Bernd Stannowski

List of Publications by Year
in descending order

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74 papers	4,557 citations	186265 28 h-index	102487 66 g-index
74 all docs	74 docs citations	74 times ranked	4756 citing authors

#	Article	IF	Citations
1	Encapsulation and Outdoor Testing of Perovskite Solar Cells: Comparing Industrially Relevant Process with a Simplified Lab Procedure. ACS Applied Materials & Interfaces, 2022, 14, 5159-5167.	8.0	43
2	New insights into the environmental performance of perovskite-on-silicon tandem solar cells â€“ a life cycle assessment of industrially manufactured modules. Sustainable Energy and Fuels, 2022, 6, 2924-2940.	4.9	8
3	Imaging of Bandtail States in Silicon Heterojunction Solar Cells: Nanoscopic Current Effects on Photovoltaics. ACS Applied Nano Materials, 2021, 4, 2404-2412.	5.0	2
4	27.9% Efficient Monolithic Perovskite/Silicon Tandem Solar Cells on Industry Compatible Bottom Cells. Solar Rrl, 2021, 5, 2100244.	5.8	59
5	Periodically Nanostructured Perovskite/Silicon Tandem Solar Cells with Power Conversion Efficiency Exceeding 26%. , 2021, , .		2
6	Electrical and optical simulation of perovskite/silicon tandem solar cells using Tcad-Sentaurus. , 2021, , .		3
7	Coâ€Evaporated Formamidinium Lead Iodide Based Perovskites with 1000 h Constant Stability for Fully Textured Monolithic Perovskite/Silicon Tandem Solar Cells. Advanced Energy Materials, 2021, 11, 2101460.	19.5	102
8	Enhanced Optical Performance in Perovskite/Silicon Tandem Solar Cells Enabled by Periodic Nanotextures. , 2021, , .		0
9	Improved Surface Passivation by Wet Texturing, Ozoneâ€Based Cleaning, and Plasmaâ€Enhanced Chemical Vapor Deposition Processes for Highâ€Efficiency Silicon Heterojunction Solar Cells. Physica Status Solidi (A) Applications and Materials Science, 2020, 217, 1900518.	1.8	13
10	Influence of Silicon Layers on the Growth of ITO and AZO in Silicon Heterojunction Solar Cells. IEEE Journal of Photovoltaics, 2020, 10, 703-709.	2.5	31
11	Tailored Nanostructures for Light Management in Silicon Heterojunction Solar Cells. Solar Rrl, 2020, 4, 2000484.	5.8	11
12	Effect of the ambient conditions on the operation of a large-area integrated photovoltaic-electrolyser. Sustainable Energy and Fuels, 2020, 4, 4831-4847.	4.9	14
13	Versatility of Nanocrystalline Silicon Films: from Thin-Film to Perovskite/c-Si Tandem Solar Cell Applications. Coatings, 2020, 10, 759.	2.6	8
14	Monolithic perovskite/silicon tandem solar cell with >29% efficiency by enhanced hole extraction. Science, 2020, 370, 1300-1309.	12.6	1,120
15	Toward High Solar Cell Efficiency with Low Material Usage: 15% Efficiency with 14â€‰Î¼m Polycrystalline Silicon on Glass. Solar Rrl, 2020, 4, 2000058.	5.8	12
16	A piperidinium salt stabilizes efficient metal-halide perovskite solar cells. Science, 2020, 369, 96-102.	12.6	461
17	Proton Radiation Hardness of Perovskite Tandem Photovoltaics. Joule, 2020, 4, 1054-1069.	24.0	104
18	Demonstration of a 50 cm² BiVO₄ tandem photoelectrochemical-photovoltaic water splitting device. Sustainable Energy and Fuels, 2019, 3, 2366-2379.	4.9	84

