

Benedikt Bläsi

List of Publications by Year in descending order

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112
papers

2,086
citations

201674

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265206

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docs citations

119
times ranked

2059
citing authors

#	ARTICLE	IF	CITATIONS
1	III-V-on-silicon solar cells reaching 33% photoconversion efficiency in two-terminal configuration. <i>Nature Energy</i> , 2018, 3, 326-333.	39.5	244
2	Spectrally-Selective Photonic Structures for PV Applications. <i>Energies</i> , 2010, 3, 171-193.	3.1	71
3	Impact of Photon Recycling on GaAs Solar Cell Designs. <i>IEEE Journal of Photovoltaics</i> , 2015, 5, 1636-1645.	2.5	70
4	Antireflective submicrometer surface-relief gratings for solar applications. <i>Solar Energy Materials and Solar Cells</i> , 1998, 54, 333-342.	6.2	67
5	Some application cases and related manufacturing techniques for optically functional microstructures on large areas. <i>Optical Engineering</i> , 2004, 43, 2525.	1.0	66
6	Diffraction gratings for crystalline silicon solar cells—optimum parameters and loss mechanisms. <i>Progress in Photovoltaics: Research and Applications</i> , 2012, 20, 862-873.	8.1	65
7	Glazing with very high solar transmittance. <i>Solar Energy</i> , 1998, 62, 177-188.	6.1	58
8	3D optical simulation formalism OPTOS for textured silicon solar cells. <i>Optics Express</i> , 2015, 23, A1720.	3.4	56
9	Honeycomb Texturing of Silicon Via Nanoimprint Lithography for Solar Cell Applications. <i>IEEE Journal of Photovoltaics</i> , 2012, 2, 114-122.	2.5	54
10	Nanoimprinted diffraction gratings for crystalline silicon solar cells: implementation, characterization and simulation. <i>Optics Express</i> , 2013, 21, A295.	3.4	53
11	Two-terminal III-V/Si triple-junction solar cell with power conversion efficiency of 35.9% at AM1.5g. <i>Progress in Photovoltaics: Research and Applications</i> , 2022, 30, 869-879.	8.1	53
12	Theoretical and experimental analysis of photonic structures for fluorescent concentrators with increased efficiencies. <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2008, 205, 2811-2821.	1.8	52
13	Origination of nano- and microstructures on large areas by interference lithography. <i>Microelectronic Engineering</i> , 2012, 98, 293-296.	2.4	51
14	Cloaked contact grids on solar cells by coordinate transformations: designs and prototypes. <i>Optica</i> , 2015, 2, 850.	9.3	50
15	Wave optical simulation of the light trapping properties of black silicon surface textures. <i>Optics Express</i> , 2016, 24, A434.	3.4	42
16	The photonic light trap—Improved light trapping in solar cells by angularly selective filters. <i>Solar Energy Materials and Solar Cells</i> , 2009, 93, 1721-1727.	6.2	41
17	Matrix formalism for light propagation and absorption in thick textured optical sheets. <i>Optics Express</i> , 2015, 23, A502.	3.4	40
18	Optical simulation of photovoltaic modules with multiple textured interfaces using the matrix-based formalism OPTOS. <i>Optics Express</i> , 2016, 24, A1083.	3.4	39

