

Hitoshi Sai

List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

101
papers

3,075
citations

31
h-index

54
g-index

122
ext. papers

3,465
ext. citations

3.6
avg. IF

5.27
L-index

#	Paper	IF	Citations
101	Integration of Si Heterojunction Solar Cells with III-V Solar Cells by the Pd Nanoparticle Array-Mediated "Smart Stack" Approach.. <i>ACS Applied Materials & Interfaces</i> , 2022 ,	9.5	3
100	Intrinsic Amorphous Silicon Bilayers for Effective Surface Passivation in Silicon Heterojunction Solar Cells: A Comparative Study of Interfacial Layers. <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2021 , 218, 2000743	1.6	9
99	Very thin crystalline silicon cells: A way to improve the photovoltaic performance at elevated temperatures. <i>Progress in Photovoltaics: Research and Applications</i> , 2021 , 29, 1093-1104	6.8	4
98	Nanocrystalline-silicon hole contact layers enabling efficiency improvement of silicon heterojunction solar cells: Impact of nanostructure evolution on solar cell performance. <i>Progress in Photovoltaics: Research and Applications</i> , 2021 , 29, 344-356	6.8	5
97	Crystallite distribution analysis based on hydrogen content in thin-film nanocrystalline silicon solar cells by atom probe tomography. <i>Applied Physics Express</i> , 2021 , 14, 016501	2.4	1
96	The sputter deposition of broadband transparent and highly conductive cerium and hydrogen co-doped indium oxide and its transfer to silicon heterojunction solar cells. <i>Progress in Photovoltaics: Research and Applications</i> , 2021 , 29, 835	6.8	5
95	Extraordinary Strong Band-Edge Absorption in Distorted Chalcogenide Perovskites. <i>Solar Rrl</i> , 2020 , 4, 1900555	7.1	31
94	III-V//Si multijunction solar cells with 30% efficiency using smart stack technology with Pd nanoparticle array. <i>Progress in Photovoltaics: Research and Applications</i> , 2020 , 28, 16-24	6.8	26
93	Atomic-Layer-Deposited TiO Nanolayers Function as Efficient Hole-Selective Passivating Contacts in Silicon Solar Cells. <i>ACS Applied Materials & Interfaces</i> , 2020 , 12, 49777-49785	9.5	9
92	Potential of very thin and high-efficiency silicon heterojunction solar cells. <i>Progress in Photovoltaics: Research and Applications</i> , 2019 , 27, 1061-1070	6.8	26
91	Thin-film microcrystalline silicon solar cells: 11.9% efficiency and beyond. <i>Applied Physics Express</i> , 2018 , 11, 022301	2.4	25
90	Impact of carrier doping on electrical properties of laser-induced liquid-phase-crystallized silicon thin films for solar cell application. <i>Japanese Journal of Applied Physics</i> , 2018 , 57, 021302	1.4	1
89	Plasmonic Color Filters Integrated on a Photodiode Array. <i>Electronics and Communications in Japan</i> , 2018 , 101, 95-104	0.4	8
88	Honeycomb micro-textures for light trapping in multi-crystalline silicon thin-film solar cells. <i>Optics Express</i> , 2018 , 26, A498-A507	3.3	10
87	Impact of silicon wafer thickness on photovoltaic performance of crystalline silicon heterojunction solar cells. <i>Japanese Journal of Applied Physics</i> , 2018 , 57, 08RB10	1.4	15
86	Passivation property of ultrathin SiOx:H / a-Si:H stack layers for solar cell applications. <i>Solar Energy Materials and Solar Cells</i> , 2018 , 185, 8-15	6.4	26
85	Progress and limitations of thin-film silicon solar cells. <i>Solar Energy</i> , 2018 , 170, 486-498	6.8	23

