

Antoine Descoeudres

List of Publications by Year in descending order

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63
papers

4,529
citations

136885

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233338

45
g-index

63
all docs

63
docs citations

63
times ranked

3479
citing authors

#	ARTICLE	IF	CITATIONS
1	High-efficiency Silicon Heterojunction Solar Cells: A Review. Green, 2012, 2, 7-24.	0.4	725
2	Current Losses at the Front of Silicon Heterojunction Solar Cells. IEEE Journal of Photovoltaics, 2012, 2, 7-15.	1.5	479
3	Raising the one-sun conversion efficiency of III-V/Si solar cells to 32.8% for two junctions and 35.9% for three junctions. Nature Energy, 2017, 2, .	19.8	424
4	Infrared light management in high-efficiency silicon heterojunction and rear-passivated solar cells. Journal of Applied Physics, 2013, 113, .	1.1	270
5	Improved amorphous/crystalline silicon interface passivation by hydrogen plasma treatment. Applied Physics Letters, 2011, 99, .	1.5	238
6	Damage at hydrogenated amorphous/crystalline silicon interfaces by indium tin oxide overlayer sputtering. Applied Physics Letters, 2012, 101, .	1.5	200
7	>21% Efficient Silicon Heterojunction Solar Cells on n- and p-Type Wafers Compared. IEEE Journal of Photovoltaics, 2013, 3, 83-89.	1.5	187
8	Hydrogen-doped indium oxide/indium tin oxide bilayers for high-efficiency silicon heterojunction solar cells. Solar Energy Materials and Solar Cells, 2013, 115, 151-156.	3.0	153
9	Realization of GaInP/Si Dual-Junction Solar Cells With 29.8% 1-Sun Efficiency. IEEE Journal of Photovoltaics, 2016, 6, 1012-1019.	1.5	114
10	Amorphous silicon oxide window layers for high-efficiency silicon heterojunction solar cells. Journal of Applied Physics, 2014, 115, .	1.1	113
11	Silicon Heterojunction Solar Cells With Copper-Plated Grid Electrodes: Status and Comparison With Silver Thick-Film Techniques. IEEE Journal of Photovoltaics, 2014, 4, 1055-1062.	1.5	96
12	Simple processing of back-contacted silicon heterojunction solar cells using selective-area crystalline growth. Nature Energy, 2017, 2, .	19.8	95
13	Record Infrared Internal Quantum Efficiency in Silicon Heterojunction Solar Cells With Dielectric/Metal Rear Reflectors. IEEE Journal of Photovoltaics, 2013, 3, 1243-1249.	1.5	92
14	The silane depletion fraction as an indicator for the amorphous/crystalline silicon interface passivation quality. Applied Physics Letters, 2010, 97, .	1.5	90
15	Investigation of the dc vacuum breakdown mechanism. Physical Review Special Topics: Accelerators and Beams, 2009, 12, .	1.8	79
16	dc breakdown conditioning and breakdown rate of metals and metallic alloys under ultrahigh vacuum. Physical Review Special Topics: Accelerators and Beams, 2009, 12, .	1.8	76
17	Very fast light-induced degradation of $\text{a-Si:H}/\text{Si}(100)$ interfaces. Physical Review B, 2011, 83, .	1.1	74
18	Back-Contacted Silicon Heterojunction Solar Cells With Efficiency >21%. IEEE Journal of Photovoltaics, 2014, 4, 1046-1054.	1.5	70

#	ARTICLE	IF	CITATIONS
19	Light-induced performance increase of silicon heterojunction solar cells. Applied Physics Letters, 2016, 109, .	1.5	67
20	Increasing the efficiency of silicon heterojunction solar cells and modules by light soaking. Solar Energy Materials and Solar Cells, 2017, 173, 43-49.	3.0	65
21	Time-resolved imaging and spatially-resolved spectroscopy of electrical discharge machining plasma. Journal Physics D: Applied Physics, 2005, 38, 4066-4073.	1.3	56
22	Strategies for Doped Nanocrystalline Silicon Integration in Silicon Heterojunction Solar Cells. IEEE Journal of Photovoltaics, 2016, 6, 1132-1140.	1.5	54
23	Optical emission spectroscopy of electrical discharge machining plasma. Journal Physics D: Applied Physics, 2004, 37, 875-882.	1.3	53
24	ITO/MoOx/a-Si:H(i) Hole-Selective Contacts for Silicon Heterojunction Solar Cells: Degradation Mechanisms and Cell Integration. IEEE Journal of Photovoltaics, 2017, 7, 1584-1590.	1.5	52
25	A One-dimensional Particle-in-Cell Model of Plasma Build-up in Vacuum Arcs. Contributions To Plasma Physics, 2011, 51, 5-21.	0.5	51
26	Back-Contacted Silicon Heterojunction Solar Cells: Optical-Loss Analysis and Mitigation. IEEE Journal of Photovoltaics, 2015, 5, 1293-1303.	1.5	45
27	Manufacturing 100-µm-thick silicon solar cells with efficiencies greater than 20% in a pilot production line. Physica Status Solidi (A) Applications and Materials Science, 2015, 212, 13-24.	0.8	44
28	Low-temperature processes for passivation and metallization of high-efficiency crystalline silicon solar cells. Solar Energy, 2018, 175, 54-59.	2.9	42
29	Mechanism of surface modification in the plasma-surface interaction in electrical arcs. Physical Review B, 2010, 81, .	1.1	38
30	Optical emission spectroscopy of electrical discharge machining plasma. Journal of Materials Processing Technology, 2004, 149, 184-190.	3.1	37
31	Attachment-induced ionization instability in electronegative capacitive RF discharges. Plasma Sources Science and Technology, 2003, 12, 152-157.	1.3	35
32	Time- and spatially-resolved characterization of electrical discharge machining plasma. Plasma Sources Science and Technology, 2008, 17, 024008.	1.3	33
33	Silicon Heterojunction Solar Cells: Towards Low-cost High-Efficiency Industrial Devices and Application to Low-concentration PV. Energy Procedia, 2015, 77, 508-514.	1.8	30
34	Aluminium-Doped Zinc Oxide Rear Reflectors for High-Efficiency Silicon Heterojunction Solar Cells. IEEE Journal of Photovoltaics, 2019, 9, 1217-1224.	1.5	29
35	Amorphous Silicon/Crystalline Silicon Heterojunction Solar Cells. Semiconductors and Semimetals, 2014, , 73-120.	0.4	26
36	Optimization of tunnel-junction IBC solar cells based on a series resistance model. Solar Energy Materials and Solar Cells, 2019, 200, 110036.	3.0	26

