Hiroki Sugimoto

List of Publications by Year
in descending order

Source: https://exaly.com/author-pdf/881024/publications.pdf

Version: 2024-02-01

67	3,182	279798 23	214800 47
papers	citations	h-index	g-index

67	67	67	2469
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Cd-Free Cu(In,Ga)(Se,S)₂ Thin-Film Solar Cell With Record Efficiency of 23.35%. IEEE Journal of Photovoltaics, 2019, 9, 1863-1867.	2.5	922
2	High Efficiency Cu₂ZnSn(S,Se)₄ Solar Cells by Applying a Double In₂S₃/CdS Emitter. Advanced Materials, 2014, 26, 7427-7431.	21.0	400
3	Record Efficiency for Thin-Film Polycrystalline Solar Cells Up to 22.9% Achieved by Cs-Treated Cu(In,Ga)(Se,S)₂. IEEE Journal of Photovoltaics, 2019, 9, 325-330.	2.5	265
4	Cd-free buffer layer materials on Cu2ZnSn(SxSe1â^'x)4: Band alignments with ZnO, ZnS, and In2S3. Applied Physics Letters, 2012, 100, .	3.3	178
5	New world record Cu(In, Ga)(Se, S)<inf>2</inf> thin film solar cell efficiency beyond 22%. , 2016, , .		132
6	Enhanced Efficiency of Cd-Free Cu(In,Ga)(Se,S)2 Minimodule Via (Zn,Mg)O Second Buffer Layer and Alkali Metal Post-Treatment. IEEE Journal of Photovoltaics, 2017, 7, 1773-1780.	2.5	98
7	New World-Record Efficiency for Pure-Sulfide Cu(In,Ga)S₂Thin-Film Solar Cell With Cd-Free Buffer Layer via KCN-Free Process. IEEE Journal of Photovoltaics, 2016, 6, 760-763.	2.5	90
8	From 20.9 to 22.3% Cu(In,Ga)(S,Se)₂solar cell: Reduced recombination rate at the heterojunction and the depletion region due to K-treatment. Japanese Journal of Applied Physics, 2017, 56, 08MC03.	1.5	71
9	Impacts of surface sulfurization on Cu(In_{1â^'x},Ga_x)Se₂ thinâ€film solar cells. Progress in Photovoltaics: Research and Applications, 2015, 23, 1367-1374.	8.1	53
10	Analysis of Intra-Grain Defects in Multicrystalline Silicon Wafers by Photoluminescence Mapping and Spectroscopy. Japanese Journal of Applied Physics, 2006, 45, L641-L643.	1.5	43
11	A comparative study of Cdâ€•and Znâ€•compound buffer layers on Cu(In 1â^' x ,Ga x)(S y ,Se 1â^' y) 2 thin film solar cells. Progress in Photovoltaics: Research and Applications, 2016, 24, 389-396.	8.1	42
12	High efficiency and large volume production of CIS-based modules. , 2014, , .		41
13	Thin-film Cu(In,Ga)(Se,S)₂ -based solar cell with (Cd,Zn)S buffer layer and Zn_{1â^'x} Mg_x O window layer. Progress in Photovoltaics: Research and Applications, 2017, 25, 431-440.	8.1	41
14	Aluminumâ€doped Zn_{1Ââ^'Âx}Mg_xO as transparent conductive oxide of Cu(In,Ga)(S,Se)₂â€based solar cell for minimizing surface carrier recombination. Progress in Photovoltaics: Research and Applications, 2017, 25, 996-1004.	8.1	39
15	High voltage Cu<inf>2</inf>ZnSnS<inf>4</inf> submodules by hybrid buffer layer. , 2013, , .		38
16	20% Efficient Zn_{0.9}Mg_{0.1}O:Al/Zn_{0.8}Mg_{0.2}O/Cu(In,Ga)(S,Se)₂ Solar Cell Prepared by All-Dry Process through a Combination of Heat-Light-Soaking and Light-Soaking Processes. ACS Applied Materials & Interfaces, 2018, 10, 11361-11368.	8.0	38
17	Recent R&D progress in solar frontier's small-sized Cu(InGa)(SeS)<inf>2</inf> solar cells. , 2014, , .		34
18	Impact of annealing treatment before buffer layer deposition on Cu 2 ZnSn(S,Se) 4 solar cells. Thin Solid Films, 2015, 582, 151-153.	1.8	33

