Zhenhai Yang

List of Publications by Year
in descending order

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88 papers	2,866 citations	159358 30 h-index	197535 49 g-index
88 all docs	88 docs citations	88 times ranked	3049 citing authors

#	Article	IF	Citations
1	Large-Area Nanosphere Self-Assembly by a Micro-Propulsive Injection Method for High Throughput Periodic Surface Nanotexturing. Nano Letters, 2015, 15, 4591-4598.	4.5	191
2	Silicon/Organic Hybrid Solar Cells with 16.2% Efficiency and Improved Stability by Formation of Conformal Heterojunction Coating and Moistureâ€Resistant Capping Layer. Advanced Materials, 2017, 29, 1606321.	11.1	126
3	Realization of 13.6% Efficiency on 20 Î¼m Thick Si/Organic Hybrid Heterojunction Solar Cells via Advanced Nanotexturing and Surface Recombination Suppression. ACS Nano, 2015, 9, 6522-6531.	7.3	124
4	Single-crystalline TiO2 nanoparticles for stable and efficient perovskite modules. Nature Nanotechnology, 2022, 17, 598-605.	15.6	121
5	Dopantâ€Free and Carrierâ€Selective Heterocontacts for Silicon Solar Cells: Recent Advances and Perspectives. Advanced Science, 2018, 5, 1700547.	5.6	96
6	High-Efficiency Silicon/Organic Heterojunction Solar Cells with Improved Junction Quality and Interface Passivation. ACS Nano, 2016, 10, 11525-11531.	7.3	80
7	Adsorption and co-adsorption of graphene oxide and Ni(II) on iron oxides: A spectroscopic and microscopic investigation. Environmental Pollution, 2018, 233, 125-131.	3.7	79
8	Carrier transport through the ultrathin silicon-oxide layer in tunnel oxide passivated contact (TOPCon) c-Si solar cells. Solar Energy Materials and Solar Cells, 2018, 187, 113-122.	3.0	76
9	Enhanced Electroâ€Optical Properties of Nanocone/Nanopillar Dualâ€Structured Arrays for Ultrathin Silicon/Organic Hybrid Solar Cell Applications. Advanced Energy Materials, 2016, 6, 1501793.	10.2	75
10	Tuning of the Contact Properties for High-Efficiency Si/PEDOT:PSS Heterojunction Solar Cells. ACS Energy Letters, 2017, 2, 556-562.	8.8	75
11	Heterojunction solar cells with asymmetrically carrier-selective contact structure of molybdenum-oxide/silicon/magnesium-oxide. Solar Energy, 2018, 159, 704-709.	2.9	75
12	Macroscopic and spectroscopic studies of the enhanced scavenging of Cr(VI) and Se(VI) from water by titanate nanotube anchored nanoscale zero-valent iron. Journal of Hazardous Materials, 2017, 336, 214-221.	6.5	73
13	Rambutanâ€like hollow carbon spheres decorated with vacancyâ€rich nickel oxide for energy conversion and storage. , 2020, 2, 122-130.		68
14	Stabilizing Î³â€CsPbI₃ Perovskite via Phenylethylammonium for Efficient Solar Cells with Openâ€Circuit Voltage over 1.3ÂV. Small, 2020, 16, e2005246.	5.2	67
15	Engineering of hole-selective contact for high-performance perovskite solar cell featuring silver back-electrode. Journal of Materials Science, 2019, 54, 7789-7797.	1.7	60
16	Optimizing ultrathin Ag films for high performance oxide-metal-oxide flexible transparent electrodes through surface energy modulation and template-stripping procedures. Scientific Reports, 2017, 7, 44576.	1.6	59
17	Over 16.7% Efficiency Organicâ€Silicon Heterojunction Solar Cells with Solutionâ€Processed Dopantâ€Free Contacts for Both Polarities. Advanced Functional Materials, 2018, 28, 1802192.	7.8	58
18	Device physics of back-contact perovskite solar cells. Energy and Environmental Science, 2020, 13, 1753-1765.	15.6	58

