JÃ¼rgen HÃ¼pkes

List of Publications by Year
in descending order

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102 papers	4,582 citations	126907 33 h-index	102487 66 g-index
105 all docs	105 docs citations	105 times ranked	3650 citing authors

#	Article	IF	Citations
1	The effect of front ZnO:Al surface texture and optical transparency on efficient light trapping in silicon thin-film solar cells. Journal of Applied Physics, 2007, 101, 074903.	2.5	469
2	Transparent Conductive Zinc Oxide. Springer Series in Materials Science, 2008, , .	0.6	417
3	Modified Thornton model for magnetron sputtered zinc oxide: film structure and etching behaviour. Thin Solid Films, 2003, 442, 80-85.	1.8	328
4	Efforts to improve carrier mobility in radio frequency sputtered aluminum doped zinc oxide films. Journal of Applied Physics, 2004, 95, 1911-1917.	2.5	251
5	Transparent conducting oxide films for thin film silicon photovoltaics. Thin Solid Films, 2007, 516, 147-154.	1.8	228
6	Improved electrical transport in Al-doped zinc oxide by thermal treatment. Journal of Applied Physics, 2010, 107, .	2.5	172
7	Surface textured MF-sputtered ZnO films for microcrystalline silicon-based thin-film solar cells. Solar Energy Materials and Solar Cells, 2006, 90, 3054-3060.	6.2	120
8	Recent development on surface-textured ZnO:Al films prepared by sputtering for thin-film solar cell application. Thin Solid Films, 2008, 516, 5836-5841.	1.8	120
9	Challenges in microcrystalline silicon based solar cell technology. Thin Solid Films, 2006, 511-512, 548-555.	1.8	113
10	Optimization of the electrical properties of magnetron sputtered aluminum-doped zinc oxide films for opto-electronic applications. Thin Solid Films, 2003, 442, 167-172.	1.8	106
11	Organic solar cells on indium tin oxide and aluminum doped zinc oxide anodes. Applied Physics Letters, 2007, 91, .	3.3	105
12	Material study on reactively sputtered zinc oxide for thin film silicon solar cells. Thin Solid Films, 2006, 502, 286-291.	1.8	101
13	Chemical Etching of Zinc Oxide for Thinâ€Film Silicon Solar Cells. ChemPhysChem, 2012, 13, 66-73.	2.1	101
14	Physical properties of highly oriented spray-deposited fluorine-doped tin dioxide films as transparent conductor. Solar Energy Materials and Solar Cells, 2009, 93, 1256-1262.	6.2	94
15	ZnO:Al films deposited by in-line reactive AC magnetron sputtering for a-Si:H thin film solar cells. Thin Solid Films, 2006, 496, 16-25.	1.8	88
16	Novel etching method on high rate ZnO:Al thin films reactively sputtered from dual tube metallic targets for silicon-based solar cells. Solar Energy Materials and Solar Cells, 2011, 95, 964-968.	6.2	84
17	Experimental studies and limitations of the light trapping and optical losses in microcrystalline silicon solar cells. Solar Energy Materials and Solar Cells, 2008, 92, 1037-1042.	6.2	77
18	Damp heat stability and annealing behavior of aluminum doped zinc oxide films prepared by magnetron sputtering. Thin Solid Films, 2006, 511-512, 673-677.	1.8	69

