Martin C Schubert

List of Publications by Year
in descending order

Source: https://exaly.com/author-pdf/3423838/publications.pdf

Version: 2024-02-01

96	2,554	172457	206112
papers	citations	29 h-index	48 g-index

97	97	97	2479
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Carrier Lifetime Limitation of Industrial Ga-Doped Cz-Grown Silicon After Different Solar Cell Process Flows. IEEE Journal of Photovoltaics, 2022, 12, 238-243.	2.5	7
2	The potential of cast silicon. Solar Energy Materials and Solar Cells, 2021, 219, 110789.	6.2	16
3	Breakdown of temperature sensitivity of silicon solar cells by simulation input parameters. Solar Energy Materials and Solar Cells, 2021, 219, 110836.	6.2	1
4	Experimental and Theoretical Study of Oxygen Precipitation and the Resulting Limitation of Silicon Solar Cell Wafers. IEEE Journal of Photovoltaics, 2021, 11, 289-297.	2.5	2
5	Galliumâ€Doped Silicon for Highâ€Efficiency Commercial Passivated Emitter and Rear Solar Cells. Solar Rrl, 2021, 5, 2000754.	5.8	39
6	Insights into the Hydrogenâ€Related Mechanism behind Defect Formation during Lightâ€and Elevatedâ€Temperatureâ€Induced Degradation. Physica Status Solidi - Rapid Research Letters, 2021, 15, 2000584.	2.4	11
7	The radiative recombination coefficient of silicon: reassesment of its charge carrier density dependence. , 2021, , .		0
8	Radiative recombination in silicon photovoltaics: Modeling the influence of charge carrier densities and photon recycling. Solar Energy Materials and Solar Cells, 2021, 230, 111198.	6.2	18
9	Extraordinarily High Minority Charge Carrier Lifetime Observed in Crystalline Silicon. Solar Rrl, 2021, 5, 2100605.	5.8	10
10	Temporary Recovery of the Defect Responsible for Light- and Elevated Temperature-Induced Degradation: Insights Into the Physical Mechanisms Behind LeTID. IEEE Journal of Photovoltaics, 2020, 10, 1591-1603.	2.5	23
11	Perovskites fabricated on textured silicon surfaces for tandem solar cells. Communications Chemistry, 2020, 3, .	4.5	31
12	Spatially Resolved Performance Analysis for Perovskite Solar Cells. Advanced Energy Materials, 2020, 10, 1904001.	19.5	30
13	Limiting Defects in nâ€Type Multicrystalline Silicon Solar Cells. Physica Status Solidi (A) Applications and Materials Science, 2019, 216, 1900331.	1.8	1
14	Loss Analysis in Perovskite Photovoltaic Modules. Solar Rrl, 2019, 3, 1900338.	5.8	23
15	Investigation of LeTID where we can control it â€“ Application of FZ silicon for defect studies. AIP Conference Proceedings, 2019, , .	0.4	7
16	Re-evaluation of the SRH-parameters for the FeGa defect. AIP Conference Proceedings, 2019, , .	0.4	4
17	Analysis of temperature dependent surface recombination properties. AIP Conference Proceedings, 2019, , .	0.4	4
18	Edge recombination analysis of silicon solar cells using photoluminescence measurements. AIP Conference Proceedings, 2019, , .	0.4	7

