

# 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	Monolithic perovskite/silicon tandem solar cell with >29% efficiency by enhanced hole extraction. Science, 2020, 370, 1300-1309.	12.6	1,120
2	A piperidinium salt stabilizes efficient metal-halide perovskite solar cells. Science, 2020, 369, 96-102.	12.6	461
3	Improving the light-harvesting of amorphous silicon solar cells with photochemical upconversion. Energy and Environmental Science, 2012, 5, 6953.	30.8	339
4	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
5	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
6	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
7	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
8	Proton Radiation Hardness of Perovskite Tandem Photovoltaics. Joule, 2020, 4, 1054-1069.	24.0	104
9	Co-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
10	p-type microcrystalline silicon oxide emitter for silicon heterojunction solar cells allowing current densities above 40 mA/cm <sup>2</sup> . Applied Physics Letters, 2015, 106, .	3.3	93
11	Photochemical Upconversion Enhanced Solar Cells: Effect of a Back Reflector. Australian Journal of Chemistry, 2012, 65, 480.	0.9	85
12	Demonstration of a 50 cm <sup>2</sup> BiVO <sub>4</sub> tandem photoelectrochemical-photovoltaic water splitting device. Sustainable Energy and Fuels, 2019, 3, 2366-2379.	4.9	84
13	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
14	27.9% Efficient Monolithic Perovskite/Silicon Tandem Solar Cells on Industry Compatible Bottom Cells. Solar Rrl, 2021, 5, 2100244.	5.8	59
15	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
16	ITO-Free Silicon Heterojunction Solar Cells With ZnO:Al/SiO <sub>2</sub> Front Electrodes Reaching a Conversion Efficiency of 23%. IEEE Journal of Photovoltaics, 2019, 9, 34-39.	2.5	52
17	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
18	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

#	ARTICLE	IF	CITATIONS
19	Growth process and properties of silicon nitride deposited by hot-wire chemical vapor deposition. <i>Journal of Applied Physics</i> , 2003, 93, 2618-2625.	2.5	43
20	Encapsulation and Outdoor Testing of Perovskite Solar Cells: Comparing Industrially Relevant Process with a Simplified Lab Procedure. <i>ACS Applied Materials &amp; Interfaces</i> , 2022, 14, 5159-5167.	8.0	43
21	Hybrid Organic/Inorganic Thin-Film Multijunction Solar Cells Exceeding 11% Power Conversion Efficiency. <i>Advanced Materials</i> , 2015, 27, 1262-1267.	21.0	40
22	The Influence of ITO Dopant Density on J-V Characteristics of Silicon Heterojunction Solar Cells: Experiments and Simulations. <i>Energy Procedia</i> , 2015, 77, 725-732.	1.8	37
23	Nanocrystalline silicon emitter optimization for Si-HJ solar cells: Substrate selectivity and CO <sub>2</sub> plasma treatment effect. <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2017, 214, 1532958.	1.8	36
24	Quadruple-junction solar cells and modules based on amorphous and microcrystalline silicon with high stable efficiencies. <i>Japanese Journal of Applied Physics</i> , 2015, 54, 08KB03.	1.5	33
25	Influence of Silicon Layers on the Growth of ITO and AZO in Silicon Heterojunction Solar Cells. <i>IEEE Journal of Photovoltaics</i> , 2020, 10, 703-709.	2.5	31
26	Thin-film transistors deposited by hot-wire chemical vapor deposition. <i>Thin Solid Films</i> , 2003, 430, 220-225.	1.8	29
27	Artificial Leaf for Water Splitting Based on a Triple-Junction Thin-Film Silicon Solar Cell and a PEDOT:PSS/Catalyst Blend. <i>Energy Technology</i> , 2016, 4, 230-241.	3.8	29
28	Silicon nitride at high deposition rate by Hot Wire Chemical Vapor Deposition as passivating and antireflection layer on multicrystalline silicon solar cells. <i>Thin Solid Films</i> , 2006, 501, 51-54.	1.8	28
29	Plasma monitoring and PECVD process control in thin film silicon-based solar cell manufacturing. <i>EPJ Photovoltaics</i> , 2014, 5, 55202.	1.6	28
30	Hot-wire silicon nitride for thin-film transistors. <i>Thin Solid Films</i> , 2001, 395, 339-342.	1.8	27
31	On the Plasma Chemistry During Plasma Enhanced Chemical Vapor Deposition of Microcrystalline Silicon Oxides. <i>Plasma Processes and Polymers</i> , 2015, 12, 82-91.	3.0	27
32	PECVD Intermediate and Absorber Layers Applied in Liquid-Phase Crystallized Silicon Solar Cells on Glass Substrates. <i>IEEE Journal of Photovoltaics</i> , 2014, 4, 1343-1348.	2.5	26
33	Silicon Heterojunction Solar Cells With Nanocrystalline Silicon Oxide Emitter: Insights Into Charge Carrier Transport. <i>IEEE Journal of Photovoltaics</i> , 2015, 5, 1601-1605.	2.5	25
34	Helianthos: Roll-to-Roll Deposition of Flexible Solar Cell Modules. <i>Plasma Processes and Polymers</i> , 2007, 4, 275-281.	3.0	24
35	The growth of microcrystalline silicon oxide thin films studied by in situ plasma diagnostics. <i>Applied Physics Letters</i> , 2013, 102, 051906.	3.3	24
36	Improved conversion efficiency of a-Si:H/μc-Si:H thin-film solar cells by using annealed Al-doped zinc oxide as front electrode material. <i>Progress in Photovoltaics: Research and Applications</i> , 2014, 22, 1285-1291.	8.1	24