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19	NiO_xâ€Seeded Selfâ€Assembled Monolayers as Highly Holeâ€Selective Passivating Contacts for Efficient Inverted Perovskite Solar Cells. Solar Rrl, 2021, 5, 2100663.	3.1	53
20	Ultrathin silicon oxide prepared by in-line plasma-assisted N2O oxidation (PANO) and the application for n-type polysilicon passivated contact. Solar Energy Materials and Solar Cells, 2020, 208, 110389.	3.0	51
21	Dual Functional Electronâ€Selective Contacts Based on Silicon Oxide/Magnesium: Tailoring Heterointerface Band Structures while Maintaining Surface Passivation. Advanced Energy Materials, 2018, 8, 1702921.	10.2	48
22	Efficient light trapping in low aspect-ratio honeycomb nanobowl surface texturing for crystalline silicon solar cell applications. Applied Physics Letters, 2013, 103, .	1.5	43
23	SnO2 surface defects tuned by (NH4)2S for high-efficiency perovskite solar cells. Solar Energy, 2019, 194, 541-547.	2.9	43
24	Highly efficient non-fullerene polymer solar cells enabled by novel non-conjugated small-molecule cathode interlayers. Journal of Materials Chemistry A, 2018, 6, 6327-6334.	5.2	42
25	An Expanded Cox and Strack Method for Precise Extraction of Specific Contact Resistance of Transition Metal Oxide/n-Silicon Heterojunction. IEEE Journal of Photovoltaics, 2019, 9, 1113-1120.	1.5	42
26	Tunable THz Multiband Frequency-Selective Surface Based on Hybrid Metalâ€“Graphene Structures. IEEE Nanotechnology Magazine, 2017, 16, 1132-1137.	1.1	41
27	Scattering effect of the high-index dielectric nanospheres for high performance hydrogenated amorphous silicon thin-film solar cells. Scientific Reports, 2016, 6, 30503.	1.6	36
28	Ideal rear contact formed via employing a conjugated polymer for Si/PEDOT:PSS hybrid solar cells. RSC Advances, 2016, 6, 16010-16017.	1.7	35
29	UV-Raman scattering of thin film Si with ultrathin silicon oxide tunnel contact for high efficiency crystal silicon solar cells. Solar Energy Materials and Solar Cells, 2019, 192, 154-160.	3.0	34
30	Improvement of Surface Passivation of Tunnel Oxide Passivated Contact Structure by Thermal Annealing in Mixture of Water Vapor and Nitrogen Environment. Solar Rrl, 2019, 3, 1900105.	3.1	33
31	Heterojunction Hybrid Solar Cells by Formation of Conformal Contacts between PEDOT:PSS and Periodic Silicon Nanopyramid Arrays. Small, 2018, 14, e1704493.	5.2	32
32	High-efficiency photon capturing in ultrathin silicon solar cells with front nanobowl texture and truncated-nanopyramid reflector. Optics Letters, 2015, 40, 1077.	1.7	31
33	A low-temperature TiO2/SnO2 electron transport layer for high-performance planar perovskite solar cells. Science China Materials, 2020, 63, 207-215.	3.5	31
34	Dual-functional carbon-doped polysilicon films for passivating contact solar cells: regulating physical contacts while promoting photoelectrical properties. Energy and Environmental Science, 2021, 14, 6406-6418.	15.6	31
35	Unlocking Voltage Potentials of Mixedâ€Halide Perovskite Solar Cells via Phase Segregation Suppression. Advanced Functional Materials, 2022, 32, 2110698.	7.8	30
36	Fully Coupled Multiphysics Simulation of Crosstalk Effect in Bipolar Resistive Random Access Memory. IEEE Transactions on Electron Devices, 2017, 64, 3647-3653.	1.6	29

