Charles J Hages

List of Publications by Year
in descending order

47 papers	3,228 citations	279487 23 h-index	377514 34 g-index
49 all docs	49 docs citations	49 times ranked	3898 citing authors

#	Article	IF	Citations
1	Visualization and suppression of interfacial recombination for high-efficiency large-area pin perovskite solar cells. Nature Energy, 2018, 3, 847-854.	19.8	721
2	Conformal monolayer contacts with lossless interfaces for perovskite single junction and monolithic tandem solar cells. Energy and Environmental Science, 2019, 12, 3356-3369.	15.6	519
3	9.0% efficient Cu₂ZnSn(S,Se)₄ solar cells from selenized nanoparticle inks. Progress in Photovoltaics: Research and Applications, 2015, 23, 654-659.	4.4	205
4	Enhancing the performance of CZTSSe solar cells with Ge alloying. Solar Energy Materials and Solar Cells, 2012, 105, 132-136.	3.0	188
5	Improved performance of Geâ€alloyed CZTGeSSe thinâ€film solar cells through control of elemental losses. Progress in Photovoltaics: Research and Applications, 2015, 23, 376-384.	4.4	186
6	Optoelectronic and material properties of nanocrystal-based CZTSe absorbers with Ag-alloying. Solar Energy Materials and Solar Cells, 2016, 145, 342-348.	3.0	119
7	Synergistic Effects of Double Cation Substitution in Solutionâ€Processed CZTS Solar Cells with over 10% Efficiency. Advanced Energy Materials, 2018, 8, 1802540.	10.2	113
8	Low Temperature Synthesis of Stable Î³â€CsPbI₃ Perovskite Layers for Solar Cells Obtained by High Throughput Experimentation. Advanced Energy Materials, 2019, 9, 1900555.	10.2	108
9	Identifying the Real Minority Carrier Lifetime in Nonideal Semiconductors: A Case Study of Kesterite Materials. Advanced Energy Materials, 2017, 7, 1700167.	10.2	106
10	Synthesis and characterization of 15% efficient CIGSSe solar cells from nanoparticle inks. Progress in Photovoltaics: Research and Applications, 2015, 23, 1550-1556.	4.4	105
11	Highâ€Efficiency (Li<i>_x</i>Cu_{1âˆ’}<i>_x</i>)₂ZnSn(S,Se)₄ Kesterite Solar Cells with Lithium Alloying. Advanced Energy Materials, 2018, 8, 1801191.	10.2	87
12	Generalized quantum efficiency analysis for non-ideal solar cells: Case of Cu2ZnSnSe4. Journal of Applied Physics, 2016, 119, .	1.1	78
13	Controlled Grain Growth for High Performance Nanoparticle-Based Kesterite Solar Cells. Chemistry of Materials, 2016, 28, 7703-7714.	3.2	78
14	Generalized current-voltage analysis and efficiency limitations in non-ideal solar cells: Case of Cu2ZnSn(SxSe1âˆ’x)4 and Cu2Zn(SnyGe1âˆ’y)(SxSe1âˆ’x)4. Journal of Applied Physics, 2014, 115, .	1.1	65
15	Suppressed Deep Traps and Bandgap Fluctuations in Cu₂CdSnS₄ Solar Cells with â‰ˆ8% Efficiency. Advanced Energy Materials, 2019, 9, 1902509.	10.2	65
16	Chemistry and Dynamics of Ge in Kesterite: Toward Band-Gap-Graded Absorbers. Chemistry of Materials, 2017, 29, 9399-9406.	3.2	59
17	Kesterite Cu₂ZnSn(S,Se)₄ Absorbers Converted from Metastable, Wurtzite-Derived Cu₂ZnSnS₄ Nanoparticles. Chemistry of Materials, 2014, 26, 3530-3534.	3.2	53
18	The electrical and optical properties of kesterites. JPhys Energy, 2019, 1, 044002.	2.3	43