#	ARTICLE	IF	CITATIONS
19	Efficiency increase of crystalline silicon solar cells with nanoimprinted rear side gratings for enhanced light trapping. <i>Solar Energy Materials and Solar Cells</i> , 2016, 155, 288-293.	6.2	36
20	Rear side sphere gratings for improved light trapping in crystalline silicon single junction and silicon-based tandem solar cells. <i>Solar Energy Materials and Solar Cells</i> , 2015, 142, 60-65.	6.2	35
21	Increased upconversion quantum yield in photonic structures due to local field enhancement and modification of the local density of states – a simulation-based analysis. <i>Optics Express</i> , 2013, 21, A883.	3.4	32
22	The effect of photonic structures on the light guiding efficiency of fluorescent concentrators. <i>Journal of Applied Physics</i> , 2009, 105, .	2.5	30
23	Enhanced light trapping in thin-film solar cells by a directionally selective filter. <i>Optics Express</i> , 2010, 18, A133.	3.4	30
24	Hexagonal sphere gratings for enhanced light trapping in crystalline silicon solar cells. <i>Optics Express</i> , 2014, 22, A111.	3.4	30
25	Angular confinement and concentration in photovoltaic converters. <i>Solar Energy Materials and Solar Cells</i> , 2010, 94, 1393-1398.	6.2	29
26	Nanoimprint Lithography for Honeycomb Texturing of Multicrystalline Silicon. <i>Energy Procedia</i> , 2011, 8, 648-653.	1.8	28
27	Electro – optical simulation of diffraction in solar cells. <i>Optics Express</i> , 2010, 18, A584.	3.4	27
28	Honeycomb Structure on Multi-crystalline Silicon Al-BSF Solar Cell With 17.8% Efficiency. <i>IEEE Journal of Photovoltaics</i> , 2015, 5, 1027-1033.	2.5	27
29	Development of nanoimprint processes for photovoltaic applications. <i>Journal of Micro/Nanolithography, MEMS, and MOEMS</i> , 2015, 14, 031210.	0.9	27
30	Characterizing the degradation of PDMS stamps in nanoimprint lithography. <i>Microelectronic Engineering</i> , 2017, 180, 40-44.	2.4	27
31	Theoretical study of pyramid sizes and scattering effects in silicon photovoltaic module stacks. <i>Optics Express</i> , 2018, 26, A320.	3.4	26
32	Electromagnetic simulations of a photonic luminescent solar concentrator. <i>Optics Express</i> , 2012, 20, A157.	3.4	25
33	Applications for TiAlN- and TiO ₂ -coatings with nanoscale surface topographies. <i>Surface and Coatings Technology</i> , 2005, 200, 1555-1559.	4.8	24
34	Experimental validation of a modeling framework for upconversion enhancement in 1D-photonic crystals. <i>Nature Communications</i> , 2021, 12, 104.	12.8	22
35	Increasing fluorescent concentrator light collection efficiency by restricting the angular emission characteristic of the incorporated luminescent material: the 'Nano-Fluko' concept. <i>Proceedings of SPIE</i> , 2010, , .	0.8	21
36	The MorphoColor Concept for Colored Photovoltaic Modules. <i>IEEE Journal of Photovoltaics</i> , 2021, 11, 1305-1311.	2.5	21

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37	Crystalline Silicon Solar Cells with Enhanced Light Trapping via Rear Side Diffraction Grating. Energy Procedia, 2015, 77, 253-262.	1.8	20
38	Maximal power output by solar cells with angular confinement. Optics Express, 2014, 22, A715.	3.4	19
39	Photon Management Structures Originated by Interference Lithography. Energy Procedia, 2011, 8, 712-718.	1.8	18
40	Diffraction Backside Structures via Nanoimprint Lithography. Energy Procedia, 2012, 27, 337-342.	1.8	18
41	Directionally selective light trapping in a germanium solar cell. Optics Express, 2011, 19, A136.	3.4	15
42	Optoelectronic simulation of GaAs solar cells with angularly selective filters. Journal of Applied Physics, 2014, 115, .	2.5	15
43	Optical modeling of structured silicon-based tandem solar cells and module stacks. Optics Express, 2018, 26, A761.	3.4	13
44	Periodic microstructures for large area applications generated by holography. , 2001, , .		12
45	Optimization of angularly selective photonic filters for concentrator photovoltaic. Proceedings of SPIE, 2012, , .	0.8	12
46	Nanoparticle Scattering for Multijunction Solar Cells: The Tradeoff Between Absorption Enhancement and Transmission Loss. IEEE Journal of Photovoltaics, 2016, 6, 1678-1687.	2.5	12
47	Investigation of structured TiAlN- and TiO ₂ -coatings with moth-eye-like surface morphologies. Surface and Coatings Technology, 2005, 200, 1088-1092.	4.8	11
48	Nanoimprint lithography for solar cell texturisation. Proceedings of SPIE, 2010, , .	0.8	11
49	Large area plasmonic nanoparticle arrays with well-defined size and shape. Optical Materials Express, 2014, 4, 944.	3.0	11
50	Tailored disorder: a self-organized photonic contact for light trapping in silicon-based tandem solar cells. Optics Express, 2020, 28, 10909.	3.4	11
51	Realization and evaluation of diffractive systems on the back side of silicon solar cells. Proceedings of SPIE, 2010, , .	0.8	9
52	Efficiency limit and example of a photonic solar cell. Journal of Applied Physics, 2011, 110, 043104.	2.5	9
53	Photon management structures for solar cells. , 2012, , .		9
54	Replicated microstructures with optical functions in solar and display applications. , 2003, 5184, 60.		8