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37	Optical design and optimization for back-contact perovskite solar cells. Solar Energy, 2020, 201, 84-91.	2.9	29
38	Comparison of different types of interfacial oxides on hole-selective p+-poly-Si passivated contacts for high-efficiency c-Si solar cells. Solar Energy Materials and Solar Cells, 2020, 210, 110487.	3.0	29
39	Hole selective materials and device structures of heterojunction solar cells: Recent assessment and future trends. APL Materials, 2019, 7, .	2.2	27
40	Omnidirectional absorption enhancement of symmetry-broken crescent-deformed single-nanowire photovoltaic cells. Nano Energy, 2015, 13, 9-17.	8.2	26
41	Broadband and wide-angle light harvesting by ultra-thin silicon solar cells with partially embedded dielectric spheres. Optics Letters, 2016, 41, 1329.	1.7	26
42	Excellent Passivation of Silicon Surfaces by Thin Films of Electron-Beam-Processed Titanium Dioxide. IEEE Journal of Photovoltaics, 2017, 7, 1551-1555.	1.5	24
43	Achieving a Record Fill Factor for Siliconâ€“Organic Hybrid Heterojunction Solar Cells by Using a Fullâ€Area Metal Polymer Nanocomposite Top Electrode. Advanced Functional Materials, 2018, 28, 1705425.	7.8	24
44	Optoelectronic Evaluation and Loss Analysis of PEDOT:PSS/Si Hybrid Heterojunction Solar Cells. Nanoscale Research Letters, 2017, 12, 26.	3.1	22
45	Realization of interdigitated back contact silicon solar cells by using dopant-free heterocontacts for both polarities. Nano Energy, 2018, 50, 777-784.	8.2	22
46	Opto-electric investigation for Si/organic heterojunction single-nanowire solar cells. Scientific Reports, 2017, 7, 14575.	1.6	21
47	Study on High-Density Integration Resistive Random Access Memory Array From Multiphysics Perspective by Parallel Computing. IEEE Transactions on Electron Devices, 2019, 66, 1747-1753.	1.6	21
48	High-Performance Black Multicrystalline Silicon Solar Cells by a Highly Simplified Metal-Catalyzed Chemical Etching Method. IEEE Journal of Photovoltaics, 2016, 6, 888-893.	1.5	20
49	Double-Layered PEDOT:PSS Films Inducing Strong Inversion Layers in Organic/Silicon Hybrid Heterojunction Solar Cells. ACS Applied Energy Materials, 2018, 1, 2874-2881.	2.5	20
50	In-situ phosphorus-doped polysilicon prepared using rapid-thermal anneal (RTA) and its application for polysilicon passivated-contact solar cells. Solar Energy Materials and Solar Cells, 2020, 210, 110518.	3.0	19
51	TiO₂ Films from the Lowâ€Temperature Oxidation of Ti as Passivatingâ€Contact Layers for Si Heterojunction Solar Cells. Solar Rrl, 2017, 1, 1700154.	3.1	18
52	High Performance Dyeâ€Sensitized Solar Cells with Enhanced Lightâ€Harvesting Efficiency Based on Polyvinylpyrrolidoneâ€Coated Auâ€“TiO₂ Microspheres. ChemSusChem, 2016, 9, 720-727.	3.6	15
53	Si/PEDOT:PSS Hybrid Solar Cells with Advanced Antireflection and Back Surface Field Designs. Nanoscale Research Letters, 2016, 11, 356.	3.1	15
54	Electronâ€Selective Scandiumâ€Tunnel Oxide Passivated Contact for nâ€Type Silicon Solar Cells. Solar Rrl, 2018, 2, 1800071.	3.1	15

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55	Photoinduced Field-Effect Passivation from Negative Carrier Accumulation for High-Efficiency Silicon/Organic Heterojunction Solar Cells. ACS Nano, 2017, 11, 12687-12695.	7.3	13
56	Passivating Contact with Phosphorusâ€Doped Polycrystalline Siliconâ€Nitride with an Excellent Implied Openâ€Circuit Voltage of 745â€‰mV and Its Application in 23.88% Efficiency TOPCon Solar Cells. Solar Rrl, 2021, 5, 2100644.	3.1	13
57	Enhanced Photoelectrical Response of Hydrogenated Amorphous Silicon Single-Nanowire Solar Cells by Front-Opening Crescent Design. Nanoscale Research Letters, 2016, 11, 233.	3.1	12
58	Polarity Control of GaN and Realization of GaN Schottky Barrier Diode Based on Lateral Polarity Structure. IEEE Transactions on Electron Devices, 2017, 64, 4424-4429.	1.6	12
59	Enhanced perovskite crystallization by the polyvinylpyrrolidone additive for high efficiency solar cells. Sustainable Energy and Fuels, 2019, 3, 3448-3454.	2.5	12
60	Impact of key geochemical parameters on the attenuation of Pb(II) from water using a novel magnetic nanocomposite: fulvic acid-coated magnetite nanoparticles. Desalination and Water Treatment, 2016, 57, 26063-26072.	1.0	11
61	Hard mask processing of 20% efficiency back-contacted silicon solar cells with dopant-free heterojunctions. Nano Energy, 2019, 66, 104116.	8.2	11
62	Fully Coupled Electrothermal Simulation of Large RRAM Arrays in the â€œThermal-Houseâ€. IEEE Access, 2019, 7, 3897-3908.	2.6	11
63	Design Principles of Silicon Heterojunction Solar Cells with Dopantâ€Free Interdigitated Back Contacts. Solar Rrl, 2019, 3, 1970104.	3.1	10
64	Omnidirectional whispering-gallery-mode lasing in GaN microdisk obtained by selective area growth on sapphire substrate. Optics Express, 2019, 27, 16195.	1.7	10
65	TiO₂ hierarchical sub-wavelength microspheres for high efficiency dye-sensitized solar cells. Physical Chemistry Chemical Physics, 2016, 18, 32293-32301.	1.3	9
66	Parallel Simulation of Fully Coupled Electrothermal Processes in Large-Scale Phase-Change Memory Arrays. IEEE Transactions on Electron Devices, 2019, 66, 5117-5125.	1.6	8
67	Twenty Percent Efficiency Crystalline Silicon Solar Cells with Solution-Processed Electron-Selective Contacts. ACS Applied Energy Materials, 2021, 4, 3644-3650.	2.5	8
68	Grain Boundary Defects Passivated with tert-Butyl Methacrylate for High-Efficiency Perovskite Solar Cells. ACS Applied Energy Materials, 2021, 4, 11298-11305.	2.5	8
69	Design and simulation of perovskite solar cells with Gaussian structured gradient-index optics. Optics Letters, 2019, 44, 4865.	1.7	8
70	Design Principles of Silicon Heterojunction Solar Cells with Dopantâ€Free Interdigitated Back Contacts. Solar Rrl, 2019, 3, 1900230.	3.1	7
71	Optical management for back-contact perovskite solar cells with diverse structure designs. Solar Energy, 2022, 236, 100-106.	2.9	7
72	Tunnel Oxide â€“ Magnesium as Electronâ€Selective Passivated Contact for nâ€type Silicon Solar Cell. Solar Rrl, 2018, 2, 1800241.	3.1	6

