

Martin Foldyna

List of Publications by Year in descending order

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126
papers

1,797
citations

257357

24
h-index

315616

38
g-index

129
all docs

129
docs citations

129
times ranked

2169
citing authors

#	ARTICLE	IF	CITATIONS
1	Low-cost high-efficiency system for solar-driven conversion of CO ₂ to hydrocarbons. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 9735-9740.	3.3	126
2	High efficiency and stable hydrogenated amorphous silicon radial junction solar cells built on VLS-grown silicon nanowires. Solar Energy Materials and Solar Cells, 2013, 118, 90-95.	3.0	107
3	Ultrathin Epitaxial Silicon Solar Cells with Inverted Nanopyramid Arrays for Efficient Light Trapping. Nano Letters, 2016, 16, 5358-5364.	4.5	78
4	Bismuth-Catalyzed and Doped Silicon Nanowires for One-Pump-Down Fabrication of Radial Junction Solar Cells. Nano Letters, 2012, 12, 4153-4158.	4.5	76
5	A review on plasma-assisted VLS synthesis of silicon nanowires and radial junction solar cells. Journal Physics D: Applied Physics, 2014, 47, 393001.	1.3	73
6	Flexible Photodiodes Based on Nitride Core/Shell p-n Junction Nanowires. ACS Applied Materials & Interfaces, 2016, 8, 26198-26206.	4.0	66
7	Photonic nanostructures for advanced light trapping in thin crystalline silicon solar cells. Physica Status Solidi (A) Applications and Materials Science, 2015, 212, 140-155.	0.8	57
8	Silicon nanowire solar cells grown by PECVD. Journal of Non-Crystalline Solids, 2012, 358, 2299-2302.	1.5	47
9	Understanding Light Harvesting in Radial Junction Amorphous Silicon Thin Film Solar Cells. Scientific Reports, 2015, 4, 4357.	1.6	44
10	Angle-resolved Mueller polarimeter using a microscope objective. Physica Status Solidi (A) Applications and Materials Science, 2008, 205, 743-747.	0.8	42
11	Radial junction amorphous silicon solar cells on PECVD-grown silicon nanowires. Nanotechnology, 2012, 23, 194011.	1.3	42
12	Investigation of Photovoltaic Properties of Single Core-Shell GaN/InGaN Wires. ACS Applied Materials & Interfaces, 2015, 7, 21898-21906.	4.0	39
13	New Approaches to Improve the Performance of Thin-Film Radial Junction Solar Cells Built Over Silicon Nanowire Arrays. IEEE Journal of Photovoltaics, 2015, 5, 40-45.	1.5	35
14	Overlay measurements by Mueller polarimetry in back focal plane. Journal of Micro/ Nanolithography, MEMS, and MOEMS, 2011, 10, 033017.	1.0	34
15	Natural occurrence of the diamond hexagonal structure in silicon nanowires grown by a plasma-assisted vapour-liquid-solid method. Nanoscale, 2017, 9, 8113-8118.	2.8	34
16	Characterization of inclined GaSb nanopillars by Mueller matrix ellipsometry. Journal of Applied Physics, 2010, 108, .	1.1	33
17	Theoretical short-circuit current density for different geometries and organizations of silicon nanowires in solar cells. Solar Energy Materials and Solar Cells, 2013, 117, 645-651.	3.0	33
18	Ultrathin PECVD epitaxial Si solar cells on glass via low-temperature transfer process. Progress in Photovoltaics: Research and Applications, 2016, 24, 1075-1084.	4.4	32