#	Article	IF	Citations
19	Imaging Interstitial Iron Concentrations in Galliumâ€Doped Silicon Wafers. Physica Status Solidi (A) Applications and Materials Science, 2019, 216, 1800655.	1.8	8
20	Prediction of local temperatureâ€dependent performance of silicon solar cells. Progress in Photovoltaics: Research and Applications, 2019, 27, 999-1006.	8.1	11
21	Analysis of Temperature Dependent Characteristics of Diffused Regions in Silicon Solar Cells. , 2019, , .		1
22	Correlation of Defect Luminescence and Recombination in Multicrystalline Silicon. IEEE Journal of Photovoltaics, 2019, 9, 55-63.	2.5	3
23	Quantitative Local Loss Analysis of Blade-Coated Perovskite Solar Cells. IEEE Journal of Photovoltaics, 2019, 9, 452-459.	2.5	8
24	Modeling Edge Recombination in Silicon Solar Cells. IEEE Journal of Photovoltaics, 2018, 8, 428-434.	2.5	39
25	Understanding the lightâ€induced degradation at elevated temperatures: Similarities between multicrystalline and floatzone pâ€type silicon. Progress in Photovoltaics: Research and Applications, 2018, 26, 533-542.	8.1	82
26	Electrical Limitations in Epitaxially Grown Kerfless Silicon Wafers for Solar Cells. , 2018, , .		0
27	Stress Mapping by Confocal Raman Spectroscopy on Solar Cells and Modules. , 2018, , .		1
28	Photoluminescence Imaging at Uniform Excess Carrier Density Using Adaptive Nonuniform Excitation. IEEE Journal of Photovoltaics, 2018, 8, 1787-1792.	2.5	7
29	Lock-in Thermography. Springer Series in Advanced Microelectronics, 2018, , .	0.3	27
30	Moving Beyond p-Type mc-Si: Quantified Measurements of Iron Content and Lifetime of Iron-Rich Precipitates in n-Type Silicon. IEEE Journal of Photovoltaics, 2018, 8, 1525-1530.	2.5	2
31	Adaption of Basic Metalâ€“Insulatorâ€“Semiconductor (MIS) Theory for Passivating Contacts Within Numerical Solar Cell Modeling. IEEE Journal of Photovoltaics, 2018, 8, 1546-1552.	2.5	18
32	The Principle of Adaptive Excitation for Photoluminescence Imaging of Silicon: Theory. Physica Status Solidi - Rapid Research Letters, 2018, 12, 1800137.	2.4	6
33	Towards the efficiency limits of multicrystalline silicon solar cells. Solar Energy Materials and Solar Cells, 2018, 185, 198-204.	6.2	46
34	Cs_xFA_{1â€“x}Pb(I_{1â€“y}Br_y)₃ Perovskite Compositions: the Appearance of Wrinkled Morphology and its Impact on Solar Cell Performance. Journal of Physical Chemistry C, 2018, 122, 17123-17135.	3.1	42
35	Temperature dependent imaging of solar cell losses. AIP Conference Proceedings, 2018, , .	0.4	0
36	Temperature Coefficient Imaging for Silicon Solar Cells. IEEE Journal of Photovoltaics, 2018, 8, 930-936.	2.5	22

#	Article	IF	Citations
37	Separation of the surface and bulk recombination in silicon by means of transient photoluminescence. Applied Physics Letters, 2017, 110, .	3.3	12
38	Nondestructive Probing of Perovskite Silicon Tandem Solar Cells Using Multiwavelength Photoluminescence Mapping. IEEE Journal of Photovoltaics, 2017, 7, 1081-1086.	2.5	24
39	The concept of skins for silicon solar cell modeling. Solar Energy Materials and Solar Cells, 2017, 173, 128-133.	6.2	91
40	How to achieve efficiencies exceeding 22% with multicrystalline n-type silicon solar cells. Energy Procedia, 2017, 124, 777-780.	1.8	12
41	High-Efficiency n-Type HP mc Silicon Solar Cells. IEEE Journal of Photovoltaics, 2017, 7, 1171-1175.	2.5	135
42	Distinguishing crystallization stages and their influence on quantum efficiency during perovskite solar cell formation in real-time. Scientific Reports, 2017, 7, 14899.	3.3	27
43	Optimized multicrystalline silicon for solar cells enabling conversion efficiencies of 22%. Solar Energy Materials and Solar Cells, 2017, 171, 180-186.	6.2	38
44	Long-Term Stability of Aluminum Oxide Based Surface Passivation Schemes Under Illumination at Elevated Temperatures. IEEE Journal of Photovoltaics, 2017, 7, 1197-1202.	2.5	24
45	Material limits of multicrystalline silicon from stateâ€ofâ€theâ€art photoluminescence imaging techniques. Progress in Photovoltaics: Research and Applications, 2017, 25, 499-508.	8.1	10
46	Degradation of Crystalline Silicon Due to Boronâ€“Oxygen Defects. IEEE Journal of Photovoltaics, 2017, 7, 383-398.	2.5	126
47	Superacid-Treated Silicon Surfaces: Extending the Limit of Carrier Lifetime for Photovoltaic Applications. IEEE Journal of Photovoltaics, 2017, 7, 1574-1583.	2.5	40
48	High performance multicrystalline silicon: Grain structure and iron precipitation. Journal of Applied Physics, 2017, 122, 135103.	2.5	7
49	Contact fault characterisation of complex silicon solar cells: a guideline based on current voltage characteristics and luminescence imaging. Progress in Photovoltaics: Research and Applications, 2016, 24, 326-339.	8.1	2
50	UV Degradation and Recovery of Perovskite Solar Cells. Scientific Reports, 2016, 6, 38150.	3.3	269
51	Swirl defect investigation using temperature- and injection-dependent photoluminescence imaging. , 2016, , .		1
52	Impact of the firing temperature profile on light induced degradation of multicrystalline silicon. Physica Status Solidi - Rapid Research Letters, 2016, 10, 861-865.	2.4	96
53	On the implication of spatial carrier density non-uniformity on lifetime determination in silicon. Journal of Applied Physics, 2015, 118, 105706.	2.5	15
54	Building intuition of iron evolution during solar cell processing through analysis of different process models. Applied Physics A: Materials Science and Processing, 2015, 120, 1357-1373.	2.3	25