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19	A constructive combination of antireflection and intermediate-reflector layers for a-Siâˆ•Î¼c-Si thin film solar cells. Applied Physics Letters, 2008, 92, 053509.	3.3	64
20	Novel etch process to tune crater size on magnetron sputtered ZnO:Al. Physica Status Solidi (A) Applications and Materials Science, 2011, 208, 109-113.	1.8	62
21	Influence of interface morphologies on amorphous silicon thin film solar cells prepared on randomly textured substrates. Solar Energy Materials and Solar Cells, 2013, 112, 182-189.	6.2	56
22	Sputtered ITO for application in thin-film silicon solar cells: Relationship between structural and electrical properties. Applied Surface Science, 2013, 269, 81-87.	6.1	54
23	High deposition rate aluminium-doped zinc oxide films with highly efficient light trapping for silicon thin film solar cells. Thin Solid Films, 2008, 516, 1242-1248.	1.8	53
24	Bifacial Four-Terminal Perovskite/Silicon Tandem Solar Cells and Modules. ACS Energy Letters, 2020, 5, 1676-1680.	17.4	49
25	High rate direct current magnetron sputtered and texture-etched zinc oxide films for silicon thin film solar cells. Thin Solid Films, 2008, 516, 4628-4632.	1.8	48
26	Textureâ€etched ZnO as a versatile base for optical back reflectors with wellâ€designed surface morphologies for application in thin film solar cells. Physica Status Solidi (A) Applications and Materials Science, 2012, 209, 1144-1149.	1.8	47
27	CuIn1âˆ’xGaxSe2 photovoltaic devices for tandem solar cell application. Thin Solid Films, 2009, 517, 2411-2414.	1.8	46
28	Light trapping in periodically textured amorphous silicon thin film solar cells using realistic interface morphologies. Optics Express, 2013, 21, A595.	3.4	46
29	Influence of working pressure on ZnO:Al films from tube targets for silicon thin film solar cells. Thin Solid Films, 2010, 518, 4997-5002.	1.8	45
30	Aluminium doped zinc oxide sputtered from rotatable dual magnetrons for thin film silicon solar cells. Thin Solid Films, 2009, 517, 3161-3166.	1.8	44
31	Damp heat stable doped zinc oxide films. Thin Solid Films, 2014, 555, 48-52.	1.8	43
32	Temperature stability of ZnO:Al film properties for poly-Si thin-film devices. Applied Physics Letters, 2007, 91, 241911.	3.3	39
33	Oxygen influence on sputtered high rate ZnO:Al films from dual rotatable ceramic targets. Applied Surface Science, 2010, 256, 4601-4605.	6.1	33
34	Random versus periodic: Determining light trapping of randomly textured thin film solar cells by the superposition of periodic surface textures. Solar Energy Materials and Solar Cells, 2015, 143, 183-189.	6.2	31
35	Study of ZnO:Al films for silicon thin film solar cells. Applied Surface Science, 2012, 261, 268-275.	6.1	29
36	Hard x-ray photoelectron spectroscopy study of the buried Si/ZnO thin-film solar cell interface: Direct evidence for the formation of Siâ€“O at the expense of Zn-O bonds. Applied Physics Letters, 2011, 99, .	3.3	28

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37	Solid-phase crystallization of amorphous silicon on ZnO:Al for thin-film solar cells. Solar Energy Materials and Solar Cells, 2009, 93, 855-858.	6.2	26
38	Predicting the Interface Morphologies of Silicon Films on Arbitrary Substrates: Application in Solar Cells. ACS Applied Materials & Interfaces, 2013, 5, 7109-7116.	8.0	25
39	Analyzing nanotextured transparent conductive oxides for efficient light trapping in silicon thin film solar cells. Applied Physics Letters, 2012, 101, .	3.3	24
40	Field Emission at Grain Boundaries: Modeling the Conductivity in Highly Doped Polycrystalline Semiconductors. Physical Review Applied, 2016, 5, .	3.8	24
41	Rough glass by 3d texture transfer for silicon thin film solar cells. Physica Status Solidi C: Current Topics in Solid State Physics, 2010, 7, 1120-1123.	0.8	23
42	Study on the in-line sputtering growth and structural properties of polycrystalline ZnO:Al on ZnO and glass. Journal of Crystal Growth, 2012, 344, 12-18.	1.5	23
43	Large-grained poly-Si films on ZnO:Al coated glass substrates. Thin Solid Films, 2008, 516, 6869-6872.	1.8	22
44	Electrochemical texturing of Al-doped ZnO thin films for photovoltaic applications. Journal of Solid State Electrochemistry, 2012, 16, 283-290.	2.5	22
45	Window layer development for microcrystalline silicon solar cells in nâ€iâ€p configuration. Physica Status Solidi C: Current Topics in Solid State Physics, 2010, 7, 1069-1072.	0.8	21
46	Amorphous and Microcrystalline Silicon Based Solar Cells and Modules on Textured Zinc Oxide Coated Glass Substrates. Materials Research Society Symposia Proceedings, 2003, 762, 311.	0.1	20
47	Electrochemical Etching of Zinc Oxide for Silicon Thin Film Solar Cell Applications. Journal of the Electrochemical Society, 2011, 158, D413.	2.9	20
48	Thin-film Silicon Solar Cells on Dry Etched Textured Glass. Energy Procedia, 2014, 44, 151-159.	1.8	20
49	Instabilities in reactive sputtering of ZnO:Al and reliable texture-etching solution for light trapping in silicon thin film solar cells. Thin Solid Films, 2012, 520, 1913-1917.	1.8	19
50	Texture Etched ZnO:Al for Silicon Thin Film Solar Cells. Springer Series in Materials Science, 2008, , 359-413.	0.6	18
51	Novel texturing method for sputtered zinc oxide films prepared at high deposition rate from ceramic tube targets. EPJ Photovoltaics, 2011, 2, 20602.	1.6	16
52	Reliability aspects of hydrogenâ€doped indium oxide. Physica Status Solidi (A) Applications and Materials Science, 2016, 213, 1751-1759.	1.8	16
53	Influence of Room Temperature Sputtered Al-Doped Zinc Oxide on Passivation Quality in Silicon Heterojunction Solar Cells. IEEE Journal of Photovoltaics, 2019, 9, 1485-1491.	2.5	16
54	Hydrogen Diffusion in Zinc Oxide Thin Films. Materials Research Society Symposia Proceedings, 2009, 1165, 1.	0.1	15