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55	A rigorous study of diffraction effects on the transmission of linear dielectric micro-reflector arrays. <i>Journal of Optics</i> , 2004, 6, 952-960.	1.5	8
56	Comparison between periodic and stochastic parabolic light trapping structures for thin-film microcrystalline Silicon solar cells. <i>Optics Express</i> , 2012, 20, 29488.	3.4	8
57	Optical Simulation of Silicon Thin-Film Solar Cells. <i>Energy Procedia</i> , 2012, 15, 212-219.	1.8	8
58	The Moth-Eye Effect – From Fundamentals to Commercial Exploitation. , 2009, , 79-102.		8
59	Photonic crystals in solar cells: a simulation approach. , 2010, , .		7
60	Effects of angular confinement and concentration to realistic solar cells. <i>Journal of Applied Physics</i> , 2015, 117, 034503.	2.5	7
61	Large area patterning using interference and nanoimprint lithography. <i>Proceedings of SPIE</i> , 2016, , .	0.8	7
62	Optical Modeling of Honeycomb Textures for Multicrystalline Silicon Solar Cells. <i>IEEE Journal of Photovoltaics</i> , 2016, 6, 1480-1487.	2.5	7
63	Realism and time symmetry in quantum mechanics. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1995, 207, 119-125.	2.1	6
64	Comparison of periodic and random structures for scattering in thin-film microcrystalline silicon solar cells. , 2012, , .		6
65	Novel light trapping concepts for crystalline silicon solar cells using diffractive rear side structures. <i>Proceedings of SPIE</i> , 2014, , .	0.8	6
66	Nanostructures on microstructured surfaces. <i>Microsystem Technologies</i> , 2007, 13, 483-486.	2.0	5
67	Optical performance of the honeycomb texture – a cell and module level analysis using the OPTOS formalism. <i>Solar Energy Materials and Solar Cells</i> , 2017, 173, 66-71.	6.2	5
68	Impact of Front Side Pyramid Size on the Light Trapping Performance of Wafer Based Silicon Solar Cells and Modules. , 2017, , .		5
69	Soft thermal nanoimprint of PMMA doped with upconverter nanoparticles. <i>Microelectronic Engineering</i> , 2018, 187-188, 154-159.	2.4	5
70	Optimizing metal grating back reflectors for III-V-on-silicon multijunction solar cells. <i>Optics Express</i> , 2021, 29, 22517.	3.4	5
71	Large-area patterning using interference and nanoimprint lithography. <i>SPIE Newsroom</i> , 0, , .	0.1	5
72	Broadband antireflection Mie scatterers revisited – a solar cell and module analysis. <i>Optics Express</i> , 2019, 27, A524.	3.4	5