#	Article	IF	Citations
55	A combined transient and steady state approach for robust lifetime spectroscopy with micrometer resolution. Physica Status Solidi - Rapid Research Letters, 2015, 9, 697-700.	2.4	10
56	Spatially Resolved Impurity Identification via Temperature- and Injection-Dependent Photoluminescence Imaging. IEEE Journal of Photovoltaics, 2015, 5, 1503-1509.	2.5	20
57	Experimental Proof of the Slow Light-Induced Degradation Component in Compensated n-Type Silicon. Solid State Phenomena, 2015, 242, 102-108.	0.3	3
58	Resistivity, Doping Concentrations, and Carrier Mobilities in Compensated n- and p-Type Czochralski Silicon: Comparison of Measurements and Simulations and Consistent Description of Material Parameters. IEEE Journal of Photovoltaics, 2015, 5, 1276-1284.	2.5	2
59	Potential Gain in Multicrystalline Silicon Solar Cell Efficiency by n-Type Doping. IEEE Journal of Photovoltaics, 2015, 5, 499-506.	2.5	29
60	Local Series Resistance Imaging of Silicon Solar Cells With Complex Current Paths. IEEE Journal of Photovoltaics, 2015, 5, 752-758.	2.5	8
61	Microscopic charge carrier lifetime in silicon from a transient approach. Applied Physics Letters, 2015, 107, .	3.3	10
62	High-Efficiency Multicrystalline Silicon Solar Cells: Potential of n-Type Doping. IEEE Journal of Photovoltaics, 2015, 5, 1571-1579.	2.5	24
63	Carrier Recombination at Metallic Precipitates in p-and n-Type Silicon. IEEE Journal of Photovoltaics, 2015, 5, 1285-1292.	2.5	23
64	Efficiency Potential of p- and n-type High Performance Multicrystalline Silicon. Energy Procedia, 2015, 77, 633-638.	1.8	9
65	Sunsâ€PLI as a powerful tool for spatially resolved fill factor analysis of solar cells. Progress in Photovoltaics: Research and Applications, 2014, 22, 581-586.	8.1	25
66	Solar Cell Efficiency Losses Due to Impurities From the Crucible in Multicrystalline Silicon. IEEE Journal of Photovoltaics, 2014, 4, 122-129.	2.5	32
67	Microscopic origin of the aluminium assisted spiking effects in n-type silicon solar cells. Solar Energy Materials and Solar Cells, 2014, 131, 105-109.	6.2	35
68	Towards a unified low-field model for carrier mobilities in crystalline silicon. Solar Energy Materials and Solar Cells, 2014, 131, 92-99.	6.2	46
69	Effective Passivation of Black Silicon Surfaces by Atomic Layer Deposition. IEEE Journal of Photovoltaics, 2013, 3, 90-94.	2.5	109
70	Impact of Impurities From Crucible and Coating on mc-Silicon Qualityâ€"the Example of Iron and Cobalt. IEEE Journal of Photovoltaics, 2013, 3, 1250-1258.	2.5	66
71	Determination of Bulk Lifetime and Surface Recombination Velocity of Silicon Ingots From Dynamic Photoluminescence. IEEE Journal of Photovoltaics, 2013, 3, 1311-1318.	2.5	32
72	Analyses of the Evolution of Iron-Silicide Precipitates in Multicrystalline Silicon During Solar Cell Processing. IEEE Journal of Photovoltaics, 2013, 3, 131-137.	2.5	32