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19	A simple method with analytical model to extract heterojunction solar cell series resistance components and to extract the A-Si:H(i/p) to transparent conductive oxide contact resistivity. AIP Conference Proceedings, 2019, , .	0.4	7
20	Highly efficient monolithic perovskite silicon tandem solar cells: analyzing the influence of current mismatch on device performance. Sustainable Energy and Fuels, 2019, 3, 1995-2005.	4.9	208
21	Aluminum-Doped Zinc Oxide as Front Electrode for Rear Emitter Silicon Heterojunction Solar Cells with High Efficiency. Applied Sciences (Switzerland), 2019, 9, 862.	2.5	24
22	Effect of front TCO on the performance of rear-junction silicon heterojunction solar cells: Insights from simulations and experiments. Solar Energy Materials and Solar Cells, 2019, 195, 339-345.	6.2	62
23	Infrared Light Management Using a Nanocrystalline Silicon Oxide Interlayer in Monolithic Perovskite/Silicon Heterojunction Tandem Solar Cells with Efficiency above 25%. Advanced Energy Materials, 2019, 9, 1803241.	19.5	239
24	ITO-Free Silicon Heterojunction Solar Cells With ZnO:Al/SiO₂ Front Electrodes Reaching a Conversion Efficiency of 23%. IEEE Journal of Photovoltaics, 2019, 9, 34-39.	2.5	52
25	Ultra-thin nanocrystalline n-type silicon oxide front contact layers for rear-emitter silicon heterojunction solar cells. Solar Energy Materials and Solar Cells, 2018, 179, 386-391.	6.2	52
26	Textured interfaces in monolithic perovskite/silicon tandem solar cells: advanced light management for improved efficiency and energy yield. Energy and Environmental Science, 2018, 11, 3511-3523.	30.8	281
27	Nanocrystalline silicon oxide interlayer in monolithic perovskite/silicon heterojunction tandem solar cells with total current density >39 mA/cm². , 2018, , .		2
28	Infrared photocurrent management in monolithic perovskite/silicon heterojunction tandem solar cells by using a nanocrystalline silicon oxide interlayer. Optics Express, 2018, 26, A487.	3.4	48
29	ZnO:Al/a-SiOx front contact for polycrystalline-silicon-on-oxide (POLO) solar cells. AIP Conference Proceedings, 2018, , .	0.4	7
30	Nanocrystalline n-Type Silicon Oxide Front Contacts for Silicon Heterojunction Solar Cells: Photocurrent Enhancement on Planar and Textured Substrates. IEEE Journal of Photovoltaics, 2018, 8, 70-78.	2.5	51
31	Nanocrystalline silicon emitter optimization for Si-HJ solar cells: Substrate selectivity and CO₂plasma treatment effect. Physica Status Solidi (A) Applications and Materials Science, 2017, 214, 1532958.	1.8	36
32	Passivation at the interface between liquidâ€phase crystallized silicon and silicon oxynitride in thin film solar cells. Progress in Photovoltaics: Research and Applications, 2017, 25, 515-524.	8.1	8
33	ITO-free metallization for interdigitated back contact silicon heterojunction solar cells. Energy Procedia, 2017, 124, 379-383.	1.8	4
34	Resolving the nanostructure of plasma-enhanced chemical vapor deposited nanocrystalline SiOx layers for application in solar cells. Journal of Applied Physics, 2016, 119, 223104.	2.5	22
35	Wafer Surface Tuning for a-Si:H/Î¼c-Si:H/c-Si Triple Junction Solar Cells for Application in Water Splitting. Energy Procedia, 2016, 102, 126-135.	1.8	10
36	Artificial Leaf for Water Splitting Based on a Tripleâ€Junction Thinâ€Film Silicon Solar Cell and a PEDOT:PSS/Catalyst Blend. Energy Technology, 2016, 4, 230-241.	3.8	29

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37	Crystalline silicon on glassâ€"interface passivation and absorber material quality. Progress in Photovoltaics: Research and Applications, 2016, 24, 1499-1512.	8.1	19
38	Architectures for scalable integrated photo driven catalytic devices-A concept study. International Journal of Hydrogen Energy, 2016, 41, 20823-20831.	7.1	14
39	Optimized immobilization of ZnO:Co electrocatalysts realizes 5% efficiency in photo-assisted splitting of water. Journal of Materials Chemistry A, 2016, 4, 3082-3090.	10.3	7
40	Comparison of the influence of boron and aluminium doping on the material properties of electrochemically deposited ZnO films. Thin Solid Films, 2015, 594, 215-224.	1.8	3
41	Silicon Heterojunction Solar Cells With Nanocrystalline Silicon Oxide Emitter: Insights Into Charge Carrier Transport. IEEE Journal of Photovoltaics, 2015, 5, 1601-1605.	2.5	25
42	p-type microcrystalline silicon oxide emitter for silicon heterojunction solar cells allowing current densities above 40â€‰mA/cm2. Applied Physics Letters, 2015, 106, .	3.3	93
43	Hybrid Organic/Inorganic Thinâ€Film Multijunction Solar Cells Exceeding 11% Power Conversion Efficiency. Advanced Materials, 2015, 27, 1262-1267.	21.0	40
44	Quadruple-junction solar cells and modules based on amorphous and microcrystalline silicon with high stable efficiencies. Japanese Journal of Applied Physics, 2015, 54, 08KB03.	1.5	33
45	Nanocrystalline Silicon Oxide Emitters for Silicon Hetero Junction Solar Cells. Energy Procedia, 2015, 77, 304-310.	1.8	16
46	Influence of Chemical Composition and Structure in Silicon Dielectric Materials on Passivation of Thin Crystalline Silicon on Glass. ACS Applied Materials & Interfaces, 2015, 7, 19282-19294.	8.0	10
47	The Influence of ITO Dopant Density on J-V Characteristics of Silicon Heterojunction Solar Cells: Experiments and Simulations. Energy Procedia, 2015, 77, 725-732.	1.8	37
48	On the Plasma Chemistry During Plasma Enhanced Chemical Vapor Deposition of Microcrystalline Silicon Oxides. Plasma Processes and Polymers, 2015, 12, 82-91.	3.0	27
49	Implications of TCO Topography on Intermediate Reflector Design for a-Si/Î¼c-Si Tandem Solar Cellsâ€"Experiments and Rigorous Optical Simulations. IEEE Journal of Photovoltaics, 2014, 4, 10-15.	2.5	17
50	PECVD Intermediate and Absorber Layers Applied in Liquid-Phase Crystallized Silicon Solar Cells on Glass Substrates. IEEE Journal of Photovoltaics, 2014, 4, 1343-1348.	2.5	26
51	Improved conversion efficiency of aâ€Si:H/Âµcâ€Si:H thinâ€film solar cells by using annealed Alâ€doped zinc oxide as front electrode material. Progress in Photovoltaics: Research and Applications, 2014, 22, 1285-1291.	8.1	24
52	Efficient plasmonic scattering of colloidal silver particles through annealing-induced changes. Nanotechnology, 2014, 25, 455706.	2.6	7
53	Comparison of TMB and B2H6 as Precursors for Emitter Doping in High Efficiency Silicon Hetero Junction Solar Cells. Energy Procedia, 2014, 60, 123-128.	1.8	12
54	Plasma monitoring and PECVD process control in thin film silicon-based solar cell manufacturing. EPJ Photovoltaics, 2014, 5, 55202.	1.6	28