84	Silicon Thin-Film Solar Cells Approaching the Geometric Light-Trapping Limit: Surface Texture Inspired by Self-Assembly Processes. <i>ACS Photonics</i> , 2018 , 5, 2799-2806	6.3	1
83	Tiling of Solar Cell Surfaces: Influence on Photon Management and Microstructure. <i>Advanced Materials Interfaces</i> , 2018 , 5, 1700814	4.6	4
82	Impact of intrinsic amorphous silicon bilayers in silicon heterojunction solar cells. <i>Journal of Applied Physics</i> , 2018 , 124, 103102	2.5	22
81	Enhanced efficiency of ultrathin (~500 nm)-film microcrystalline silicon photonic crystal solar cells. <i>Applied Physics Express</i> , 2017 , 10, 012302	2.4	10
80	Key Points in the Latest Developments of High-Efficiency Thin-Film Silicon Solar Cells. <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2017 , 214, 1700544	1.6	10
79	Light absorption enhancement in thin-film GaAs solar cells with flattened light scattering substrates. <i>Journal of Applied Physics</i> , 2017 , 122, 123103	2.5	4
78	Role of the Fermi level in the formation of electronic band-tails and mid-gap states of hydrogenated amorphous silicon in thin-film solar cells. <i>Journal of Applied Physics</i> , 2017 , 122, 093101	2.5	3
77	On the interplay of cell thickness and optimum period of silicon thin-film solar cells: light trapping and plasmonic losses. <i>Progress in Photovoltaics: Research and Applications</i> , 2016 , 24, 379-388	6.8	24
76	Stabilized 14.0%-efficient triple-junction thin-film silicon solar cell. <i>Applied Physics Letters</i> , 2016 , 109, 183506	3.4	46
75	Direct evidence for pn junction without degradation in crystalline Si photovoltaic modules under hygrothermal stresses 2016 ,		3
74	On the interplay of interface morphology and microstructure of high-efficiency microcrystalline silicon solar cells. <i>Solar Energy Materials and Solar Cells</i> , 2016 , 151, 81-88	6.4	18
73	Textured surface structures formed using new techniques on transparent conducting Al-doped zinc oxide films prepared by magnetron sputtering. <i>Thin Solid Films</i> , 2016 , 614, 56-61	2.2	9
72	High-efficiency amorphous silicon solar cells: Impact of deposition rate on metastability. <i>Applied Physics Letters</i> , 2015 , 106, 053901	3.4	81
71	High-efficiency thin-film silicon solar cells realized by integrating stable a-Si:H absorbers into improved device design. <i>Japanese Journal of Applied Physics</i> , 2015 , 54, 08KB10	1.4	43
70	High-efficiency microcrystalline silicon solar cells on honeycomb textured substrates grown with high-rate VHF plasma-enhanced chemical vapor deposition. <i>Japanese Journal of Applied Physics</i> , 2015 , 54, 08KB05	1.4	59
69	Integration of Light Trapping Silver Nanostructures in Hydrogenated Microcrystalline Silicon Solar Cells by Transfer Printing. <i>Journal of Visualized Experiments</i> , 2015 , e53276	1.6	
68	Triple-junction thin-film silicon solar cell fabricated on periodically textured substrate with a stabilized efficiency of 13.6%. <i>Applied Physics Letters</i> , 2015 , 106, 213902	3.4	77
67	Effect of Front TCO Layer on Properties of Substrate-Type Thin-Film Microcrystalline Silicon Solar Cells. <i>IEEE Journal of Photovoltaics</i> , 2015 , 5, 1528-1533	3.7	8