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73	Light trapping gratings for solar cells: an analytical period optimization approach. Optics Express, 2022, 30, 24762.	3.4	5
74	The photonic solar cell: system design and efficiency estimations. , 2014, , .		4
75	Field stitching approach for the wave optical modeling of black silicon structures. Optics Express, 2018, 26, A937.	3.4	4
76	Photonic structures for III-V//Si multijunction solar cells with efficiency >33%. , 2018, , .		4
77	Maskless origination of microstructures with optical functions on large areas. , 2005, 5751, 1003.		3
78	Widely Tunable Micro-Mechanical External-Cavity Diode Laser Emitting Around 2.1 μm . IEEE Journal of Quantum Electronics, 2008, 44, 1071-1075.	1.9	3
79	Design of photonic structures for the enhancement of the light guiding efficiency of fluorescent concentrators. , 2008, , .		3
80	Light scattering at random pyramid textures: Effects beyond geometric optics. AIP Conference Proceedings, 2018, , .	0.4	3
81	Impact of Irradiance Data on the Energy Yield Modeling of Dual-Junction Solar Module Stacks for One-Sun Applications. IEEE Journal of Photovoltaics, 2021, 11, 692-698.	2.5	3
82	Coloured Module Glass for BIPV inspired by Morpho Butterfly. , 2016, , .		3
83	Modeling the optical properties of Morpho-inspired thin-film interference filters on structured surfaces. Optics Express, 2022, 30, 14586.	3.4	3
84	Large-area origination and replication of microstructures with optical functions. , 2004, , .		2
85	Study of plasmonic nanoparticle arrays for photon management in solar cells. , 2014, , .		2
86	Impact of the refractive index on coupling structures for silicon solar cells. Journal of Photonics for Energy, 2021, 11, .	1.3	2
87	Advanced module optics of textured perovskite silicon tandem solar cells. , 2018, , .		2
88	Functional substrates for flexible organic photovoltaic cells. , 2005, 5938, 593802.		1
89	Rigorous validation of the lateral Goos-Hänchen shift in microstructured sun shading systems. , 2006, , .		1
90	Microstructured Polymer Surfaces with Complex Optical Functions for Solar Applications. Handbook of Environmental Chemistry, 2009, , 263-279.	0.4	1

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91	Enhanced light trapping in thin amorphous silicon solar cells by directionally selective optical filters. , 2010, , .		1
92	Towards photonic luminescent solar concentrators. Proceedings of SPIE, 2011, , .	0.8	1
93	Advanced Modelling of Silicon Wafer Solar Cells. Japanese Journal of Applied Physics, 2012, 51, 10NA06.	1.5	1
94	Increasing upconversion by metal and dielectric nanostructures. Proceedings of SPIE, 2012, , .	0.8	1
95	Effects of photonic structures on upconversion. , 2012, , .		1
96	Optical properties of textured sheets: an efficient matrix-based modelling approach. Proceedings of SPIE, 2015, , .	0.8	1
97	Rear side gratings for silicon solar cells: efficiency enhancement finally demonstrated. Proceedings of SPIE, 2016, , .	0.8	1
98	Measurement of the Spatial Uniformity of a Large Field Microstructured Retarder. , 2006, , .		0
99	Preparation of periodically arranged metallic nanostructures using nanoimprint lithography. Proceedings of SPIE, 2012, , .	0.8	0
100	Nano-imprinted rear-side diffraction gratings for absorption enhancement in solar cells. Proceedings of SPIE, 2012, , .	0.8	0
101	Photonic structures for enhanced upconversion. , 2013, , .		0
102	Development of NIL processes for PV applications. Proceedings of SPIE, 2015, , .	0.8	0
103	Efficient optical analysis of surface texture combinations for silicon solar cells. , 2016, , .		0
104	Nanoparticle scattering for multijunction solar cells. Proceedings of SPIE, 2016, , .	0.8	0
105	Interference and nanoimprint lithography for the patterning of large areas. , 2017, , .		0
106	GaAs solar cells close to the thermodynamic limit. , 2013, , .		0
107	Diffraction Gratings for Light Trapping in Crystalline Silicon Solar Cells. , 2015, , .		0
108	Monolithic Perovskite Silicon Tandem Solar Cells with Advanced Optics. , 2016, , .		0

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109	Nanoimprinted sol-gel materials for antireflective structures on silicon solar cells. , 2018, , .		0
110	Upconversion performance enhancement in real 1D photonic crystals: simulation, experiment and perspectives for photovoltaics. , 2019, , .		0
111	Coupling Structures on the Front of the Cell: Which Refrac-tive Index is Needed for Good Light Trapping?. , 2020, , .		0
112	Modeling and realization of photonic structures for silicon-based tandem solar cells. , 2020, , .		0