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55	Potential of high-mobility sputtered zinc oxide as front contact for high efficiency thin film silicon solar cells. Thin Solid Films, 2014, 555, 138-142.	1.8	7
56	Plasma enhanced chemical vapor deposition process optimization for thin film silicon tandem junction solar cells. Thin Solid Films, 2014, 558, 337-343.	1.8	13
57	Zinc oxide films grown by galvanic deposition from 99% metals basis zinc nitrate electrolyte. Journal of Materials Chemistry A, 2014, 2, 9626-9635.	10.3	3
58	Growth process of microcrystalline silicon studied by combined photoluminescence and Raman investigations. Journal of Applied Physics, 2013, 114, .	2.5	6
59	Advanced properties of Al-doped ZnO films with a seed layer approach for industrial thin film photovoltaic application. Thin Solid Films, 2013, 534, 474-481.	1.8	19
60	Characterization of thinâ€film aâ€Si:H/Âµcâ€Si:H tandem solar cells on glass substrates. Crystal Research and Technology, 2013, 48, 279-286.	1.3	1
61	The growth of microcrystalline silicon oxide thin films studied by in situ plasma diagnostics. Applied Physics Letters, 2013, 102, 051906.	3.3	24
62	An improved siliconâ€oxideâ€based intermediateâ€reflector for micromorph solar cells. Physica Status Solidi C: Current Topics in Solid State Physics, 2012, 9, 2145-2148.	0.8	17
63	Efficiency Enhancement of Organic and Thin-Film Silicon Solar Cells with Photochemical Upconversion. Journal of Physical Chemistry C, 2012, 116, 22794-22801.	3.1	167
64	Improving the light-harvesting of amorphous silicon solar cells with photochemical upconversion. Energy and Environmental Science, 2012, 5, 6953.	30.8	339
65	Photochemical Upconversion Enhanced Solar Cells: Effect of a Back Reflector. Australian Journal of Chemistry, 2012, 65, 480.	0.9	85
66	Helianthos: Roll-to-Roll Deposition of Flexible Solar Cell Modules. Plasma Processes and Polymers, 2007, 4, 275-281.	3.0	24
67	Silicon nitride at high deposition rate by Hot Wire Chemical Vapor Deposition as passivating and antireflection layer on multicrystalline silicon solar cells. Thin Solid Films, 2006, 501, 51-54.	1.8	28
68	Thin-film transistors deposited by hot-wire chemical vapor deposition. Thin Solid Films, 2003, 430, 220-225.	1.8	29
69	Growth process and properties of silicon nitride deposited by hot-wire chemical vapor deposition. Journal of Applied Physics, 2003, 93, 2618-2625.	2.5	43
70	Hot-wire amorphous silicon thin-film transistors on glass. Thin Solid Films, 2001, 383, 125-128.	1.8	16
71	Application of hot-wire chemical vapor-deposited Si:H films in thin film transistors and solar cells. Thin Solid Films, 2001, 395, 320-329.	1.8	23
72	Hot-wire silicon nitride for thin-film transistors. Thin Solid Films, 2001, 395, 339-342.	1.8	27

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73	High energy-barrier for defect creation in thin-film transistors based on hot-wire amorphous silicon. Applied Physics Letters, 1999, 75, 3674-3676.	3.3	14
74	Transient photocurrent response of three-color detectors based on amorphous silicon. Journal of Applied Physics, 1999, 85, 3904-3911.	2.5	15