66	Photocurrent enhancement in thin-film silicon solar cells by combination of anti-reflective sub-wavelength structures and light-trapping textures. <i>Progress in Photovoltaics: Research and Applications</i> , 2015 , 23, 1572-1580	6.8	47
65	Full-wave optoelectrical modeling of optimized flattened light-scattering substrate for high efficiency thin-film silicon solar cells. <i>Progress in Photovoltaics: Research and Applications</i> , 2014 , 22, 671-689	6.8	29
64	Influences of deposition temperature on characteristics of B-doped ZnO films deposited by metalorganic chemical vapor deposition. <i>Thin Solid Films</i> , 2014 , 559, 83-87	2.2	21
63	Transfer-printed silver nanodisks for plasmonic light trapping in hydrogenated microcrystalline silicon solar cells. <i>Applied Physics Express</i> , 2014 , 7, 112302	2.4	6
62	11.0%-Efficient Thin-Film Microcrystalline Silicon Solar Cells With Honeycomb Textured Substrates. <i>IEEE Journal of Photovoltaics</i> , 2014 , 4, 1349-1353	3.7	62
61	Bilayer contacts composed of amorphous and solid-phase crystallized transparent conducting oxides for solar cells. <i>Japanese Journal of Applied Physics</i> , 2014 , 53, 05FA08	1.4	5
60	Improved metastability and performance of amorphous silicon solar cells. <i>Materials Research Society Symposia Proceedings</i> , 2014 , 1666, 7		2
59	Investigation of Textured Back Reflectors With Periodic Honeycomb Patterns in Thin-Film Silicon Solar Cells for Improved Photovoltaic Performance. <i>IEEE Journal of Photovoltaics</i> , 2013 , 3, 5-10	3.7	18
58	Relationship between the cell thickness and the optimum period of textured back reflectors in thin-film microcrystalline silicon solar cells. <i>Applied Physics Letters</i> , 2013 , 102, 053509	3.4	98
57	Microcrystalline Silicon Solar Cells with 10.5% Efficiency Realized by Improved Photon Absorption via Periodic Textures and Highly Transparent Conductive Oxide. <i>Applied Physics Express</i> , 2013 , 6, 104101	2.4	47
56	Light Management Using Periodic Textures for Enhancing Photocurrent and Conversion Efficiency in Thin-Film Silicon Solar Cells. <i>Materials Research Society Symposia Proceedings</i> , 2013 , 1536, 3-15		5
55	Temperature influence on performance degradation of hydrogenated amorphous silicon solar cells irradiated with protons. <i>Progress in Photovoltaics: Research and Applications</i> , 2013 , 21, 1499-1506	6.8	6
54	High-efficiency thin-film silicon solar cells with improved light-soaking stability. <i>Progress in Photovoltaics: Research and Applications</i> , 2013 , 21, 1363-1369	6.8	59
53	Electric properties of undoped hydrogenated amorphous silicon semiconductors irradiated with self-ions. <i>Nuclear Instruments & Methods in Physics Research B</i> , 2012 , 285, 107-111	1.2	5
52	Anomalous enhancement in radiation induced conductivity of hydrogenated amorphous silicon semiconductors. <i>Nuclear Instruments & Methods in Physics Research B</i> , 2012 , 286, 29-34	1.2	5
51	Temporal electric conductivity variations of hydrogenated amorphous silicon due to high energy protons. <i>Journal of Non-Crystalline Solids</i> , 2012 , 358, 2039-2043	3.9	4
50	Enhanced photocurrent and conversion efficiency in thin-film microcrystalline silicon solar cells using periodically textured back reflectors with hexagonal dimple arrays. <i>Applied Physics Letters</i> , 2012 , 101, 173901	3.4	37
49	In ₂ O ₃ :H transparent conductive oxide films with high mobility and near infrared transparency for optoelectronic applications. <i>Surface Engineering</i> , 2012 , 28, 102-107	2.6	10