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55	Influence of Oxygen on Sputtered Titaniumâ€Doped Indium Oxide Thin Films and Their Application in Silicon Heterojunction Solar Cells. Solar Rrl, 2021, 5, 2000501.	5.8	15
56	Ray tracing for the optics at nanoâ€textured ZnOâ€“air and ZnOâ€“silicon interfaces. Progress in Photovoltaics: Research and Applications, 2011, 19, 724-732.	8.1	13
57	Reactive sputtering of ZnO:Al thin films from rotatable dual metallic targets. Applied Surface Science, 2012, 259, 582-589.	6.1	13
58	As-grown textured zinc oxide films by ion beam treatment and magnetron sputtering. Thin Solid Films, 2012, 520, 4208-4213.	1.8	13
59	Observation of the Evolution of Etch Features on Polycrystalline ZnO:Al Thin-Films. Materials Research Society Symposia Proceedings, 2009, 1153, 1.	0.1	12
60	High rate reactive magnetron sputtering of ZnO:Al films from rotating metallic targets. Surface and Coatings Technology, 2010, 205, 773-779.	4.8	12
61	ZnO Etch-Feature Control via Concentration and Temperature of Various Acids. ECS Journal of Solid State Science and Technology, 2012, 1, P11-P17.	1.8	12
62	The silicon/zinc oxide interface in amorphous silicon-based thin-film solar cells: Understanding an empirically optimized contact. Applied Physics Letters, 2013, 103, .	3.3	12
63	Challenges and opportunities of electron beam evaporation in the preparation of poly-Si thin film solar cells. , 2010, , .		11
64	Development of two-step etching approach for aluminium doped zinc oxide using a combination of standard HCl and NH4Cl etch steps. Thin Solid Films, 2012, 520, 4678-4684.	1.8	11
65	Process monitoring of texture-etched high-rate ZnO:Al front contacts for silicon thin-film solar cells. Thin Solid Films, 2013, 532, 66-72.	1.8	11
66	Effects of the electrolyte species on the electrochemical dissolution of polycrystalline ZnO:Al thin films. Electrochimica Acta, 2013, 112, 976-982.	5.2	11
67	Comparison of LPCVD and sputter-etched ZnO layers applied as front electrodes in tandem thin-film silicon solar cells. Solar Energy Materials and Solar Cells, 2016, 145, 185-192.	6.2	11
68	Performance Evaluation of Semitransparent Perovskite Solar Cells for Application in Four-Terminal Tandem Cells. ACS Energy Letters, 2018, 3, 1861-1867.	17.4	11
69	Influence of deposition conditions and substrate morphology on the electrical properties of sputtered ZnO:Al grown on texture-etched glass. Thin Solid Films, 2014, 568, 25-30.	1.8	10
70	Coupling and Trapping of Light in Thin-Film Solar Cells Using Modulated Interface Textures. Applied Sciences (Switzerland), 2019, 9, 4648.	2.5	10
71	Material Aspects of Reactively MF-Sputtered Zinc Oxide for TCO Application in Silicon Thin Film Solar Cells. Materials Research Society Symposia Proceedings, 2003, 762, 7111.	0.1	10
72	Preparation and topography analysis of randomly textured glass substrates. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2010, 28, 1255-1258.	2.1	9