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73	Back-contact structures for optoelectronic devices: Applications and perspectives. Nano Energy, 2020, 78, 105362.	8.2	6
74	Edge effect in silicon solar cells with dopant-free interdigitated back-contacts. Nano Energy, 2020, 74, 104893.	8.2	6
75	Optimization of Tunnelâ€Junction for Perovskite/Tunnel Oxide Passivated Contact (TOPCon) Tandem Solar Cells. Physica Status Solidi (A) Applications and Materials Science, 2021, 218, 2100562.	0.8	6
76	Rear-Sided Passivation by SiNx:H Dielectric Layer for Improved Si/PEDOT:PSS Hybrid Heterojunction Solar Cells. Nanoscale Research Letters, 2016, 11, 310.	3.1	5
77	Synergistic effect of TiO2 hierarchical submicrospheres for high performance dye-sensitized solar cells. Science China Chemistry, 2017, 60, 822-828.	4.2	5
78	Hybrid Solar Cells: Enhanced Electroâ€Optical Properties of Nanocone/Nanopillar Dualâ€Structured Arrays for Ultrathin Silicon/Organic Hybrid Solar Cell Applications (Adv. Energy Mater. 8/2016). Advanced Energy Materials, 2016, 6, .	10.2	3
79	Carrier Dynamics of Nanopillar Textured Ultrathin Si Film/PEDOT:PSS Heterojunction Solar Cell. IEEE Journal of Photovoltaics, 2018, 8, 757-762.	1.5	3
80	The role of transition region charges between dopant-free asymmetric heterocontacts in interdigitated back contact silicon heterojunction solar cells. Solar Energy, 2019, 188, 1201-1208.	2.9	3
81	ITO/SnO₂ Interface Defect Passivation via Atomic Layer Deposited Al₂O₃ for Highâ€Efficiency Perovskite Solar Cells. Physica Status Solidi (A) Applications and Materials Science, 2021, 218, 2100406.	0.8	3
82	50-Âµm thick flexible dopant-free interdigitated-back-contact silicon heterojunction solar cells with front MoO_x coatings for efficient antireflection and passivation. Optics Express, 2022, 30, 21309.	1.7	3
83	GaN based UVâ€LEDs with Ni/Au Nanomeshes as Transparent pâ€type Electrodes. Physica Status Solidi (A) Applications and Materials Science, 2019, 216, 1800684.	0.8	2
84	Lowâ€Temperature Oxidationâ€Processed Titanium Oxides as Dualâ€Functional Electronâ€Selective Passivation Contacts. Solar Rrl, 2020, 4, 1900490.	3.1	2
85	Realization of a general method for extracting specific contact resistance of siliconâ€based dopantâ€free heterojunctions. Solar Rrl, 0, , 2100394.	3.1	2
86	Efficient Carrier Recombination in InGaN Pyramidal Âµ-LEDs Obtained through Selective Area Growth. Photonics, 2021, 8, 157.	0.9	1
87	Rapidâ€Thermalâ€Annealingâ€Induced Passivation Degradation and Recovery of Polysilicon Passivated Contact with Czochralski and Cast Multicrystalline Silicon Substrates. Physica Status Solidi (A) Applications and Materials Science, 2021, 218, 2100344.	0.8	1
88	Realization of high voltage output on monolithic silicon solar cells in series for selfâ€powered systems. Solar Rrl, 0, , .	3.1	0