48	Amorphous-Silicon-Based Thin-Film Solar Cells Exhibiting Low Light-Induced Degradation. <i>Japanese Journal of Applied Physics</i> , 2012 , 51, 10NB04	1.4	6
47	Flattened Light-Scattering Substrate and Its Application to Thin-Film Silicon Solar Cells. <i>Japanese Journal of Applied Physics</i> , 2012 , 51, 10NB07	1.4	2
46	Light Trapping by Ag Nanoparticles Chemically Assembled inside Thin-Film Hydrogenated Microcrystalline Si Solar Cells. <i>Japanese Journal of Applied Physics</i> , 2012 , 51, 042302	1.4	3
45	Light Trapping by Ag Nanoparticles Chemically Assembled inside Thin-Film Hydrogenated Microcrystalline Si Solar Cells. <i>Japanese Journal of Applied Physics</i> , 2012 , 51, 042302	1.4	4
44	Amorphous-Silicon-Based Thin-Film Solar Cells Exhibiting Low Light-Induced Degradation. <i>Japanese Journal of Applied Physics</i> , 2012 , 51, 10NB04	1.4	7
43	Flattened Light-Scattering Substrate and Its Application to Thin-Film Silicon Solar Cells. <i>Japanese Journal of Applied Physics</i> , 2012 , 51, 10NB07	1.4	4
42	Temporal Donor Generation in Undoped Hydrogenated Amorphous Silicon Induced by Swift Proton Bombardment. <i>Applied Physics Express</i> , 2011 , 4, 061401	2.4	3
41	Light trapping effect of patterned back surface reflectors in substrate-type single and tandem junction thin-film silicon solar cells. <i>Solar Energy Materials and Solar Cells</i> , 2011 , 95, 131-133	6.4	26
40	Flattened light-scattering substrate in thin film silicon solar cells for improved infrared response. <i>Applied Physics Letters</i> , 2011 , 98, 113502	3.4	70
39	2011 ,		5
38	High-Temperature Solar Selective Absorber Material Using Surface Microcavity Structures 2011 ,		1
37	Impact of front and rear-side texturing on light trapping in thin-film silicon solar cells 2010 ,		1
36	Proton-induced photoconductivity increment and the thermal stability of a-Si:H thin film. <i>Journal of Non-Crystalline Solids</i> , 2010 , 356, 2114-2119	3.9	9
35	Impact of front and rear texture of thin-film microcrystalline silicon solar cells on their light trapping properties. <i>Journal of Applied Physics</i> , 2010 , 108, 044505	2.5	99
34	Mie scattering enhanced near-infrared light response of thin-film silicon solar cells. <i>Applied Physics Letters</i> , 2010 , 97, 063507	3.4	38
33	Application of hydrogen-doped In ₂ O ₃ transparent conductive oxide to thin-film microcrystalline Si solar cells. <i>Thin Solid Films</i> , 2010 , 518, 2930-2933	2.2	38
32	Potential of thin-film silicon solar cells by using high haze TCO superstrates. <i>Thin Solid Films</i> , 2010 , 518, 3054-3058	2.2	66
31	Crystalline Si Heterojunction Solar Cells with the Double Heterostructure of Hydrogenated Amorphous Silicon Oxide. <i>Japanese Journal of Applied Physics</i> , 2009 , 48, 064506	1.4	13

30	Spectral Control of Thermal Radiation by Metallic Surface Relief Gratings. <i>Materials Research Society Symposia Proceedings</i> , 2009 , 1162, 1		
29	Light Trapping in Thin-Film $\mu\text{c-Si:H}$ Solar Cells Using Self-Ordered 2D Grating Reflector. <i>Materials Research Society Symposia Proceedings</i> , 2009 , 1153, 1		1
28	Back surface reflectors with periodic textures fabricated by self-ordering process for light trapping in thin-film microcrystalline silicon solar cells. <i>Solar Energy Materials and Solar Cells</i> , 2009 , 93, 1087-1090	6.4	60
27	Effect of self-orderly textured back reflectors on light trapping in thin-film microcrystalline silicon solar cells. <i>Journal of Applied Physics</i> , 2009 , 105, 094511	2.5	73
26	Enhancement of light trapping in thin-film hydrogenated microcrystalline Si solar cells using back reflectors with self-ordered dimple pattern. <i>Applied Physics Letters</i> , 2008 , 93, 143501	3.4	108
25	Light Trapping in $\mu\text{-Si:H}$ Thin-film Solar Cells by Back Surface Reflector with Grating Structure Fabricated by Self-ordering Process. <i>Materials Research Society Symposia Proceedings</i> , 2008 , 1101, 1		
24	Directional solidification of polycrystalline silicon ingots by successive relaxation of supercooling method. <i>Journal of Crystal Growth</i> , 2007 , 308, 5-9	1.6	56
23	Light trapping effect of submicron surface textures in crystalline Si solar cells. <i>Progress in Photovoltaics: Research and Applications</i> , 2007 , 15, 415-423	6.8	165
22	Wide-Angle Antireflection Effect of Subwavelength Structures for Solar Cells. <i>Japanese Journal of Applied Physics</i> , 2007 , 46, 3333-3336	1.4	78
21	Study on Iron Distribution and Electrical Activities at Grain Boundaries in Polycrystalline Silicon Substrate for Solar Cells. <i>Japanese Journal of Applied Physics</i> , 2006 , 45, 6153-6156	1.4	22
20	Numerical Analysis and Demonstration of Submicron Antireflective Textures for Crystalline Silicon Solar Cells 2006 ,		3
19	Antireflective subwavelength structures on crystalline Si fabricated using directly formed anodic porous alumina masks. <i>Applied Physics Letters</i> , 2006 , 88, 201116	3.4	129
18	Growth and Characterization of Multicrystalline Silicon Ingots Grown by Directional Solidification Technique 2006 ,		1
17	Present status and future of crystalline silicon solar cells in Japan. <i>Solar Energy</i> , 2006 , 80, 104-110	6.8	25
16	Numerical study on spectral properties of tungsten one-dimensional surface-relief gratings for spectrally selective devices. <i>Journal of the Optical Society of America A: Optics and Image Science, and Vision</i> , 2005 , 22, 1805-13	1.8	46
15	Tuning of the thermal radiation spectrum in the near-infrared region by metallic surface microstructures. <i>Journal of Micromechanics and Microengineering</i> , 2005 , 15, S243-S249	2	67
14	Thermophotovoltaic Generation with Microstructured Tungsten Selective Emitters. <i>AIP Conference Proceedings</i> , 2004 ,	0	5
13	Thermophotovoltaic generation with selective radiators based on tungsten surface gratings. <i>Applied Physics Letters</i> , 2004 , 85, 3399-3401	3.4	133