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19	The importance of band tail recombination on current collection and open-circuit voltage in CZTSSe solar cells. Applied Physics Letters, 2016, 109, 021102.	1.5	37
20	Cu2ZnSn(S,Se)4 solar cells from inks of heterogeneous Cuâ€"Znâ€"Snâ€"S nanocrystals. Solar Energy Materials and Solar Cells, 2014, 123, 189-196.	3.0	34
21	Time resolved photoluminescence on Cu(In, Ga)Se2 absorbers: Distinguishing degradation and trap states. Applied Physics Letters, 2017, 110, .	1.5	32
22	Minority and Majority Charge Carrier Mobility in Cu2ZnSnSe4 revealed by Terahertz Spectroscopy. Scientific Reports, 2018, 8, 14476.	1.6	31
23	Inhomogeneities in Cu(In,Ga)Se₂ Thin Films for Solar Cells: Bandâ€Gap Versus Potential Fluctuations. Solar Rrl, 2018, 2, 1700199.	3.1	25
24	The role of interparticle heterogeneities in the selenization pathway of Cuâ€"Znâ€"Snâ€"S nanoparticle thin films: a real-time study. Journal of Materials Chemistry C, 2015, 3, 7128-7134.	2.7	21
25	Synthesis of (CuInS2)0.5(ZnS)0.5 Alloy Nanocrystals and Their Use for the Fabrication of Solar Cells via Selenization. Chemistry of Materials, 2014, 26, 4060-4063.	3.2	17
26	Metastable defect response in CZTSSe from admittance spectroscopy. Applied Physics Letters, 2017, 111, 142105.	1.5	15
27	Deconvoluting Energy Transport Mechanisms in Metal Halide Perovskites Using CsPbBr 3 Nanowires as a Model System. Advanced Functional Materials, 2021, 31, 2010704.	7.8	12
28	Effect of Ag incorporation on structure and optoelectronic properties of (Ag1â^'xCux)2ZnSnSe4 solid solutions. Physical Review Materials, 2020, 4, .	0.9	12
29	Advanced characterization and in-situ growth monitoring of Cu(In,Ga)Se2 thin films and solar cells. Solar Energy, 2018, 170, 102-112.	2.9	11
30	Relating Carrier Dynamics and Photovoltaic Device Performance of Single-Crystalline <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline" overflow="scroll"><mml:msub><mml:mi>Cu</mml:mi><mml:mn>2</mml:mn></mml:msub><mml:mi>Zn</mml:mi><mml:mi>Sn</mml: Physical Review Applied, 2019, 11, .	1.5	11
31	Evaluation of recombination losses in thin film solar cells using an LED sun simulator â^' the effect of RbF post-deposition on CIGS solar cells. EPJ Photovoltaics, 2018, 9, 9.	0.8	9
32	Device comparison of champion nanocrystal-ink based CZTSSe and CIGSSe solar cells: Capacitance spectroscopy. , 2013, , .		8
33	High-temperature decomposition of Cu₂BaSnS₄ with Sn loss reveals newly identified compound Cu₂Ba₃Sn₂S₈. Journal of Materials Chemistry A, 2020, 8, 11346-11353.	5.2	8
34	Device limitations and light-soaking effects in CZTSSe and CZTGeSSe. , 2012, , .		6
35	The physics of V<inf>bi</inf>-related IV crossover in thin film solar cells: Applications to ink deposited CZTSSe. , 2013, , .		6
36	Analysis of temperature-dependent current-voltage characteristics for CIGSSe and CZTSSe thin film solar cells from nanocrystal inks. , 2013, , .		6

#	ARTICLE	IF	CITATIONS
37	On the Phase Stability of Chalcogenide Perovskites. Chemistry of Materials, 2022, 34, 6894-6901.	3.2	6
38	Characterization of nanocrystal-ink based CZTSSe and CIGSSe solar cells using voltage-dependent admittance spectroscopy. , 2014, , .		4
39	Atomic Scale Structure of (Ag,Cu)2ZnSnSe4 and Cu2Zn(Sn,Ge)Se4 Kesterite Thin Films. Frontiers in Energy Research, 2021, 9, .	1.2	4
40	High efficiency Cu<inf>2</inf>ZnSnS<inf>4</inf> nanocrystal ink solar cells through improved nanoparticle synthesis and selenization. , 2013, , .		2
41	The potential of nanoparticle ink-based processing for Chalcogenide photovoltaics. , 2014, , .		2
42	Current-voltage analysis of band tail effects in CZTSSe through numerical simulation. , 2015, , .		2
43	Influence of Ge doping on defect distributions of Cu<inf>2</inf>Zn(Sn<inf>x</inf> Ge<inf>1−x</inf>)(S<inf>y</inf> Se<inf>1−y</inf>) fabricated by nanocrystal ink deposition with selenization. , 2012, , .		1
44	Admittance spectroscopy in CZTSSe: Metastability behavior and voltage dependent defect study. , 2016, , .		1
45	Fluctuations in net doping and lifetime in Cu(In,Ga)Se2 solar cells. , 2018, , .		1
46	Modulation spectroscopy characterization of Cu based chalcopyrites and kesterites. , 2018, , .		0
47	Interplay between Composition, Structural Transitions and Optoelectronic Properties in Fully Inorganic CsPbI3 Perovskites. , 0, , .		0