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73	High mobility annealing of Transparent Conductive Oxides. IOP Conference Series: Materials Science and Engineering, 2012, 34, 012004.	0.6	9
74	Variation of back reflector morphology in nâ€“iâ€“p microcrystalline silicon thin film solar cells using texture-etched ZnO. Journal of Non-Crystalline Solids, 2012, 358, 2474-2477.	3.1	9
75	Design of ZnO:Al films with optimized surface texture for silicon thin-film solar cells. , 2006, , .		8
76	Contact resistivity measurements of the buried Siâ€“ZnO:Al interface of polycrystalline silicon thin-film solar cells on ZnO:Al. Thin Solid Films, 2011, 520, 1268-1273.	1.8	8
77	Sputtering of ZnO:Al films from dual tube targets with tilted magnetrons. Thin Solid Films, 2011, 519, 2366-2370.	1.8	8
78	Performance of superstrate multijunction amorphous silicon-based solar cells using optical layers for current management. Solar Energy Materials and Solar Cells, 2009, 93, 973-975.	6.2	7
79	Ion beam assisted sputter deposition of ZnO for silicon thin-film solar cells. Journal Physics D: Applied Physics, 2014, 47, 105202.	2.8	7
80	Influence of film formation on light-trapping properties of randomly textured silicon thin-film solar cells. Applied Physics Express, 2014, 7, 082301.	2.4	7
81	Role of the dopant aluminum for the growth of sputtered ZnO:Al investigated by means of a seed layer concept. Journal of Applied Physics, 2015, 118, .	2.5	7
82	Pronounced Surface Band Bending of Thin-Film Silicon Revealed by Modeling Core Levels Probed with Hard X-rays. ACS Applied Materials & Interfaces, 2016, 8, 17685-17693.	8.0	7
83	Dielectric Junction: Electrostatic Design for Charge Carrier Collection in Solar Cells. Solar Rrl, 2022, 6, 2100720.	5.8	7
84	Initial stage of pore formation process in anodic aluminum oxide template. Journal of Solid State Electrochemistry, 2010, 14, 1377-1382.	2.5	6
85	Chemical interaction at the buried silicon/zinc oxide thin-film solar cell interface as revealed by hard X-ray photoelectron spectroscopy. Journal of Electron Spectroscopy and Related Phenomena, 2013, 190, 309-313.	1.7	6
86	An image processing approach to approximating interface textures of microcrystalline silicon layers grown on existing aluminum-doped zinc oxide textures. Optics Express, 2013, 21, A977.	3.4	6
87	Significantly decreased production times for aâ€Si/Âµcâ€Si tandem cells on textureâ€etched ZnO:Al. Physica Status Solidi (A) Applications and Materials Science, 2010, 207, 678-681.	1.8	5
88	The catalytic effect of iron(III) on the etching of ZnO:Al front contacts for thin-film silicon solar cells. Solar Energy Materials and Solar Cells, 2013, 113, 106-113.	6.2	5
89	Influence of atmosphere and material properties on damp heat stability of ZnO:Al. Physica Status Solidi (A) Applications and Materials Science, 2016, 213, 1796-1800.	1.8	5
90	Pretreatment of glass substrates by Ar/O2 ion beams for the as-sputtered rough Al doped zinc oxide thin films. Surface and Coatings Technology, 2011, 205, S223-S228.	4.8	4

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91	p-Type a-Si:H/ZnO:Al and Î¼c-Si:H/ZnO:Al Thin-Film Solar Cell Structuresâ€"A Comparative Hard X-Ray Photoelectron Spectroscopy Study. IEEE Journal of Photovoltaics, 2013, 3, 483-487.	2.5	4
92	Fabrication of Anodic Aluminum Oxide Templates with Small Interpore Distances. Chinese Physics Letters, 2010, 27, 066801.	3.3	3
93	ZnO based Back Reflectors with a Wide Range of Surface Morphologies for Light Trapping in n-i-p Microcrystalline Silicon Solar Cells. Energy Procedia, 2014, 44, 223-228.	1.8	3
94	Application of Room Temperature Sputtered Al-doped Zinc Oxide in Silicon Heterojunction Solar Cells. , 2018, , .		3
95	Electrochemical Etching of Zinc Oxide for Silicon Thin Film Solar Cell Applications. ECS Transactions, 2011, 33, 41-55.	0.5	2
96	Voltage-matched thin film solar cells in 3-terminal configuration. Solar Energy Materials and Solar Cells, 2018, 188, 202-209.	6.2	2
97	Ray tracing analysis of light scattering properties of randomly nano-textured ZnO films. , 2010, , .		1
98	p-Type a-Si:H/ZnO:Al and µc-Si:H/ZnO:Al thin-film solar cell structures—A comparative hard X-ray photoelectron spectroscopy study. , 2012, , .		1
99	p-Type a-Si:H/ZnO:Al and µc-Si:H/ZnO:Al thin-film solar cell structures—A comparative hard X-ray photoelectron spectroscopy study. , 2013, , .		1
100	In-situ determination of the effective absorbance of thinÎ¼c-Si:H layers growing on rough ZnO:Al. EPJ Photovoltaics, 2013, 4, 40602.	1.6	1
101	ZnO:Al on rough substrates: From surface texture to conductivity prediction. , 2015, , .		1
102	On the fabrication of disordered nanostructures for light extraction in corrugated OLEDs. , 2017, , .		0