12	SPECTRALLY SELECTIVE THERMAL RADIATORS AND ABSORBERS WITH PERIODIC MICROSTRUCTURED SURFACE FOR HIGH-TEMPERATURE APPLICATIONS. <i>Microscale Thermophysical Engineering</i> , 2003 , 7, 101-115		26
11	Solar selective absorbers based on two-dimensional W surface gratings with submicron periods for high-temperature photothermal conversion. <i>Solar Energy Materials and Solar Cells</i> , 2003 , 79, 35-49	6.4	74
10	High-temperature resistive surface grating for spectral control of thermal radiation. <i>Applied Physics Letters</i> , 2003 , 82, 1685-1687	3.4	155
9	Fabrication of protonic conductors with nano-structured surface by porous alumina membrane mask. <i>Solid State Ionics</i> , 2002 , 154-155, 693-697	3.3	1
8	100 nm period silicon antireflection structures fabricated using a porous alumina membrane mask. <i>Applied Physics Letters</i> , 2001 , 78, 142-143	3.4	221
7	Spectral control of thermal emission by periodic microstructured surfaces in the near-infrared region. <i>Journal of the Optical Society of America A: Optics and Image Science, and Vision</i> , 2001 , 18, 1471-6	1.8	63
6	407 Thermophotovoltaic power generation system equipped with rare-earth selective thermal emission. <i>The Proceedings of Conference of Tohoku Branch</i> , 2001 , 2001.36, 136-137	0	
5	201 Spectral control of thermal radiation of W with periodic surface microstructures for TPV applications. <i>The Proceedings of Conference of Tohoku Branch</i> , 2001 , 2001.36, 48-49	0	
4	Selective Emission of Al ₂ O ₃ /Er ₃ Al ₅ O ₁₂ Eutectic Composite for Thermophotovoltaic Generation of Electricity. <i>Japanese Journal of Applied Physics</i> , 2000 , 39, 1957-1961	1.4	35
3	Solar thermophotovoltaic using Al ₂ O ₃ /Er ₃ Al ₅ O ₁₂ eutectic composite selective emitter		9
2	Surface microstructured selective emitters for TPV systems		1
1	Very Thin (56 nm) Silicon Heterojunction Solar Cells with an Efficiency of 23.3% and an Open-Circuit Voltage of 754 mV. <i>Solar Rrl</i> , 2100634	7.1	4