#	Article	IF	Citations
19	Investigation of correlation between open-circuit voltage deficit and carrier recombination rates in Cu(In,Ga)(S,Se)2-based thin-film solar cells. Applied Physics Letters, 2018, 112, 151601.	3.3	32
20	Characterization of electronic structure of Cu2ZnSn(S Se1â^')4 absorber layer and CdS/Cu2ZnSn(S) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 5 2015, 582, 166-170.	1.8	31
21	Heterointerface recombination of Cu(In,Ga)(S,Se)₂â€based solar cells with different buffer layers. Progress in Photovoltaics: Research and Applications, 2018, 26, 127-134.	8.1	31
22	High-Efficiency Devices With Pure Solution-Processed Cu$_{f 2}$ ZnSn(S,Se)$_{f 4}$ Absorbers. IEEE Journal of Photovoltaics, 2014, 4, 483-485.	2.5	29
23	Photoluminescence Imaging of Multicrystalline Si Wafers during HF Etching. Japanese Journal of Applied Physics, 2007, 46, L339-L341.	1.5	28
24	Enhancement of photovoltaic performances of Cu (In,Ga)(S,Se)₂ solar cell through combination of heatâ€light soaking and light soaking processes. Progress in Photovoltaics: Research and Applications, 2018, 26, 868-876.	8.1	26
25	Aging Effect of a Cu(In,Ga)(S,Se) 2 Absorber on the Photovoltaic Performance of Its Cdâ€Free Solar Cell Fabricated by an Allâ€Dry Process: Its Carrier Recombination Analysis. Advanced Energy Materials, 2019, 9, 1902869.	19.5	26
26	Perovskite/CIGS Spectral Splitting Double Junction Solar Cell with 28% Power Conversion Efficiency. IScience, 2020, 23, 101817.	4.1	26
27	Lifetime improvement for high efficiency Cu<inf>2</inf>ZnSnS<inf>4</inf> submodules. , 2013, , .		24
28	Sputtered (Zn,Mg)O buffer layer for band offset control in Cu₂ZnSn(S,Se)₄ solar cells. Japanese Journal of Applied Physics, 2014, 53, 106502.	1.5	24
29	Characteristics of Zn1â^'xMgxO:B and its application as transparent conductive oxide layer in Cu(In,Ga)(S,Se)2 solar cells with and without CdS buffer layer. Solar Energy, 2019, 184, 553-560.	6.1	24
30	Determination of deep-level defects in Cu2ZnSn(S,Se)4 thin-films using photocapacitance method. Applied Physics Letters, 2015, 106, .	3.3	20
31	Progress Toward 1000-mV Open-Circuit Voltage on Chalcopyrite Solar Cells. IEEE Journal of Photovoltaics, 2016, 6, 1630-1634.	2.5	20
32	Application of multi-buffer layer of (Zn,Mg)O/CdS in Cu2ZnSn(S,Se)4 solar cells. Current Applied Physics, 2015, 15, 383-388.	2.4	18
33	960-mV Open-Circuit Voltage Chalcopyrite Solar Cell. IEEE Journal of Photovoltaics, 2016, 6, 309-312.	2.5	18
34	Characterization of Cd-Free Zn_{1â€“x}Mg_xO:Al/Zn_{1â€“x}Mg_xO/Cu(In,Ga)(S,Se)<sub> Solar Cells Fabricated by an All Dry Process Using Ultraviolet Light Excited Time-Resolved Photoluminescence. ACS Applied Materials & Interfaces, 2019, 11, 7539-7545.	8.0	18
35	22%â€efficient Cdâ€free Cu(In,Ga)(S,Se)₂ solar cell by allâ€dry process using Zn_{0.8}Mg_{0.2}O and Zn_{0.9}Mg_{0.1}O:B as buffer and transparent conductive oxide layers. Progress in Photovoltaics: Research and Applications, 2020, 28, 79-89.	8.1	17
36	Transparent Electrode and Buffer Layer Combination for Reducing Carrier Recombination and Optical Loss Realizing over a 22%-Efficient Cd-Free Alkaline-Treated Cu(In,Ga)(S,Se)2 Solar Cell by the All-Dry Process. ACS Applied Materials & Interfaces, 2020, 12, 22298-22307.	8.0	17