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37	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
38	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
39	Resolving the nanostructure of plasma-enhanced chemical vapor deposited nanocrystalline SiO <sub>x</sub> layers for application in solar cells. Journal of Applied Physics, 2016, 119, 223104.	2.5	22
40	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
41	Crystalline silicon on glass—interface passivation and absorber material quality. Progress in Photovoltaics: Research and Applications, 2016, 24, 1499-1512.	8.1	19
42	An improved silicon—oxide—based intermediate—reflector for micromorph solar cells. Physica Status Solidi C: Current Topics in Solid State Physics, 2012, 9, 2145-2148.	0.8	17
43	Implications of TCO Topography on Intermediate Reflector Design for a-Si/1/4c-Si Tandem Solar Cells—Experiments and Rigorous Optical Simulations. IEEE Journal of Photovoltaics, 2014, 4, 10-15.	2.5	17
44	Hot-wire amorphous silicon thin-film transistors on glass. Thin Solid Films, 2001, 383, 125-128.	1.8	16
45	Nanocrystalline Silicon Oxide Emitters for Silicon Hetero Junction Solar Cells. Energy Procedia, 2015, 77, 304-310.	1.8	16
46	Transient photocurrent response of three-color detectors based on amorphous silicon. Journal of Applied Physics, 1999, 85, 3904-3911.	2.5	15
47	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
48	Architectures for scalable integrated photo driven catalytic devices-A concept study. International Journal of Hydrogen Energy, 2016, 41, 20823-20831.	7.1	14
49	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
50	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
51	Improved Surface Passivation by Wet Texturing, Ozone—Based Cleaning, and Plasma—Enhanced Chemical Vapor Deposition Processes for High—Efficiency Silicon Heterojunction Solar Cells. Physica Status Solidi (A) Applications and Materials Science, 2020, 217, 1900518.	1.8	13
52	Comparison of TMB and B <sub>2</sub> H <sub>6</sub> as Precursors for Emitter Doping in High Efficiency Silicon Hetero Junction Solar Cells. Energy Procedia, 2014, 60, 123-128.	1.8	12
53	Toward High Solar Cell Efficiency with Low Material Usage: 15% Efficiency with 14—m Polycrystalline Silicon on Glass. Solar Rrl, 2020, 4, 2000058.	5.8	12
54	Tailored Nanostructures for Light Management in Silicon Heterojunction Solar Cells. Solar Rrl, 2020, 4, 2000484.	5.8	11

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55	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
56	Wafer Surface Tuning for a-Si:H/i/p-c-Si:H/c-Si Triple Junction Solar Cells for Application in Water Splitting. Energy Procedia, 2016, 102, 126-135.	1.8	10
57	Passivation at the interface between liquid-phase crystallized silicon and silicon oxynitride in thin film solar cells. Progress in Photovoltaics: Research and Applications, 2017, 25, 515-524.	8.1	8
58	Versatility of Nanocrystalline Silicon Films: from Thin-Film to Perovskite/c-Si Tandem Solar Cell Applications. Coatings, 2020, 10, 759.	2.6	8
59	New insights into the environmental performance of perovskite-on-silicon tandem solar cells – a life cycle assessment of industrially manufactured modules. Sustainable Energy and Fuels, 2022, 6, 2924-2940.	4.9	8
60	Efficient plasmonic scattering of colloidal silver particles through annealing-induced changes. Nanotechnology, 2014, 25, 455706.	2.6	7
61	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
62	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
63	ZnO:Al/a-SiO <sub>x</sub> front contact for polycrystalline-silicon-on-oxide (POLO) solar cells. AIP Conference Proceedings, 2018, , .	0.4	7
64	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
65	Growth process of microcrystalline silicon studied by combined photoluminescence and Raman investigations. Journal of Applied Physics, 2013, 114, .	2.5	6
66	ITO-free metallization for interdigitated back contact silicon heterojunction solar cells. Energy Procedia, 2017, 124, 379-383.	1.8	4
67	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
68	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
69	Electrical and optical simulation of perovskite/silicon tandem solar cells using Tcad-Sentaurus. , 2021, , .		3
70	Nanocrystalline silicon oxide interlayer in monolithic perovskite/silicon heterojunction tandem solar cells with total current density >39 mA/cm <sup>2</sup> . , 2018, , .		2
71	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
72	Periodically Nanostructured Perovskite/Silicon Tandem Solar Cells with Power Conversion Efficiency Exceeding 26%. , 2021, , .		2

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73	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
74	Enhanced Optical Performance in Perovskite/Silicon Tandem Solar Cells Enabled by Periodic Nanotextures. , 2021, , .		0