#	ARTICLE	IF	CITATIONS
19	Core-Shell Heterojunction Solar Cells Based on Disordered Silicon Nanowire Arrays. Journal of Physical Chemistry C, 2016, 120, 2962-2972.	1.5	32
20	Characterization of grating structures by Mueller polarimetry in presence of strong depolarization due to finite spot size. Optics Communications, 2009, 282, 735-741.	1.0	31
21	Critical dimension of biperiodic gratings determined by spectral ellipsometry and Mueller matrix polarimetry. EPJ Applied Physics, 2008, 42, 351-359.	0.3	30
22	Advanced Mueller Ellipsometry Instrumentation and Data Analysis. , 2013, , 31-143.		30
23	Plasma-Assisted Growth of Silicon Nanowires by Sn Catalyst: Step-by-Step Observation. Nanoscale Research Letters, 2016, 11, 455.	3.1	29
24	Retrieval of a non-depolarizing component of experimentally determined depolarizing Mueller matrices. Optics Express, 2009, 17, 12794.	1.7	28
25	Experimental evidence for naturally occurring nondiagonal depolarizers. Optics Letters, 2009, 34, 2426.	1.7	25
26	Optical properties and performance of pyramidal texture silicon heterojunction solar cells: Key role of vertex angles. Progress in Photovoltaics: Research and Applications, 2018, 26, 369-376.	4.4	24
27	Assessing individual radial junction solar cells over millions on VLS-grown silicon nanowires. Nanotechnology, 2013, 24, 275401.	1.3	23
28	Real-time in situ Mueller matrix ellipsometry of GaSb nanopillars: observation of anisotropic local alignment. Optics Express, 2011, 19, 12551.	1.7	20
29	Detection of second malignancies during long-term follow-up of testicular cancer survivors. Cancer, 2011, 117, 4212-4218.	2.0	19
30	Enhanced sensitivity to dielectric function and thickness of absorbing thin films by combining total internal reflection ellipsometry with standard ellipsometry and reflectometry. Journal Physics D: Applied Physics, 2013, 46, 105501.	1.3	18
31	Sum decomposition of Mueller-matrix images and spectra of beetle cuticles. Optics Express, 2015, 23, 1951.	1.7	18
32	Lifetime assessment in crystalline silicon: From nanopatterned wafer to ultra-thin crystalline films for solar cells. Solar Energy Materials and Solar Cells, 2015, 135, 93-98.	3.0	18
33	Cross-Sectional Investigations on Epitaxial Silicon Solar Cells by Kelvin and Conducting Probe Atomic Force Microscopy: Effect of Illumination. Nanoscale Research Letters, 2016, 11, 55.	3.1	17
34	ALD of ZnO:Ti: Growth Mechanism and Application as an Efficient Transparent Conductive Oxide in Silicon Nanowire Solar Cells. ACS Applied Materials & Interfaces, 2020, 12, 21036-21044.	4.0	17
35	Model dielectric functional of amorphous materials including Urbach tail. , 2004, , .		16
36	Tuning the properties of F:SnO ₂ (FTO) nanocomposites with S:TiO ₂ nanoparticles – promising hazy transparent electrodes for photovoltaics applications. Journal of Materials Chemistry C, 2017, 5, 91-102.	2.7	15

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37	Effective medium approximation of anisotropic lamellar nanogratings based on Fourier factorization. <i>Optics Express</i> , 2006, 14, 3114.	1.7	14
38	Mueller polarimetry in the back focal plane. , 2007, 6518, 326.		14
39	Comprehensive analyses of core-shell InGaN/GaN single nanowire photodiodes. <i>Journal Physics D: Applied Physics</i> , 2017, 50, 484001.	1.3	14
40	Large Area Radial Junction Silicon Nanowire Solar Mini-Modules. <i>Scientific Reports</i> , 2018, 8, 1651.	1.6	14
41	Application of the arbitrary decomposition to finite spot size Mueller matrix measurements. <i>Applied Optics</i> , 2014, 53, 6030.	0.9	13
42	Detailed analysis of III-V/epi-SiGe tandem solar cell performance including light trapping schemes. <i>Solar Energy Materials and Solar Cells</i> , 2017, 166, 276-285.	3.0	13
43	Polarimetric characterization of optically anisotropic flexible substrates. <i>Thin Solid Films</i> , 2008, 516, 1414-1418.	0.8	12
44	Generalized ellipsometry of artificially designed line width roughness. <i>Thin Solid Films</i> , 2011, 519, 2633-2636.	0.8	12
45	Microscopic measurements of variations in local (photo)electronic properties in nanostructured solar cells. <i>Solar Energy Materials and Solar Cells</i> , 2013, 119, 228-234.	3.0	11
46	Correlative microscopy of radial junction nanowire solar cells using nanoindent position markers. <i>Solar Energy Materials and Solar Cells</i> , 2015, 135, 106-112.	3.0	11
47	Optimization and optical characterization of vertical nanowire arrays for core-shell structure solar cells. <i>Solar Energy Materials and Solar Cells</i> , 2017, 159, 640-648.	3.0	10
48	In-situ Mueller matrix ellipsometry of silicon nanowires grown by plasma-enhanced vapor-liquid-solid method for radial junction solar cells. <i>Applied Surface Science</i> , 2017, 421, 667-673.	3.1	10
49	Toward Efficient Radial Junction Silicon Nanowire-Based Solar Mini-Modules. <i>Physica Status Solidi - Rapid Research Letters</i> , 2019, 13, 1800402.	1.2	10
50	Magneto-optic vector magnetometry of CoFeCrSiB amorphous ribbons. <i>Journal of Applied Physics</i> , 2006, 99, 08F107.	1.1	9
51	High structural quality InGaN/GaN multiple quantum well solar cells. <i>Physica Status Solidi C: Current Topics in Solid State Physics</i> , 2015, 12, 1412-1415.	0.8	9
52	Electron beam induced current microscopy investigation of GaN nanowire arrays grown on Si substrates. <i>Materials Science in Semiconductor Processing</i> , 2016, 55, 72-78.	1.9	9
53	Structural study of NiOx thin films fabricated by radio frequency sputtering at low temperature. <i>Thin Solid Films</i> , 2018, 646, 209-215.	0.8	9
54	Colour optimization of phosphor-converted flexible nitride nanowire white light emitting diodes. <i>JPhys Photonics</i> , 2019, 1, 035003.	2.2	9