#	Article	IF	Citations
37	Improvement of Cu₂ZnSn(S,Se)₄ solar cell efficiency by surface treatment. Physica Status Solidi C: Current Topics in Solid State Physics, 2015, 12, 704-707.	0.8	15
38	Efficiency improvement of Cu<inf>2</inf>ZnSn(S,Se)<inf>4</inf> submodule with graded bandgap and reduced backside ZnS segregation. , 2014, , .		14
39	Time-resolved photoluminescence of Cu(In,Ga)(Se,S) 2 thin films and temperature dependent current density-voltage characteristics of their solar cells on surface treatment effect. Current Applied Physics, 2017, 17, 461-466.	2.4	14
40	Structures of Cu(In,Ga)(S,Se)₂ solar cells for minimizing openâ€circuit voltage deficit: Investigation of carrier recombination rates. Progress in Photovoltaics: Research and Applications, 2019, 27, 630-639.	8.1	13
41	Development of Cd-free buffer layer for Cu<inf>2</inf>ZnSnS<inf>4</inf> thin-film solar cells. , 2011, , .		12
42	Annealing effect on Cu₂ZnSn(S,Se)₄ solar cell with Zn_{1â€“x}Mg_xO buffer layer. Physica Status Solidi (A) Applications and Materials Science, 2015, 212, 2766-2771.	1.8	12
43	Effect of Alkali Treatment on Photovoltaic Performances of Cu(In,Ga)(S,Se)₂ Solar Cells and Their Absorber Quality Analyzed by Urbach Energy and Carrier Recombination Rates. ACS Applied Energy Materials, 2020, 3, 1292-1297.	5.1	12
44	Over 8% efficiency Cu<inf>2</inf>ZnSnS<inf>4</inf> submodules with ultra-thin absorber. , 2012, , .		10
45	A comparative study on charge carrier recombination across the junction region of Cu2ZnSn(S,Se)4 and Cu(In,Ga)Se2 thin film solar cells. AIP Advances, 2016, 6, .	1.3	10
46	Electronic structure of Cu₂ZnSn(S_xSe_{1â^’x})₄ surface and CdS/Cu₂ZnSn(S_xSe_{1â^’x})₄ interface. Physica Status Solidi C: Current Topics in Solid State Physics, 2017, 14, .	0.8	9
47	Development of high efficiency Cu<inf>2</inf>ZnSnS<inf>4</inf> submodule with Cd-free buffer layer. , 2012, , .		8
48	Over 12% efficiency Cu<inf>2</inf>ZnSn(SeS)<inf>4</inf> solar cell via hybrid buffer layer. , 2014, , .		8
49	Interfacial modification mechanism by aging effect for high-performance Cd-free and all-dry process Cu(In,Ga)(S,Se)2 solar cells. Applied Physics Letters, 2020, 117, .	3.3	8
50	Evaluation of sputtering damage in Cu₂ZnSn(S,Se)₄solar cells with CdS and (Cd,Zn)S buffer layers by photoluminescence measurement. Japanese Journal of Applied Physics, 2015, 54, 042302.	1.5	7
51	Impact of buffer layer on kesterite solar cells. , 2015, , .		6
52	Influence of potassium treatment on electronic properties of Cu(In_{1â^’} _x) Tj ETQq0 0 0 rgBT /Overlock 10 T Japanese Journal of Applied Physics, 2018, 57, 08RC13.	1.5	6
53	Defect Analysis in Solar Cell Silicon by Photoluminescence Spectroscopy and Topography. ECS Transactions, 2009, 25, 3-10.	0.5	5
54	Wavelength-dependent Jâ€“V characteristics of CuIn1-x Ga x (S,Se)2 solar cells and carrier recombination. Applied Physics Express, 2019, 12, 061001.	2.4	5

#	Article	IF	Citations
55	Current status at solar frontier: From fundamental research to industrial mass production of Cd-free Cu(In,Ga)(Se,S)2 solar cell. , 2015, , .		4
56	Study of time-resolved photoluminescence in Cu₂ZnSn(S,Se)₄thin films with different Cu/Sn ratio. Japanese Journal of Applied Physics, 2015, 54, 08KC15.	1.5	4
57	CdS and Cd-Free Buffer Layers on Solution Phase Grown Cu2ZnSn(SxSe1- x)4 :Band Alignments and Electronic Structure Determined with Femtosecond Ultraviolet Photoelectron Spectroscopy. Materials Research Society Symposia Proceedings, 2014, 1638, 1.	0.1	3
58	Cd-free 5×5cm²-sized Cu<inf>2</inf>ZnSnS<inf>4</inf> submodules. , 2011, , .		2
59	Study of recombination process in Cu<inf>2</inf>ZnSnS<inf>4</inf> thin film using two-wavelength excited photoluminescence. , 2014, , .		2
60	960mV open circuit voltage chalcopyrite solar cell. , 2015, , .		2
61	Study of Cu2ZnSn(S,Se)4Thin Films for Solar Cell Application. Journal of Physics: Conference Series, 2015, 596, 012019.	0.4	2
62	Defect study of Cu<inf>2</inf>ZnSn(S,Se)<inf>4</inf> thin film with different Cu/Sn ratio by admittance spectroscopy. , 2014, , .		1
63	Effect of ammonia etching on structural and electrical properties of Cu2ZnSn(S,Se)4 absorbers. Applied Surface Science, 2015, 353, 209-213.	6.1	1
64	Change of the Characterization Techniques as Progress of CuInSe₂-Based Thin-Film PV Technology. Materials Science Forum, 0, 725, 165-170.	0.3	0
65	Evaluation of â€œrolloverâ€•in Cu(In,Ga)(Se,S)₂thin film solar cells using Suns-V_{Î±}measurements. , 2015, , .		0
66	Photocarrier recombination dynamics in Cu2ZnSn(S,Se)4 and Cu(In,Ga)Se2 studied by temperature-dependent time resolved Photoluminescence (TR-PL). , 2015, , .		0
67	Notice of Removal Progress toward 1000mV open-circuit voltage on chalcopyrite solar cell. , 2017, , .		0