#	Article	IF	Citations
73	Doping Density in Silicon and Solar Cells Analyzed With Micrometer Resolution. IEEE Journal of Photovoltaics, 2013, 3, 341-347.	2.5	13
74	Wafer thickness optimization for silicon solar cells of heterogeneous material quality. Physica Status Solidi - Rapid Research Letters, 2013, 7, 955-958.	2.4	18
75	Excellent Average Diffusion Lengths of 600 Î¼m of N-Type Multicrystalline Silicon Wafers After the Full Solar Cell Process Including Boron Diffusion. Energy Procedia, 2013, 33, 41-49.	1.8	9
76	Efficiency-Limiting Recombination in Multicrystalline Silicon Solar Cells. Solid State Phenomena, 2013, 205-206, 110-117.	0.3	1
77	Modeling majority carrier mobility in compensated crystalline silicon for solar cells. Solar Energy Materials and Solar Cells, 2012, 106, 31-36.	6.2	49
78	Modeling the size distribution of iron silicide precipitates in multicrystalline silicon. , 2012, , .		1
79	Can Luminescence Imaging Replace Lock-in Thermography on Solar Cells?. IEEE Journal of Photovoltaics, 2011, 1, 159-167.	2.5	62
80	Imaging of Metastable Defects in Silicon. IEEE Journal of Photovoltaics, 2011, 1, 168-173.	2.5	50
81	Comprehensive Microscopic Analysis of Laser-Induced High Doping Regions in Silicon. IEEE Transactions on Electron Devices, 2011, 58, 2874-2877.	3.0	18
82	Imaging of Metal Impurities in Silicon by Luminescence Spectroscopy and Synchrotron Techniques. Journal of Electronic Materials, 2010, 39, 787-793.	2.2	9
83	Simultaneous stress and defect luminescence study on silicon. Physica Status Solidi (A) Applications and Materials Science, 2010, 207, 436-441.	1.8	30
84	Quantitative carrier lifetime measurement with micron resolution. Journal of Applied Physics, 2010, 108, 033705.	2.5	54
85	Impact of stress on the recombination at metal precipitates in silicon. Journal of Applied Physics, 2010, 108, .	2.5	19
86	Photoluminescence imaging of chromium in crystalline silicon. , 2010, , .		2
87	Cause of increased currents under reverse-bias conditions of upgraded metallurgical grade multicrystalline silicon solar cells. , 2010, , .		0
88	Recombination activity enhancement by stress in silicon. , 2010, , .		2
89	Influence of heterogeneous profiles in carrier density measurements with respect to iron concentration measurements in silicon. Journal of Applied Physics, 2009, 105, 114903.	2.5	20
90	Quantitative Iron Concentration Imaging. Solid State Phenomena, 2009, 156-158, 407-412.	0.3	1

#	Article	IF	Citations
91	Diode breakdown related to recombination active defects in block-cast multicrystalline silicon solar cells. Journal of Applied Physics, 2009, 106, 063530.	2.5	52
92	Simulation of Iron Distribution after Crystallization of mc Silicon. Solid State Phenomena, 2009, 156-158, 223-228.	0.3	10
93	Microâ€photoluminescence spectroscopy on metal precipitates in silicon. Physica Status Solidi - Rapid Research Letters, 2009, 3, 230-232.	2.4	47
94	X-ray excited optical luminescence from crystalline silicon. Physica Status Solidi - Rapid Research Letters, 2009, 3, 275-277.	2.4	9
95	Observation of metal precipitates at prebreakdown sites in multicrystalline silicon solar cells. Applied Physics Letters, 2009, 95, .	3.3	52
96	Optimization of electron selective layer and perovskite crystallization for efficient outdoor and indoor light harvesting in graphite-based perovskite solar cells. , 0, , .		0