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55	Liquid-Assisted Vapor-Solid Silicon Nanowire Growth Mechanism Revealed by <i>In Situ</i> TEM When Using Cu-Sn Bimetallic Catalysts. <i>Journal of Physical Chemistry C</i> , 2021, 125, 19773-19779.	1.5	9
56	Modeling of magneto-optical properties of lamellar nanogratings. <i>Journal of Alloys and Compounds</i> , 2007, 434-435, 581-583.	2.8	8
57	Comparison of spectroscopic Mueller polarimetry, standard scatterometry, and real space imaging techniques (SEM and 3D-AFM) for dimensional characterization of periodic structures. <i>Proceedings of SPIE</i> , 2008, , .	0.8	8
58	Optical absorption in vertical silicon nanowires for solar cell applications. <i>Proceedings of SPIE</i> , 2011, , .	0.8	8
59	Performance Analysis of Al _x Ga _{1-x} As/epi-Si(Ge) Tandem Solar Cells: A Simulation Study. <i>Energy Procedia</i> , 2015, 84, 41-46.	1.8	8
60	Nanophotonics-based low-temperature PECVD epitaxial crystalline silicon solar cells. <i>Journal Physics D: Applied Physics</i> , 2016, 49, 125603.	1.3	8
61	Precise phase-modulation generalized ellipsometry of anisotropic samples. <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2008, 205, 752-755.	0.8	7
62	In-situ spectroscopic ellipsometry of microcrystalline silicon deposited by plasma-enhanced chemical vapor deposition on flexible Fe-Ni alloy substrate for photovoltaic applications. <i>Thin Solid Films</i> , 2014, 571, 749-755.	0.8	7
63	Investigating inhomogeneous electronic properties of radial junction solar cells using correlative microscopy. <i>Japanese Journal of Applied Physics</i> , 2015, 54, 08KA08.	0.8	7
64	Surface potential investigation on interdigitated back contact solar cells by Scanning Electron Microscopy and Kelvin Probe Force Microscopy: Effect of electrical bias. <i>Solar Energy Materials and Solar Cells</i> , 2017, 161, 263-269.	3.0	7
65	Magnetic and magneto-optical properties of CoFeCrSiB amorphous ribbons. <i>Journal of Magnetism and Magnetic Materials</i> , 2006, 304, e534-e536.	1.0	6
66	Optical Modeling of Microcrystalline Silicon Deposited by Plasma-Enhanced Chemical Vapor Deposition on Low-Cost Iron-Nickel Substrates for Photovoltaic Applications. , 2016, 12, 130-135.		6
67	Plasma nanotexturing of silicon surfaces for photovoltaics applications: influence of initial surface finish on the evolution of topographical and optical properties. <i>Optics Express</i> , 2017, 25, A1057.	1.7	6
68	Nanostructured back reflectors produced using polystyrene assisted lithography for enhanced light trapping in silicon thin film solar cells. <i>Solar Energy</i> , 2018, 167, 108-115.	2.9	6
69	Monitoring critical dimensions of bidimensional gratings by spectroscopic ellipsometry and Mueller polarimetry. <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2008, 205, 806-809.	0.8	5
70	Scattered light measurements on textured crystalline silicon substrates using an angle-resolved Mueller matrix polarimeter. <i>Applied Optics</i> , 2010, 49, 505.	2.1	5
71	Excellent Surface Passivation and Light Absorption in Crystalline Si via Low-Temperature Si Nanowire Growth. <i>IEEE Journal of Photovoltaics</i> , 2016, 6, 823-829.	1.5	5
72	Modeling of magneto-optical properties of periodic nanostructures. <i>Journal of Magnetism and Magnetic Materials</i> , 2005, 290-291, 120-123.	1.0	4