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37	Rear-emitter silicon heterojunction solar cells with atomic layer deposited ZnO:Al serving as an alternative transparent conducting oxide to In ₂ O ₃ :Sn. Solar Energy Materials and Solar Cells, 2019, 200, 109953.	3.0	24
38	The versatility of passivating carrier-selective silicon thin films for diverse high-efficiency screen-printed heterojunction-based solar cells. Progress in Photovoltaics: Research and Applications, 2020, 28, 569-577.	4.4	23
39	Asymmetric band offsets in silicon heterojunction solar cells: Impact on device performance. Journal of Applied Physics, 2016, 120, 054501.	1.1	17
40	Demonstrating the high Voc potential of PEDOT:PSS/c-Si heterojunctions on solar cells. Energy Procedia, 2017, 124, 593-597.	1.8	17
41	Interdigitated back contact silicon heterojunction solar cells featuring an interband tunnel junction enabling simplified processing. Solar Energy, 2018, 175, 60-67.	2.9	15
42	Record-Efficiency n-Type and High-Efficiency p-Type Monolike Silicon Heterojunction Solar Cells with a High-Temperature Gettering Process. ACS Applied Energy Materials, 2019, 2, 4900-4906.	2.5	13
43	Advanced silicon thin films for high-efficiency silicon heterojunction-based solar cells. , 2017, , .		9
44	Scanning Laser-Beam-Induced Current Measurements of Lateral Transport Near-Junction Defects in Silicon Heterojunction Solar Cells. IEEE Journal of Photovoltaics, 2014, 4, 154-159.	1.5	7
45	Advanced method for electrical characterization of carrier-selective passivating contacts using transfer-length-method measurements under variable illumination. Journal of Applied Physics, 2021, 129, .	1.1	7
46	Boosting the efficiency of III-V/Si tandem solar cells. , 2016, , .		6
47	Photolithography-free interdigitated back-contacted silicon heterojunction solar cells with efficiency >21%. , 2014, , .		5
48	High-performance hetero-junction crystalline silicon photovoltaic technology. , 2014, , .		5
49	High-efficiency silicon heterojunction solar cells: From physics to production lines. , 2010, , .		4
50	Silicon Heterojunction Solar Cells on Quasi-mono Wafers. , 2018, , .		4
51	A-Si:H/c-Si heterojunctions: a future mainstream technology for high-efficiency crystalline silicon solar cells?. , 2012, , .		3
52	Metal-free crystalline silicon solar cells in module. , 2015, , .		3
53	Mechanically stacked 4-terminal III-V/Si tandem solar cells. , 2017, , .		2
54	Direct Contact to TCO with SmartWire Connection Technology. , 2018, , .		2

#	ARTICLE	IF	CITATIONS
55	Experimental measurement of lateral transport in the inversion layer of silicon heterojunction solar cells. , 2013, , .		1
56	New concept of PECVD reactor for efficient production of silicon heterojunction solar cells. , 2015, , .		1
57	Advances in crystalline silicon heterojunction research and opportunities for low manufacturing costs. , 2015, , .		1
58	Engineering of Thin-Film Silicon Materials for High Efficiency Crystalline Silicon Solar Cells. , 2018, , .		1
59	Bottom-Up and Top-Down Approaches for Identifying and Mitigating Electrical Losses in Silicon Heterojunction Solar Cells. IEEE Journal of Photovoltaics, 2022, 12, 906-914.	1.5	1
60	DC Breakdown Experiments. , 2009, , .		0
61	Increasing short-circuit current in silicon heterojunction solar cells. , 2011, , .		0
62	Silicon heterojunction solar cells with plated contacts for low to medium concentration photovoltaics. , 2015, , .		0
63	Multiple dehydrogenation reactions of negative ions in low pressure silane plasma chemistry. Plasma Sources Science and Technology, 2020, 29, 105015.	1.3	0