation of point defect concentration in Cu2ZnSnS4: Insights into the high-temperature equilibrium and quenching. Journal of Applied Physics, 2017, 122, .	1.1	5
97	Low temperature incorporation of selenium in Cu2ZnSnS4: Diffusion and nucleation. Thin Solid Films, 2018, 665, 159-163.	0.8	5
98	Secondary ion mass spectrometry as a tool to study selenium gradient in Cu ₂ ZnSn(S,Se) ₄. Physica Status Solidi C: Current Topics in Solid State Physics, 2017, 14, 1600187.	0.8	5
99	Dynamic Impurity Redistributions in Kesterite Absorbers. Physica Status Solidi (B): Basic Research, 2020, 257, 2000062.	0.7	4
100	Antimonyâ€Doped Tin Oxide as Transparent Back Contact in Cu 2 ZnSnS 4 Thinâ€Film Solar Cells. Physica Status Solidi (A) Applications and Materials Science, 2019, 216, 1900542.	0.8	3
101	Gettering in PolySi/SiO<i>_x</i> Passivating Contacts Enables Si-Based Tandem Solar Cells with High Thermal and Contamination Resilience. ACS Applied Materials & Interfaces, 2022, 14, 14342-14358.	4.0	3
102	Rear surface optimization of CZTS solar cells by use of a passivation layer with nano-sized point openings. , 2015, , .		2
103	On the Extraction of Doping Concentration From Capacitanceâ€“Voltage: A Cu2ZnSnS4 and ZnS Sandwich Structure. IEEE Journal of Photovoltaics, 2017, 7, 1421-1425.	1.5	2
104	Effects of CuIn0,5Ga0,5Se2 growth by isothermal and bithermal Cu-Poor/Rich/Poor sequence on solar cells properties. Materials Research Society Symposia Proceedings, 2009, 1165, 1.	0.1	1
105	Reactive Sputtering of Magnesium Hydride Thin Films for Photovoltaic Applications. Materials Research Society Symposia Proceedings, 2009, 1210, 1.	0.1	1
106	Ion-beam based characterization of TiN back contact interlayers for CZTS(e) thin film solar cells. Nuclear Instruments & Methods in Physics Research B, 2019, 450, 262-266.	0.6	1
107	Postdeposition Sulfurization of CuInSe 2 Solar Absorbers by Employing Sacrificial CuInS 2 Precursor Layers. Physica Status Solidi (A) Applications and Materials Science, 0, , 2100441.	0.8	1
108	Uniformity assessment of a 6-inch copper-zinc-tin-sulfide solar cell sputtered from a quaternary compound target. , 2015, , .		0

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109	Evolution of Na-S(-O) compounds on Cu<inf>2</inf>ZnSnS<inf>4</inf> absorber surface and its effect on CdS growth. , 2016, , .		0
110	Mixed sulfur and selenium annealing study of compound-sputtered bilayer CU2ZnSnS4 / Cu2ZnSnSe4 precursors. , 2017, , .		0
111	Heavy alkali treatment of postâ€sulfurized Cu(In,Ga)Se₂ layers: Effect on absorber properties and solar cell performance. Solar Rrl, 2021, 5, 2100369.	3.1	0