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73	Numerical study on the spectroscopic ellipsometry of lamellar gratings made of lossless dielectric materials. <i>Journal of the Optical Society of America A: Optics and Image Science, and Vision</i> , 2005, 22, 745.	0.8	4
74	Accurate dimensional characterization of periodic structures by spectroscopic Mueller polarimetry. <i>Proceedings of SPIE</i> , 2008, , .	0.8	4
75	Mueller matrix ellipsometry of artificial non-periodic line edge roughness in presence of finite numerical aperture. , 2011, , .		4
76	Nanoscale Investigation of Carrier Lifetime on the Cross Section of Epitaxial Silicon Solar Cells Using Kelvin Probe Force Microscopy. <i>IEEE Journal of Photovoltaics</i> , 2016, 6, 1576-1580.	1.5	4
77	Improvement of carrier collection in Si/a-Si:H nanowire solar cells by using hybrid ITO/silver nanowires contacts. <i>Nanotechnology</i> , 2020, 31, 435408.	1.3	4
78	High Density of Quantum-Sized Silicon Nanowires with Different Polytypes Grown with Bimetallic Catalysts. <i>ACS Omega</i> , 2021, 6, 26381-26390.	1.6	4
79	Using nanowires to enhance light trapping in solar cells. <i>SPIE Newsroom</i> , 0, , .	0.1	4
80	Magnetic sensor with prism coupler. <i>Sensors and Actuators A: Physical</i> , 2004, 110, 87-92.	2.0	3
81	Tin dioxide nanoparticles as catalyst precursors for plasma-assisted vaporâ€“liquidâ€“solid growth of silicon nanowires with well-controlled density. <i>Nanotechnology</i> , 2018, 29, 435301.	1.3	3
82	Room temperature growth of silica nanowires on top of ultrathin Si nanowires synthesized with Snâ€“Cu bimetallic seeds. <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2021, 218, 2100409.	0.8	3
83	Effective spectral optical functions of lamellar nanogratings. <i>Journal of the European Optical Society-Rapid Publications</i> , 2006, 1, .	0.9	2
84	Light trapping enhancement in ordered and disordered silicon nanowire based solar cells. <i>Proceedings of SPIE</i> , 2013, , .	0.8	2
85	A Solar Cell Architecture for Enhancing Performance While Reducing Absorber Thickness and Back Contact Requirements. <i>IEEE Journal of Photovoltaics</i> , 2017, 7, 974-979.	1.5	2
86	Comments on â€œNanoscale Investigation of Carrier Lifetime on the Cross Section of Epitaxial Silicon Solar Cells Using Kelvin Probe Force Microscopyâ€• <i>IEEE Journal of Photovoltaics</i> , 2018, 8, 661-663.	1.5	2
87	In situ spectroscopic ellipsometry study of low-temperature epitaxial silicon growth. <i>Photonics and Nanostructures - Fundamentals and Applications</i> , 2018, 30, 73-77.	1.0	2
88	Optical Study and Experimental Realization of Nanostructured Back Reflectors with Reduced Parasitic Losses for Silicon Thin Film Solar Cells. <i>Nanomaterials</i> , 2018, 8, 626.	1.9	2
89	Visualizing the effects of plasma-generated H atoms <i>in situ</i> in a transmission electron microscope. <i>EPJ Applied Physics</i> , 2022, 97, 7.	0.3	2
90	Magneto-optical phenomena in systems with prism coupling. , 2003, 5036, 299.		1

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91	<title>Reconstruction of grating parameters from ellipsometric data</title>. , 2004, , .		1
92	<title>Multilevel solvers for three-dimensional optimal shape design with an application to magneto-optics</title>. , 2004, , .		1
93	<title>Total internal reflection ellipsometry of periodic structures</title>. , 2006, 6180, 297.		1
94	Characterization of inhomogeneous samples by spectroscopic Mueller polarimetry. , 2008, , .		1
95	Robust characterization of small grating boxes using rotating stage Mueller matrix polarimeter. , 2010, , .		1
96	Stability of polarimetric grating characterization with beam spot larger than grating box. Proceedings of SPIE, 2010, , .	0.8	1
97	Profile characterization of diffraction gratings using angle-resolved polarimetric measurements. EPJ Web of Conferences, 2010, 5, 02003.	0.1	1
98	Radial Junction Architecture: A New Approach to Stable and Highly Efficient Silicon Thin Film Solar Cells. Materials Research Society Symposia Proceedings, 2015, 1770, 73-78.	0.1	1
99	InGaN/GaN nanowire flexible light emitting diodes and photodetectors. , 2017, , .		1
100	Molecular Beam Epitaxy of Germanium in the Atomic-Resolution Transmission Electron Microscope. Microscopy and Microanalysis, 2019, 25, 47-48.	0.2	1
101	Silicon Nanowire Solar Cells with $\frac{1}{4}\lambda$ Si:H Absorbers for Radial Junction Devices. Physica Status Solidi (A) Applications and Materials Science, 2021, 218, 2100231.	0.8	1
102	Tin reduction from fluorine doped tin oxide for silicon nanowire-based solar energy harvesting and storage. Optics Express, 2021, 29, 31465.	1.7	1
103	Plasma-Enhanced Chemical Vapor Deposition in a Transmission Electron Microscope?. Microscopy and Microanalysis, 2021, 27, 25-26.	0.2	1
104	Triple Radial Junction Hydrogenated Amorphous Silicon Solar Cells with $>2\%$ Open-Circuit Voltage. Solar Rrl, 0, , 2200248.	3.1	1
105	Magneto-optics of systems containing noncoherent propagation in thick layers. , 2003, , .		0
106	Simulation of spectroscopic ellipsometry for dielectric lamellar gratings. , 2004, , .		0
107	Influence of component imperfection on null ellipsometry with phase modulation. , 2005, , .		0
108	<title>Optics of nanogratings</title>. Proceedings of SPIE, 2007, , .	0.8	0

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109	Photonic band measurement by angle-resolved spectroscopy and polarimetry. , 2009, , .		0
110	Characterization of inclined GaSb nanopillars by angle resolved Mueller polarimetry. EPJ Web of Conferences, 2010, 5, 04004.	0.1	0
111	7170 POSTER Modifiable Obstacles to Early Treatment of Testicular Germ Cell Tumours. European Journal of Cancer, 2011, 47, S526.	1.3	0
112	Overlay measurements by Mueller polarimetry in the back focal plane. , 2011, , .		0
113	Effects of Roughness on Scatterometry Signatures. AIP Conference Proceedings, 2011, , .	0.3	0
114	Crystalline composition of silicon deposited on a low-cost substrate for photovoltaic applications studied by in-situ spectroscopic ellipsometry. , 2014, , .		0
115	Ultrathin nanostructured c-Si solar cells by low temperature and scalable processes. , 2015, , .		0
116	Interdigitated back contact silicon solar cells: Diode and resistance investigation at nanoscale using Kelvin Probe Force Microscopy. , 2016, , .		0
117	Mueller matrix bidirectional reflectance distribution function measurements and modeling of textured silicon surfaces. Proceedings of SPIE, 2016, , .	0.8	0
118	Modeling of Mueller Matrix Response from Diffracting Structures. Journal of Nanoscience and Nanotechnology, 2016, 16, 7805-7809.	0.9	0
119	First Demonstration of Radial Junction Silicon Nanowire Solar Mini-Modules Prepared by PECVD and Laser Scribing. , 2017, , .		0
120	Notice of Removal Nanoscale investigation of carrier lifetime on the cross-section of epitaxial silicon solar cells using Kelvin probe force microscopy. , 2017, , .		0
121	Inverse Metamorphic III-V/epi-SiGe Tandem Solar Cell Performance Assessed by Optical and Electrical Modeling. , 2017, , .		0
122	Optimization of the optical coupling in nanowire-based integrated photonic platforms by FDTD simulation. Beilstein Journal of Nanotechnology, 2018, 9, 2248-2254.	1.5	0
123	Radial Junction Silicon Nanowire Solar Mini-Modules Grown on FTO/Glass Substrates. , 2021, , .		0
124	Individual Treatment with Stem Cell Rescue in Patients with Germ-Cell Tumors. Results of One Centrum.. Blood, 2006, 108, 5429-5429.	0.6	0
125	Building radial junction thin-film solar cells on silicon nanowires. SPIE Newsroom, 0, , .	0.1	0
126	Tapering-free monocrystalline Ge nanowires synthesized via plasma-assisted VLS using In and Sn catalysts. Nanotechnology, 2022, , .	1.3	0